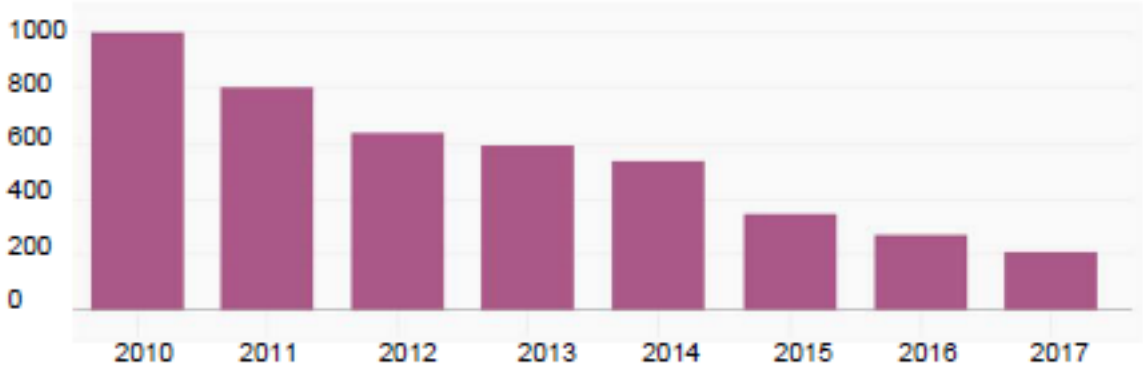
Answer all questions.

Question 1: The Rise of Electric Vehicles

Figure 1: Global price of cobalt (US$ per million tonnes)

Source: *Trading Economics*, accessed 5 July 2018

Figure 2: Global price of lithium-ion battery (US$/kilowatt-hour)



Source: *Bloomberg New Energy Finance*, accessed 5 July 2018

Extract 1: Technology is fuelling the use of cobalt

Cobalt is a hard, shiny and greyish metal which has many strategic and irreplaceable industrial uses as a result of its unique properties. Currently used in numerous industrial chemical processes, close to half of the world's cobalt supplied today is used in lithium-ion batteries, putting it at the heart of the drive for alternative and renewable energy systems. There has not been a good substitute to make lithium-ion batteries without the mineral. However, more than half of the world's reserves and production of the metal are in one country, the Democratic Republic of Congo. This has led to a fear of shortage.

Mining companies are planning new cobalt operations that may balance supply and demand in the near term, but if electric vehicles continue to gain market share, any stabilisation may be short-lived. Each new electric vehicle, which runs on lithium-ion battery, uses about 10 kg of

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cobalt. The use of cobalt is expected to accelerate further as electric vehicles will be close to reaching cost parity with internal combustion engine vehicles.

Sources*: www.dartoncommodities.co.uk/* (accessed on 21 July 2018); *CNBC*, 16 April 2018

Extract 2: Diesel-powered cars are on their way out

Diesel-powered cars appeal to European drivers for their fuel efficiency and power. Carmakers like them because they emit less carbon dioxide than similar petrol engines do, making it easier to comply with stiff regulations. However, in recent years, governments have shifted gear. The advent of electric cars has knocked diesel off its perch as the fuel with the smallest carbon footprint. Diesel also releases greater quantities of nasty gases other than carbon, such as nitrogen oxides, than petrol does. Many cities in Europe, and farther afield, want to eliminate diesel cars from their roads as early as 2025. Governments hope that the void left by diesel will be filled by zero-emission battery-powered models. But mass adoption of such vehicles, which for now are expensive and have limited ranges in travel distance, still appears a way off.

Source: *The Economist*, 13 February 2018

Extract 3: Charging ahead, China's dirty race for clean vehicles

After a decade of halting progress, electric cars are zooming ahead in China. Last year the number of registrations of new electric vehicles (EVs) in the country overtook that in America, making it the world's biggest and fastest growing market. The category includes electric-only cars as well as plug-in hybrids that can also run on petrol. Analysts expect the market to grow by nearly 50% a year for the rest of this decade.

The government has had a big role in the marked expansion of EVs in China. It doles out generous subsidies to local makers, to parts suppliers and to those who buy the final products. Last year alone, China shovelled over 90 billion yuan in subsidies into the industry, which it calls "strategic". This has led to queues of EVs on the streets, mostly of poor design and quality. China has yet to produce an EV manufacturer that can compete at the level of America's Tesla Motors.

The Chinese government is also encouraging other Chinese firms, including the country's tech giants, to innovate in the field. Tencent, a gaming and social media firm, is developing internet-connected EVs with Taiwan's Foxconn. Alibaba, an e-commerce firm, is providing data and cloud-computing services to Kandi Technologies, a local EV-maker that is popularising the sharing of the vehicles.

Source: *The Economist*, 28 July 2016

Extract 4: Autonomous vehicles are just around the corner

Every day around 10 million people take an Uber ride. The company has made ride-hailing commonplace in more than 600 cities in 82 countries and Uber is experimenting the use of autonomous vehicles– cars that can drive by themselves. Autonomous vehicles have made rapid progress in recent years and can now be seen on the roads in several American cities, easily identified by the clusters of sensors on their roofs.

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The combination of the use of autonomous vehicles and ride-hailing, together with a switch to electric vehicles, seems likely to undermine the logic of car ownership for many people. Ride-hailing services in the rich world currently cost around US$2.50 per mile, compared with about US$1.20 per mile to own and operate a private car. But the driver cost accounts for about 60% of the cost of ride-hailing. UBS, an investment bank, reckons that automation, competition and electrification (which makes cars more expensive to buy but much cheaper to run) will cut the cost of ride-hailing by 70%, to about US$0.70 per mile. UBS predicts that autonomous taxis will take off rapidly after 2025, with 80% of people using them in cities, where available, by 2035.

Source: *The Economist*, 1 March 2018

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Suggested Answers

(a)	**Using examples from extract 1, distinguish between complements in demand and derived demand.**	**[2]**

Skills:
- ✓ *Identify examples from Extract 1 that shows complement in demand and derived demand.*
- ✓ *Explain the difference between complement in demand and derived demand.*

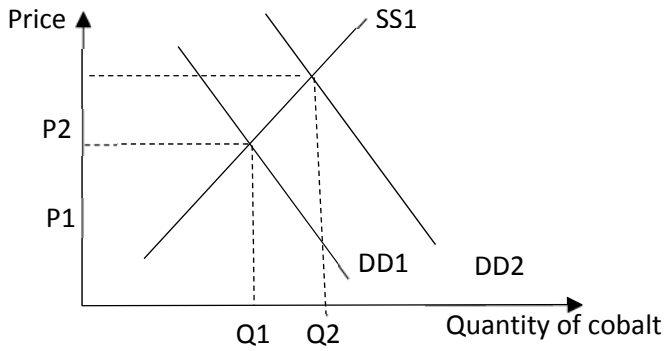
- **Lithium-ion batteries and electric vehicles are complements in demand** as lithium-ion battery is needed to run (used in conjunction/together) the electric vehicles
- On the other hand, **the demand for cobalt is derived from the demand for lithium-ion battery** as cobalt is needed to manufacture (used as an input to produce) lithium-ion battery.

Mark scheme:
- ***1 mark for explaining that lithium-ion battery and electric vehicle are complements in demand.***
- ***1 mark for explaining that demand for cobalt is derived from the demand of lithium-ion battery.***

(b)	**With reference to Extract 1, and using a supply and demand diagram, account for the sharp increase in the global price of cobalt between 2016 and 2018.**	**[4]**

Skills:
- ✓ *Identify a factor from extract 1 that has resulted in the increase in global price of cobalt.*
- ✓ *Explain that the increase in price is caused by an increase in demand and the magnitude of increase is influenced by the price elasticity of supply.*

- The increase in price of cobalt is due to an **increase in demand** as there has been an increase in the use of electric vehicles which requires cobalt in the manufacturing of lithium-ion batteries to power electric vehicles.
- This resulted in a **rightward shift of the demand curve → shortage** of cobalt at the original equilibrium price → **upward pressure on price** → price increase.
- The sharp increase in price is due to the **supply of cobalt being price inelastic** as it takes time to mine the cobalt and most of the world's reserves and production of cobalt are in one country, the Democratic Republic of Congo (extract 1) → producers cannot respond to the price increase quickly and thus will increase price sharply to eliminate the shortage.



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Mark scheme:

- ***1 mark for identifying demand for cobalt has increased due to increase in demand for electric vehicles and lithium-ion batteries. (use of case evidence)***
- ***1 mark for explaining how the increase in demand of cobalt leads to an increase in its price.***
- ***1 mark for explaining that the sharp increase in price is due to supply being price inelastic***
- ***1 mark for correct diagram.***

(c)	**Explain a factor that could be responsible for the trend in the global price of lithium-ion battery shown in Figure 2.**	**[3]**

Skills:

✓ *Identify the trend in the global price of lithium-ion battery in figure 2.*
✓ *Explain the price change using demand and supply concepts.*

- The global price of lithium-ion battery has been **decreasing** as shown in figure 2.
- Since the demand for electric vehicles has been increasing, which will increase the demand for lithium-ion battery and hence its price, **the fall in global price of lithium-ion battery can be attributed to a larger increase in supply**. (increase in SS > increase in DD).
- The increase in supply could be caused by lowering cost of production due to technology improvement, scale expansion or increase in number of lithium-ion battery manufacturers.

Mark scheme:

- ***1 mark for identifying that global price of lithium-ion battery is decreasing.***
- ***1 mark for explaining that the fall in price is due to an increase in supply.***
- ***1 mark for explaining a possible reason for the increase in supply.***

Alternative mark scheme:

- ***1 mark for identifying that global price of lithium-ion battery is decreasing.***
- ***2 marks for explaining that the fall in price is due to a larger increase in supply than increase in demand.***

(Max 2 marks for answer that only explains the fall in price is due to an increase in supply, without giving an explanation for this increase)

(d)	**Consider whether an expansion in the supply of cobalt by the mining companies will increase their total revenue.**	**[5]**

Skills:

✓ *Explaining the impact on an increase in supply on total revenue*
✓ *Explaining how the impact on total revenue is dependent on the price elasticity of demand and the strength of demand as well.*

- An expansion in the supply of cobalt by the mining companies will shift the supply curve to the right, resulting in a surplus and downward pressure on price, assuming demand is constant → **equilibrium price will fall and equilibrium quantity will increase.**
- The impact on total revenue is **dependent on the magnitude of change in price and quantity** since total revenue is given by price multiplied with quantity. This can be determined using the concept of **price elasticity of demand**.

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- The **demand for cobalt is price inelastic** as there is a lack of strong substitute (extract 1) → the decrease in price will lead to a less than proportionate increase in quantity demanded → **total revenue will fall.**
- However, the **demand for cobalt is expected to increase** as demand for electric vehicle increases (extract 1) due to changing taste and preference. An increase in demand will push equilibrium quantity and price to rise, leading to an **increase in total revenue**.
- Therefore, whether the expansion in the supply of cobalt will increase the total revenue of mining companies depends on the extent of the increase in demand for cobalt in the future and the price elasticity of demand for cobalt as demand may become price elastic if a stronger substitute could be found.

Mark scheme:

- ***1 mark for explaining the impact of increase in supply on equilibrium price and quantity of cobalt.***
- ***2 marks for explaining how total revenue may decrease using the concept of price elasticity of demand.***
- ***2 marks for explaining how total revenue may increase due to an expected increase in demand for cobalt or change in price elasticity of demand of cobalt in the future.***

(e)	**Explain whether electric vehicle is a public good.**	**[4]**

Skills:

✓ *Explain the characteristics of a public good and justify whether electric vehicle has those characteristics.*

- A public good will display the characteristics of **non-rivalry in consumption and non-excludability.**
- Non-excludability: Once the good is provided, it is difficult or impossible to exclude non-payers from consuming the good.
- **Application to electric vehicle**: However, the usage of electric vehicle is excludable → A non-paying individual is easily denied the usage of the electric vehicle entry if he/she has not made the necessary payment.
- Non-rivalrous in consumption: The consumption of the good for an additional user will not diminish the quantity or satisfaction of existing users consuming the good.
- **Application to electric vehicle**: However, the consumption of electric vehicle is rivalrous → there is a maximum seating capacity in an electric vehicle.
- Thus, electric vehicle **does not display BOTH characteristics of a public good** and hence it is a private good.

Mark scheme:

- ***2 marks for explaining the characteristics of a public good (non-rivalrous and non-excludability in consumption).***
- ***2 marks for applying the concepts of non-rivalrous and non-excludability on electric vehicles***

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(f)	**Explain the market failure resulting from the usage of diesel-powered cars.**	**[6]**

Skills:

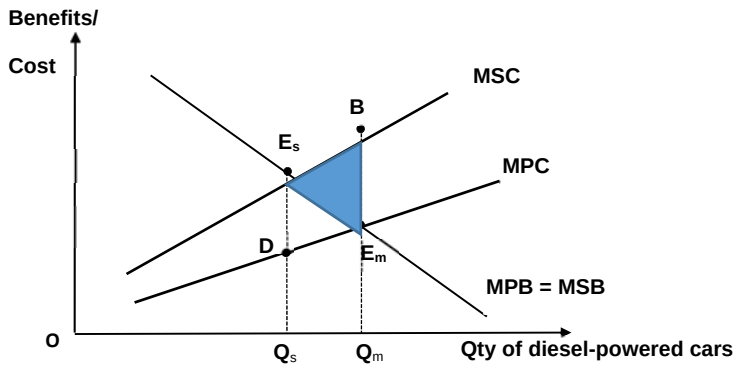
- ✓ *Explain what is meant by market failure*
- ✓ *Explain how the use of diesel-powered cars generates negative externality, leading to deadweight loss in the society.*

Identifying the sources of market failure in the market for diesel-powered cars

- The usage of diesel-powered cars **generates negative externalities** as it emits harmful pollutant such as nitrogen oxide and thus **pollutes the air** (extract 2).
- As other vehicles, the use of diesel-powered cars generates negative externalities arising from **road congestion.**
- As negative externalities cause the **underpricing** in the production and consumption of goods, price mechanism will allocate too much resources in the market for diesel-powered cars when there is no government intervention.

Explaining why the presence of negative externalities leads to market failure and welfare loss

- Negative externalities arise when the usage of diesel-powered cars affects the well-being of a third party negatively and the affected-party does not receive any compensation for the effect.
- When driving diesel-powered cars, consumers only consider their Marginal Private Benefits (MPB) and Marginal Private Cost (MPC). The private benefit is the satisfaction derived from the convenience of driving the car while the private costs comprise the price of the car and the fuel cost.
- To maximize their own satisfaction, they will choose to own or use cars to the point of Q_m where their MPC = MPB.
- However, these consumers do not take into account the Marginal External Cost (MEC) imposed on third parties.
- In extract 2, **these external costs are the air pollution and road congestion** which harm the well-being of the population. Road congestion causes longer journey times for other drivers on the road and result in a **less efficient transportation system**, hence lowering overall productivity in the economy
- Since MEC is positive, this implies that there is a divergence between MSC and MPC; and MSC > MPC as MSC = MPC + MEC. This is illustrated below.



- To society, the social optimum is at Qs where MSB = MSC, as this maximizes society welfare.
- As such, since Qs < Qm, there is an **overconsumption (excessive ownership or use) of diesel-powered cars** by QsQm.
- There is **underpricing** in the usage of diesel-powered cars and society incurs more resources than what car owners are paying, leading to **welfare loss which is the use of resources that brings about net loss to society.**

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- There is a welfare loss of EsEmB and one of the forms of welfare loss is the total loss in national income due to various medical illnesses caused by air pollution and lower productivity due to congestion.
- Therefore, the price mechanism has failed to allocate resources in an efficient manner and thus government needs to intervene in this market to improve society's welfare.

Level	Descriptor	Marks
L3	• A developed explanation of market failure from the usage of diesel-powered cars using economic analysis. • Good use of examples in explanation. • Limited or no conceptual inaccuracies in explanation.	5 – 6
L2	• An underdeveloped explanation of market failure using economic analysis. • Limited or no use of examples in explanation. • Some conceptual inaccuracies in explanation.	3 – 4
L1	• For an answer that is largely inaccurate or irreverent. • Severely lacking in economic analysis.	1 – 2

(g)	**With reference to Extract 3, evaluate the policies adopted by the Chinese government to increase the production of electric vehicles in China.**	**[9]**

Skills:

- *Identify the policies adopted by the Chinese government to increase the production of electric vehicles in China.*
- *Explain how these policies would increase equilibrium output in the market.*
- *Evaluate the policies using appropriate criteria such as effectiveness and sustainability of the of policies.*

Introduction

- The Chinese government has given out **subsidies to producers and encouraged innovation** to increase production of electric vehicles in China.
- The rationale of these policies is to reduce the use of fuel-based vehicles so as to address the problem of market failure due to negative externalities as explained in part (f).

Explaining the policy of subsidy

- A subsidy to producers is meant to lower the cost of production to producers (government absorbs part of the cost) to encourage a higher production level.
- When subsidies are given to the producers, cost of production will fall, and supply will increase. A surplus occurs and there is downward pressure on price. Thus, subsidies will lower the price of electric vehicles.
- Lower prices of electric vehicles will **reduce the demand for fuel-based ones**.

Evaluating the policy of subsidy

- The subsidy can lead to **complacency among firms**, which has led to the production of **electric vehicles of poor quality** and loss of competitiveness.

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- The **effectiveness** of subsidy to increase production also **depends on the price elasticity of demand of electric vehicle.** The demand of electric vehicle could be said to be price inelastic as it may be a poor substitute to diesel-powered vehicle. Therefore, even if the price of electric vehicle falls, the increase in output may be very small in extent as drivers are not very price sensitive, making the policy of subsidy an ineffective one and resulting in wastage of resources as the intended outcome could not be achieved.
- Moreover, this policy of subsidizing the producers of electric vehicle may not be **sustainable** as it will strain the Chinese government's limited budget. To sustain the subsidy, the Chinese government may need to raise tax in the future or reallocate resources from other sectors → incurring an opportunity cost which could have been better used such as infrastructure or healthcare.

Explaining the policy of encouraging innovation

- The Chinese government has also tried to encourage innovation among Chinese tech firms in its attempt to increase production of electric vehicle such as **making an internet-connected electric vehicle.** This would **improve the quality of electric vehicle** and catered more to the preference of the increasing tech-savvy Chinese population.
- Encouraging innovation in this case would result in an **increase in demand** for electric vehicle as consumers are more attracted to the higher quality electric vehicles. The increase in demand would result in a shortage of electric vehicle and put upward pressure on price. This would then act as a signal for producers to increase production of electric vehicle.

Evaluating the policy of encouraging innovation

- The policy may be not very **effective** as the **success of innovation is not guaranteed**, leading to **uncertain outcomes**. Innovation may fail, and this will result in wastage of resources as a result as well.
- Moreover, **innovation takes time** and it will only increase production of electric vehicle in the **long run**. Hence it will not be able to increase production of electric vehicle immediately.
- In addition, innovation will incur **huge expenses for the firms** as research and development (R&D) is expensive as well. Some firms may not have the necessary resources to innovate and hence it may not be **feasible** for all firms to conduct innovation.

Conclusion

- In view of the possible constraint faced by firms and to speed up the innovation process, the **Chinese government may also need to provide R&D grants for the firms**.
- The policy of **encouraging innovation is also a more effective long-term policy** while the **policy of subsidy to producers is more effective as a short-term policy** as shown by the huge number of low quality electric vehicles on the streets in China.

Level	Descriptors	Marks
L2	• A developed and balanced analysis of two policies implemented by the Chinese government to increase production of electric vehicles. • max of 4 marks for two policies but not well-developed. • Good use of examples from the extracts • Limited or no conceptual inaccuracies in explanation	4-6
L1	• A developed but one-sided analysis of a policy implemented by the Chinese government to increase production of electric vehicles. Or • A balanced but underdeveloped analysis of a policy implemented by the Chinese government to increase production of electric vehicles. • Some or no use of examples from the extracts.	1-3

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	• Some conceptual inaccuracies in explanation.	
Evaluation		
E2	Valid evaluative comments with clear criteria e.g. effectiveness or sustainability of the policies.	2-3
E1	Attempt at evaluating but without elaboration or explanation	1

(h)	**Discuss whether increasing production of electric vehicles, together with driverless and ride-hailing transportation, will mean that governments do not need to intervene in the public transport market of buses and trains.**	**[12]**

Skills:

- *Explain the rationale of government intervention in the public transport market of buses and trains* → ***to improve resources allocation in the land transport market****.*
- *Explain why government may not need to intervene in the public transport market of buses and trains due to increasing production of electric vehicles, together with driverless and ride-hailing transportation.*
- *Provide* ***an alternative perspective*** *on why government may still need to intervene in the public transport market of buses and trains.*
- *Provide an overall judgement on whether there is a need for government to intervene in the public transport market of buses and trains.*

Introduction: unpacking and identifying the need for government intervention in the public transport market of buses and trains

- **Government intervention is needed when the price mechanism is unable to allocate resources efficiently or equitably.**
- In this case, government intervene in the public transport market of buses and trains due to **negative externalities generated from usage of fuel-based vehicles (air pollution and road congestion) as well as equity concern.**
- **Public transport is a substitute to various forms of private transport.** Hence governments intervene in the public transport market of buses and trains using policies such as subsidies or regulation to reduce price of public transport as well as improving quality of the trains and buses to make it a strong substitute to private transport **(fall in demand).** This would address the problem market failure in the market for car usage where there is over-allocation of resources.
- Public transport is also used by the masses and **a necessity for transportation** purposes → there is a need for government to **ensure public transport is affordable, especially for the lower income.**

Explaining the basis of the suggestion in the questions (with electric vehicles, driverless and ride-hailing transportation, governments do not need to intervene in public transport market)

- **The development of autonomous ride-hailing using electric vehicles can correct market failure through market forces → less pollution and fall in car ownership**

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- The increase in production of electric vehicles means **less harmful pollutants are being released,** as car owners switch from diesel-powered cars to the more environmentally friendly electric vehicle. This would **reduce the negative externalities from air pollution.**
- Moreover, ride-hailing will be much cheaper with the use of autonomous electric vehicles as the bulk of the cost of ride-hailing is accounted to the driver (Extract 4). **Car ownership may thus fall as consumers switch from car ownership to ride hailing.**

Evaluation: While the options of electric vehicles and ride hailing reduce air pollution, **there will still be the market failure due to traffic congestion** if too many cars on the road, including driverless ones.

- The increasing use of ride-hailing in autonomous electric vehicle **will worsen road congestion instead as consumer switch from using public transport to ride-hailing** when ride-hailing becomes cheaper and is more comfortable.
- Ride-hailing companies such as Uber may increase their capacity by adding more cars on the road in anticipation of increasing use of ride-hailing.
- Therefore, **government intervention in public transport is still needed to reduce the number of vehicles on the road to manage road congestion.**

Evaluation: Government intervention in public transport is still needed to ensure the **affordability** of mass land transportation.

- While the increase in usage of autonomous electric vehicle may lead to a more efficient allocation of resources, **government intervention may still be needed due to equity concern.**
- Although the cost of ride-hailing may be reduced due to the autonomous electric vehicle, it may be still too expensive, especially for the lower income. Without government intervention in the public transport market, **the lower income may not have affordable mode of transport**, affecting their cost of living and quality of life.
- For example, the **Public Transport Council (PTC) regulate public transport fares in Singapore** by ensuring that the price charge reflects market dynamics (such as changes in operating cost and ridership) but remains affordable. Students and senior citizens are also given concessionary fare at lower prices.
- In addition, the **prohibitive investment and operation costs may also act as a constraint for private firms to operate public transport of buses and train**, especially that of trains since train railways are also needed. Therefore, government needs to provide for these buses and trains if private firms are unable to do so since government has greater ability to do so as it can raise tax to fund for the public transport.

Evaluation: However, the funding of public transport will put a **huge strain on government budget**, hence incurring a huge **opportunity cost** where the government budget could be spent on other more productive areas. Raising tax to fund for the public transport has also trade-offs that consumers have lesser disposable income and hence purchasing power, resulting in lower material standard of living in the short term if income tax was raised. Therefore, intervention does not necessarily mean providing free public transport. A reasonable extent of fares on consumers will be needed to ensure sustainability of the public transport model. **It is also important that the public transport is of sound quality in comprehensiveness and reliability to make it a viable alternative to private transport.**

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Conclusion: Coming to a well-reasoned judgement on the need for government intervention in the public transport market of buses and trains with increasing production of electric vehicles, together with driverless and ride-hailing transportation.

- There is still a need for government intervention in the public transport market of buses and trains even if autonomous electric vehicle and ride hailing become more affordable because traffic congestion and equity concerns will remain.
- It is also critical for the government to manage vehicle population growth and ensuring true pricing in vehicle usage because if these are not carefully calibrated, market failure in land transport will not be addressed.

Level	Descriptors	Marks
L3	• For a well-developed and balanced answer that **considers both efficiency (air pollution and congestion) and equity issues** • Low level 3 (7m) awarded for a well-developed and balanced answer that fails to recognize that congestion and equity are also key reasons for government intervention in public transport, not just air pollution • Discussion considers the trends mentioned in question	7-9
L2	• Undeveloped answer that considers only air pollution and congestion in discussion OR • Undeveloped answer that considers only air pollution and equity in discussion Or • Answer is confined to discussion of government intervention in public transport, with little contextualization to trends mentioned in question	4-6
L1	• For an answer that is largely irrelevant or inaccurate • For an answer that lacks economic reasoning	1-3
Evaluation		
E2	Valid evaluative comments with clear explanation, providing an overall judgement on whether government intervention in the public transport market is needed with increasing production of electric vehicles, together with driverless and ride-hailing transportation.	2-3
E1	Attempt at evaluating but without elaboration or explanation	1

[Total: 45]

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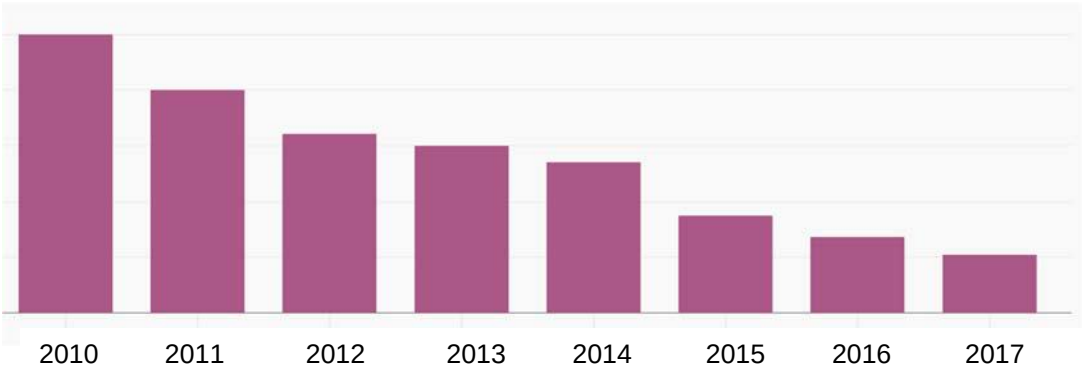
Answer **all** questions.

Question 1: The Rise of Electric Vehicles

Figure 1: Global price of cobalt (US$ per million tonnes)

Source: *Trading Economics*, accessed 5 July 2018

Figure 2: Global price of lithium-ion battery (US$/kilowatt-hour)



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Extract 1: Technology is fuelling the use of cobalt

Cobalt is a hard, shiny and greyish metal which has many strategic and irreplaceable industrial uses as a result of its unique properties. Currently used in numerous industrial chemical processes, close to half of the world's cobalt supplied today is used in lithium-ion batteries, putting it at the heart of the drive for alternative and renewable energy systems. There has not been a good substitute to make lithium-ion batteries without the mineral. However, more than half of the world's reserves and production of the metal are in one country, the Democratic Republic of Congo. This has led to a fear of shortage.

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Extract 2: Diesel-powered cars are on their way out

Diesel-powered cars appeal to European drivers for their fuel efficiency and power. Carmakers like them because they emit less carbon dioxide than similar petrol engines do, making it easier to comply with stiff regulations. However, in recent years, governments have shifted gear. The advent of electric cars has knocked diesel off its perch as the fuel with the smallest carbon footprint. Diesel also releases greater quantities of nasty gases other than carbon, such as nitrogen oxides, than petrol does. Many cities in Europe, and farther afield, want to eliminate diesel cars from their roads as early as 2025. Governments hope that the void left by diesel will be filled by zero-emission battery-powered models. But mass adoption of such vehicles, which for now are expensive and have limited ranges in travel distance, still appears a way off.

Source: *The Economist*, 13 February 2018

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The government has had a big role in the marked expansion of EVs in China. It doles out generous subsidies to local makers, to parts suppliers and to those who buy the final products. Last year alone, China shovelled over 90 billion yuan in subsidies into the industry, which it calls "strategic". This has led to queues of EVs on the streets, mostly of poor design and quality. China has yet to produce an EV manufacturer that can compete at the level of America's Tesla Motors.

The Chinese government is also encouraging other Chinese firms, including the country's tech giants, to innovate in the field. Tencent, a gaming and social media firm, is developing internet-connected EVs with Taiwan's Foxconn. Alibaba, an e-commerce firm, is providing data and cloud-computing services to Kandi Technologies, a local EV-maker that is popularising the sharing of the vehicles.

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Extract 4: Autonomous vehicles are just around the corner

Every day around 10 million people take an Uber ride. The company has made ride-hailing commonplace in more than 600 cities in 82 countries and Uber is experimenting the use of autonomous vehicles– cars that can drive by themselves. Autonomous vehicles have made rapid progress in recent years and can now be seen on the roads in several American cities, easily identified by the clusters of sensors on their roofs.

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Suggested Answers

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✓ *Identify examples from Extract 1 that shows complement in demand and derived demand.*
✓ *Explain the difference between complement in demand and derived demand.*

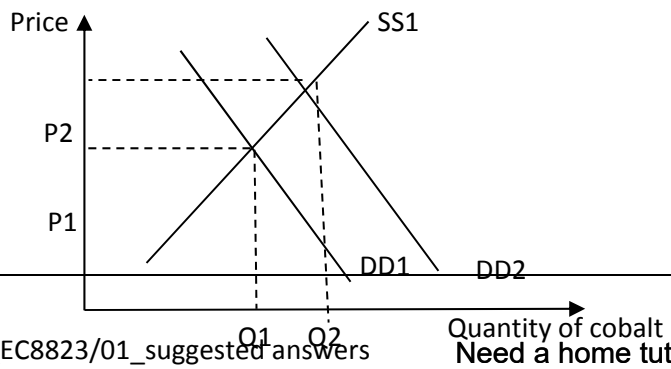
- **Lithium-ion batteries and electric vehicles are complements in demand** as lithium-ion battery is needed to run (used in conjunction/together) the electric vehicles
- On the other hand, **the demand for cobalt is derived from the demand for lithium-ion battery** as cobalt is needed to manufacture (used as an input to produce) lithium-ion battery.

<u>Mark scheme</u>:
- ***1 mark for explaining that lithium-ion battery and electric vehicle are complements in demand.***
- ***1 mark for explaining that demand for cobalt is derived from the demand of lithium-ion battery.***

(b)	**With reference to Extract 1, and using a supply and demand diagram, account for the sharp increase in the global price of cobalt between 2016 and 2018.**	**[4]**

Skills:
✓ *Identify a factor from extract 1 that has resulted in the increase in global price of cobalt.*
✓ *Explain that the increase in price is caused by an increase in demand and the magnitude of increase is influenced by the price elasticity of supply.*

- The increase in price of cobalt is due to an **increase in demand** as there has been an increase in the use of electric vehicles which requires cobalt in the manufacturing of lithium-ion batteries to power electric vehicles.
- This resulted in a **rightward shift of the demand curve ❼ shortage** of cobalt at the original equilibrium price ❼ **upward pressure on price ❼** price increase.
- The sharp increase in price is due to the **supply of cobalt being price inelastic** as it takes time to mine the cobalt and most of the world's reserves and production of cobalt are in one country, the Democratic Republic of Congo (extract 1) ❼ producers cannot respond to the price increase quickly and thus will increase price sharply to eliminate the shortage.



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Mark scheme:

- ***1 mark for identifying demand for cobalt has increased due to increase in demand for electric vehicles and lithium-ion batteries. (use of case evidence)***
- ***1 mark for explaining how the increase in demand of cobalt leads to an increase in its price.***
- ***1 mark for explaining that the sharp increase in price is due to supply being price inelastic***
- ***1 mark for correct diagram.***

(c)	**Explain a factor that could be responsible for the trend in the global price of lithium-ion battery shown in Figure 2.**	**[3]**

Skills:

✓ *Identify the trend in the global price of lithium-ion battery in figure 2.*

✓ *Explain the price change using demand and supply concepts.*

- The global price of lithium-ion battery has been **decreasing** as shown in figure 2.
- Since the demand for electric vehicles has been increasing, which will increase the demand for lithium-ion battery and hence its price, **the fall in global price of lithium-ion battery can be attributed to a larger increase in supply**. (increase in SS > increase in DD).
- The increase in supply could be caused by lowering cost of production due to technology improvement, scale expansion or increase in number of lithium-ion battery manufacturers.

Mark scheme:

- ***1 mark for identifying that global price of lithium-ion battery is decreasing.***
- ***1 mark for explaining that the fall in price is due to an increase in supply.***
- ***1 mark for explaining a possible reason for the increase in supply.***

Alternative mark scheme:

- ***1 mark for identifying that global price of lithium-ion battery is decreasing.***
- ***2 marks for explaining that the fall in price is due to a larger increase in supply than increase in demand.***

(Max 2 marks for answer that only explains the fall in price is due to an increase in supply, without giving an explanation for this increase)

(d)	**Consider whether an expansion in the supply of cobalt by the mining companies will increase their total revenue.**	**[5]**

Skills:

✓ *Explaining the impact on an increase in supply on total revenue*

✓ *Explaining how the impact on total revenue is dependent on the price elasticity of demand and the strength of demand as well.*

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- An expansion in the supply of cobalt by the mining companies will shift the supply curve to the right, resulting in a surplus and downward pressure on price, assuming demand is constant ❼ **equilibrium price will fall and equilibrium quantity will increase.**
- The impact on total revenue is **dependent on the magnitude of change in price and quantity** since total revenue is given by price multiplied with quantity. This can be determined using the concept of **price elasticity of demand**.
- The **demand for cobalt is price inelastic** as there is a lack of strong substitute (extract 1) ❼ the decrease in price will lead to a less than proportionate increase in quantity demanded ❼ **total revenue will fall.**
- However, the **demand for cobalt is expected to increase** as demand for electric vehicle increases (extract 1) due to changing taste and preference. An increase in demand will push equilibrium quantity and price to rise, leading to an **increase in total revenue**.
- Therefore, whether the expansion in the supply of cobalt will increase the total revenue of mining companies depends on the extent of the increase in demand for cobalt in the future and the price elasticity of demand for cobalt as demand may become price elastic if a stronger substitute could be found.

<u>Mark scheme</u>:

- ***1 mark for explaining the impact of increase in supply on equilibrium price and quantity of cobalt.***
- ***2 marks for explaining how total revenue may decrease using the concept of price elasticity of demand.***
- ***2 marks for explaining how total revenue may increase due to an expected increase in demand for cobalt or change in price elasticity of demand of cobalt in the future.***

(e)	**Explain whether electric vehicle is a public good.**	**[4]**

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Skills:

✓ *Explain the characteristics of a public good and justify whether electric vehicle has those characteristics.*

- A public good will display the characteristics of **non-rivalry in consumption and non-excludability.**
- Non-excludability: Once the good is provided, it is difficult or impossible to exclude non-payers from consuming the good.
- **Application to electric vehicle**: However, the usage of electric vehicle is excludable ❼ A non-paying individual is easily denied the usage of the electric vehicle entry if he/she has not made the necessary payment.
- Non-rivalrous in consumption: The consumption of the good for an additional user will not diminish the quantity or satisfaction of existing users consuming the good.
- **Application to electric vehicle**: However, the consumption of electric vehicle is rivalrous ❼ there is a maximum seating capacity in an electric vehicle.
- Thus, electric vehicle **does not display BOTH characteristics of a public good** and hence it is a private good.

<u>Mark scheme</u>:

- ***2 marks for explaining the characteristics of a public good (non-rivalrous and non-excludability in consumption).***
- ***2 marks for applying the concepts of non-rivalrous and non-excludability on electric vehicles***

(f)	**Explain the market failure resulting from the usage of diesel-powered cars.**	**[6]**

Skills:

✓ *Explain what is meant by market failure*
✓ *Explain how the use of diesel-powered cars generates negative externality, leading to deadweight loss in the society.*

Identifying the sources of market failure in the market for diesel-powered cars

- The usage of diesel-powered cars **generates negative externalities** as it emits harmful pollutant such as nitrogen oxide and thus **pollutes the air** (extract 2).
- As other vehicles, the use of diesel-powered cars generates negative externalities arising from **road congestion.**
- As negative externalities cause the **underpricing** in the production and consumption of goods, price mechanism will allocate too much resources in the market for diesel-powered cars when there is no government intervention.

Explaining why the presence of negative externalities leads to market failure and welfare loss

- Negative externalities arise when the usage of diesel-powered cars affects the well-being of a third party negatively and the affected-party does not receive any compensation for the effect.
- When driving diesel-powered cars, consumers only consider their Marginal Private Benefits (MPB) and Marginal Private Cost (MPC). The private benefit is the satisfaction derived from the convenience of driving the car while the private costs comprise the price of the car and the fuel cost.

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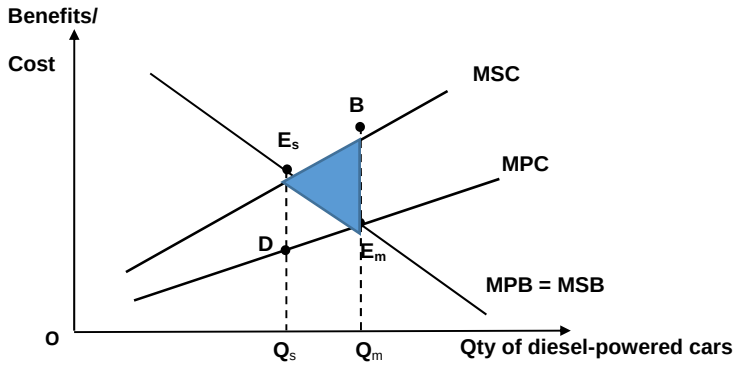
- To maximize their own satisfaction, they will choose to own or use cars to the point of Q_m where their MPC = MPB.
- However, these consumers do not take into account the Marginal External Cost (MEC) imposed on third parties.
- In extract 2, **these external costs are the air pollution and road congestion** which harm the well-being of the population. Road congestion causes longer journey times for other drivers on the road and result in a **less efficient transportation system**, hence lowering overall productivity in the economy
- Since MEC is positive, this implies that there is a divergence between MSC and MPC; and MSC > MPC as MSC = MPC + MEC. This is illustrated below.



- To society, the social optimum is at Qs where MSB = MSC, as this maximizes society welfare.
- As such, since Qs < Qm, there is an **overconsumption (excessive ownership or use) of diesel-powered cars** by QsQm.
- There is **underpricing** in the usage of diesel-powered cars and society incurs more resources than what car owners are paying, leading to **welfare loss which is the use of resources that brings about net loss to society.**
- There is a welfare loss of EsEmB and one of the forms of welfare loss is the total loss in national income due to various medical illnesses caused by air pollution and lower productivity due to congestion.
- Therefore, the price mechanism has failed to allocate resources in an efficient manner and thus government needs to intervene in this market to improve society's welfare.

Level	Descriptor	Marks
L3	• A developed explanation of market failure from the usage of diesel-powered cars using economic analysis. • Good use of examples in explanation. • Limited or no conceptual inaccuracies in explanation.	5 – 6
L2	• An underdeveloped explanation of market failure using economic analysis. • Limited or no use of examples in explanation. • Some conceptual inaccuracies in explanation.	3 – 4
L1	• For an answer that is largely inaccurate or irreverent. • Severely lacking in economic analysis.	1 – 2

(g)	**With reference to Extract 3, evaluate the policies adopted by the Chinese government to increase the production of electric vehicles in China.**	**[9]**

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Skills:

- *Identify the policies adopted by the Chinese government to increase the production of electric vehicles in China.*
- *Explain how these policies would increase equilibrium output in the market.*
- *Evaluate the policies using appropriate criteria such as effectiveness and sustainability of the of policies.*

Introduction

- The Chinese government has given out **subsidies to producers and encouraged innovation** to increase production of electric vehicles in China.
- The rationale of these policies is to reduce the use of fuel-based vehicles so as to address the problem of market failure due to negative externalities as explained in part (f).

Explaining the policy of subsidy

- A subsidy to producers is meant to lower the cost of production to producers (government absorbs part of the cost) to encourage a higher production level.
- When subsidies are given to the producers, cost of production will fall, and supply will increase. A surplus occurs and there is downward pressure on price. Thus, subsidies will lower the price of electric vehicles.
- Lower prices of electric vehicles will **reduce the demand for fuel-based ones**.

Evaluating the policy of subsidy

- The subsidy can lead to **complacency among firms**, which has led to the production of **electric vehicles of poor quality** and loss of competitiveness.
- The **effectiveness** of subsidy to increase production also **depends on the price elasticity of demand of electric vehicle.** The demand of electric vehicle could be said to be price inelastic as it may be a poor substitute to diesel-powered vehicle. Therefore, even if the price of electric vehicle falls, the increase in output may be very small in extent as drivers are not very price sensitive, making the policy of subsidy an ineffective one and resulting in wastage of resources as the intended outcome could not be achieved.
- Moreover, this policy of subsidizing the producers of electric vehicle may not be **sustainable** as it will strain the Chinese government's limited budget. To sustain the subsidy, the Chinese government may need to raise tax in the future or reallocate resources from other sectors ❼ incurring an opportunity cost which could have been better used such as infrastructure or healthcare.

Explaining the policy of encouraging innovation

- The Chinese government has also tried to encourage innovation among Chinese tech firms in its attempt to increase production of electric vehicle such as **making an internet-connected electric vehicle.** This would **improve the quality of electric vehicle** and catered more to the preference of the increasing tech-savvy Chinese population.
- Encouraging innovation in this case would result in an **increase in demand** for electric vehicle as consumers are more attracted to the higher quality electric vehicles. The increase in demand would result in a shortage of electric vehicle and put upward pressure on price. This would then act as a signal for producers to increase production of electric vehicle.

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Evaluating the policy of encouraging innovation

- The policy may be not very **effective** as the **success of innovation is not guaranteed**, leading to **uncertain outcomes**. Innovation may fail, and this will result in wastage of resources as a result as well.
- Moreover, **innovation takes time** and it will only increase production of electric vehicle in the **long run**. Hence it will not be able to increase production of electric vehicle immediately.
- In addition, innovation will incur **huge expenses for the firms** as research and development (R&D) is expensive as well. Some firms may not have the necessary resources to innovate and hence it may not be **feasible** for all firms to conduct innovation.

Conclusion

- In view of the possible constraint faced by firms and to speed up the innovation process, the **Chinese government may also need to provide R&D grants for the firms**.
- The policy of **encouraging innovation is also a more effective long-term policy** while the **policy of subsidy to producers is more effective as a short-term policy** as shown by the huge number of low quality electric vehicles on the streets in China.

vel	Descriptors	rks
2	● A developed and balanced analysis of two policies implemented by the Chinese government to increase production of electric vehicles. ● max of 4 marks for two policies but not well-developed. ● Good use of examples from the extracts ● Limited or no conceptual inaccuracies in explanation	-6
1	● A developed but one-sided analysis of a policy implemented by the Chinese government to increase production of electric vehicles. Or ● A balanced but underdeveloped analysis of a policy implemented by the Chinese government to increase production of electric vehicles. ● Some or no use of examples from the extracts. ● Some conceptual inaccuracies in explanation.	-3
	Evaluation	
2	evaluative comments with clear criteria e.g. effectiveness or sustainability of the policies.	-3
1	ot at evaluating but without elaboration or explanation	1

(h)	**Discuss whether increasing production of electric vehicles, together with driverless and ride-hailing transportation, will mean that governments do not need to intervene in the public transport market of buses and trains.**	**[12]**

Skills:

- *Explain the rationale of government intervention in the public transport market of buses and trains* ***to improve resources allocation in the land transport market****.*
- *Explain why government may not need to intervene in the public transport market of buses and trains due to increasing production of electric vehicles, together with driverless and ride-hailing*

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transportation.

- *Provide **an alternative perspective** on why government may still need to intervene in the public transport market of buses and trains.*
- *Provide an overall judgement on whether there is a need for government to intervene in the public transport market of buses and trains.*

Introduction: unpacking and identifying the need for government intervention in the public transport market of buses and trains

- **Government intervention is needed when the price mechanism is unable to allocate resources efficiently or equitably.**
- In this case, government intervene in the public transport market of buses and trains due to **negative externalities generated from usage of fuel-based vehicles (air pollution and road congestion) as well as equity concern.**
- **Public transport is a substitute to various forms of private transport.** Hence governments intervene in the public transport market of buses and trains using policies such as subsidies or regulation to reduce price of public transport as well as improving quality of the trains and buses to make it a strong substitute to private transport **(fall in demand).** This would address the problem market failure in the market for car usage where there is over-allocation of resources.
- Public transport is also used by the masses and **a necessity for transportation** purposes ❼ there is a need for government to **ensure public transport is affordable, especially for the lower income.**

Explaining the basis of the suggestion in the questions (with electric vehicles, driverless and ride-hailing transportation, governments do not need to intervene in public transport market)

- **The development of autonomous ride-hailing using electric vehicles can correct market failure through market forces ❼ less pollution and fall in car ownership**
- The increase in production of electric vehicles means **less harmful pollutants are being released,** as car owners switch from diesel-powered cars to the more environmentally friendly electric vehicle. This would **reduce the negative externalities from air pollution.**
- Moreover, ride-hailing will be much cheaper with the use of autonomous electric vehicles as the bulk of the cost of ride-hailing is accounted to the driver (Extract 4). **Car ownership may thus fall as consumers switch from car ownership to ride hailing.**

<u>Evaluation</u>: While the options of electric vehicles and ride hailing reduce air pollution, **there will still be the market failure due to traffic congestion** if too many cars on the road, including driverless ones.

- The increasing use of ride-hailing in autonomous electric vehicle **will worsen road congestion instead as consumer switch from using public transport to ride-hailing** when ride-hailing becomes cheaper and is more comfortable.
- Ride-hailing companies such as Uber may increase their capacity by adding more cars on the road in anticipation of increasing use of ride-hailing.
- Therefore, **government intervention in public transport is still needed to reduce the number of vehicles on the road to manage road congestion.**

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Evaluation: Government intervention in public transport is still needed to ensure the **affordability** of mass land transportation.

- While the increase in usage of autonomous electric vehicle may lead to a more efficient allocation of resources, **government intervention may still be needed due to equity concern.**
- Although the cost of ride-hailing may be reduced due to the autonomous electric vehicle, it may be still too expensive, especially for the lower income. Without government intervention in the public transport market, **the lower income may not have affordable mode of transport**, affecting their cost of living and quality of life.
- For example, the **Public Transport Council (PTC) regulate public transport fares in Singapore** by ensuring that the price charge reflects market dynamics (such as changes in operating cost and ridership) but remains affordable. Students and senior citizens are also given concessionary fare at lower prices.
- In addition, the **prohibitive investment and operation costs may also act as a constraint for private firms to operate public transport of buses and train**, especially that of trains since train railways are also needed. Therefore, government needs to provide for these buses and trains if private firms are unable to do so since government has greater ability to do so as it can raise tax to fund for the public transport.

Evaluation: However, the funding of public transport will put a **huge strain on government budget**, hence incurring a huge **opportunity cost** where the government budget could be spent on other more productive areas. Raising tax to fund for the public transport has also trade-offs that consumers have lesser disposable income and hence purchasing power, resulting in lower material standard of living in the short term if income tax was raised. Therefore, intervention does not necessarily mean providing free public transport. A reasonable extent of fares on consumers will be needed to ensure sustainability of the public transport model. **It is also important that the public transport is of sound quality in comprehensiveness and reliability to make it a viable alternative to private transport.**

Conclusion: Coming to a well-reasoned judgement on the need for government intervention in the public transport market of buses and trains with increasing production of electric vehicles, together with driverless and ride-hailing transportation.

- There is still a need for government intervention in the public transport market of buses and trains even if autonomous electric vehicle and ride hailing become more affordable because traffic congestion and equity concerns will remain.
- It is also critical for the government to manage vehicle population growth and ensuring true pricing in vehicle usage because if these are not carefully calibrated, market failure in land transport will not be addressed.

Level	Descriptors	Marks

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L3	● For a well-developed and balanced answer that **considers both efficiency (air pollution and congestion) and equity issues** ● Low level 3 (7m) awarded for a well-developed and balanced answer that fails to recognize that congestion and equity are also key reasons for government intervention in public transport, not just air pollution ● Discussion considers the trends mentioned in question	7-9
L2	● Undeveloped answer that considers only air pollution and congestion in discussion OR ● Undeveloped answer that considers only air pollution and equity in discussion Or ● Answer is confined to discussion of government intervention in public transport, with little contextualization to trends mentioned in question	4-6
L1	● For an answer that is largely irrelevant or inaccurate ● For an answer that lacks economic reasoning	1-3
Evaluation		
E2	Valid evaluative comments with clear explanation, providing an overall judgement on whether government intervention in the public transport market is needed with increasing production of electric vehicles, together with driverless and ride-hailing transportation.	2-3
E1	Attempt at evaluating but without elaboration or explanation	1

[Total: 45]

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Question 2: UK's Growth and Economic Dynamism

Table 1: Economic indicators of the UK economy (Annual % change)

	2015	2016
Real GDP growth rate	2.3	1.8
Inflation rate	0.4	1.0
Unemployment rate	5.4	4.9

Table 2: Changes in UK's GDP composition by industry (%)

	Manufacturing Industries	Services-producing Industries[1]	Other Industries
2006	22.1	77.3	0.6
2016	19.2	80.2	0.6

[1]*Wholesale & Retail Trade, Transportation & Storage, Accommodation & Food Services, Business, Finance & Insurance, Information & Communications and other Services*

Sources: *Various*

Extract 5: Better than expected performance for the UK economy since the Brexit vote

Following UK's vote to leave the European Union (EU) in June 2016, most economists believed that a recession was imminent. But there has been no recession. What went right?

Firstly, economists' worries that heightened uncertainty would prompt households to rein in their spending and businesses to put investment plans on hold were unfounded. Meanwhile, Britain remains an attractive place for foreign investors, in part because of its trusted legal system and low rate of corporation tax. The global economy has also helped. The Brexit vote coincided with the beginning of the first worldwide economic upswing in years.

The question is whether this unexpectedly good performance can continue. As UK's departure from the EU nears, businesses may start to get more jittery. If investment spending is cut, then consumers will eventually start to feel the pinch. And Brexit itself, which is likely to leave Britain with severely reduced access to its largest export market, will have profoundly negative long-term economic consequences.

Source: *The Economist,* 15 January 2018

Extract 6: Issues facing UK beyond Brexit

Britain has deep structural problems. The economy has been too dependent on debt-driven consumer spending and suffered from decades of underinvestment in public infrastructure. The availability of cheap workers has also meant companies have less incentive to splash out on expensive but efficiency-enhancing machines.

But one point is worth making. Today, the makeup of growth is changing all thanks to the pound's fall in the foreign exchange market which is helping to rebalance the economy away from an excessive reliance on consumer spending, even though the boost to exports and national income would be bigger had it not been for the insignificant growth in industrial capacity over the past four decades.

Source: *The Guardian,* 15 March 2018

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Extract 7: The changing structure of the UK economy

Since 2011, the UK's manufacturing sector has suffered a fresh era of decline as it relies on an expansion of low value-added assembly line roles in industries. This is far from their dream of being the source of new high value-added jobs in research and development. Output has barely risen in the past five years despite a 5% increase in the number of jobs created, revealing that the driving force of year-on-year productivity improvements have eluded the sector.

This is in contrast with the UK's services industries where employment and output is growing faster, especially in face-to-face services such as personal care. These service jobs are more difficult to automate than manufacturing or information services, which gives more room for these industries to come up with innovation to create personalised and niched services. But this may not always be possible, due to limited financial resources by the smaller companies.

All these reflected the changing structure of the UK economy, where the manufacturing share of its gross domestic product (GDP) has been on a downtrend, while the services sector has grown at a higher rate. With productivity growth in the services sector rising at a more moderate pace than in manufacturing, overall labour productivity growth has likewise been affected. As the size of services-producing sector increases, the ability of the UK economy to boost and sustain productivity growth rates is going to be very important.

Source: *The Guardian*, 21 October 2016

Extract 8: UK can still achieve economic dynamism

When a country is dynamic, it is more resilient to shocks, can grow more rapidly without generating inflationary pressure or creating risks to financial stability and can also be associated with more effective competition.

UK has a falling total fertility rate and an ageing population. However, many economists suggest that demographics is not destiny. While vibrant cities do attract people and add to the labour force, the main source of growth and dynamism is not headcount but productivity growth. This goes to show that the UK can still achieve economic dynamism in the face of demographic changes but how exactly can this be achieved?

Often, governments tend to champion specific sectors such as manufacturing or industries such as green technology. True dynamism flows from continuous innovation, experimentation, adaptation, and change, all of which raise productivity over time. These productivity gains, in turn, lift incomes and drive greater consumption. This fuels more innovation and a dynamic economy thus expands in a healthy, sustainable way.

According to the Grant Thornton's Global Dynamism Index released in 2015, the UK ranks 27 out of 60 economies for its overall growth potential contributed by a combination of factors, including political and economic stability, low level of legal and regulatory risk, intellectual property filing rates and innovative businesses drawing from a global talent pool. For the UK to maintain and improve its competitiveness, it should do more to encourage investments in infrastructure, technology, productivity and other dynamic indicators which ultimately power the economy and instil confidence in its long-term growth prospects.

Sources: *Various*

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Questions:

(a) What conclusion would you draw from Table 1 about the overall economic performance of the UK economy in 2016 compared to 2015? **[4]**

(b) Using an AD/AS diagram, explain two reasons why the UK economy was expected to slip into recession after deciding to leave the European Union. **[5]**

(c) With reference to Extract 6,

(i) Explain how the fall in the value of pound might affect general price level in the UK. **[3]**

(ii) Explain what it means by "the boost to exports and national income would be bigger had it not been for the insignificant growth in industrial capacity over the past four decades". **[2]**

(d) Using Extract 7, discuss whether all countries should follow the UK economy by expanding their services industries to achieve higher economic growth. **[9]**

(e) In light of the case materials provided, discuss the policies that the UK government could adopt to maintain a low rate of unemployment. **[10]**

(f) Extract 8 suggests that the UK can still achieve economic dynamism despite her demographic changes.

Discuss the view that ageing population is not an obstacle to the UK economy in achieving economic dynamism. **[12]**

[Total: 45]

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H1 Economics Prelim Examinations Suggested Answer
Question 2: UK's Growth and Economic Dynamism

**Note to students: Quotes from the extracts have been reproduced in the suggested answer key for learning purposes. You are only required to ACKNOWLEDGE the extract used i.e. "From Extract 5, it suggests that…". You MUST NOT reproduce the quotes.*

(a) What conclusion would you draw from Table 1 about the overall economic performance of the UK economy in 2016 compared to 2015? [4]

- Real GDP growth rate has fallen but still positive → real NY has increased but at a slower rate.
- Inflation rate is positive and has slightly risen → GPL is increasing at a faster rate.
- Unemployment rate has fallen → more people were able to find a job compared to 2015.
- Overall, UK's macroeconomic performance is positive but considered generally weak, as indicated by the low economic growth and inflation rates.

✓ *3m for interpreting changes in UK's economic indicators*
✓ *1m for overall judgement of UK's macroeconomic performance*

(b) Using an AD/AS diagram, explain two reasons why the UK economy was expected to slip into recession after deciding to leave the European Union. [5]

- Poor economic sentiments → falling C and I → falling AD → fall in real NY *(Extract 5: "Firstly, economists' worries that heightened uncertainty would prompt households to rein in their spending and businesses to put investment plans on hold").*
- Loss in EU as a key export market → falling X → falling AD → fall in real NY *(Extract 5: "And Brexit itself, which is likely to leave Britain with severely reduced access to its largest export market").*

✓ *1m for diagram showing leftward shift in AD causing a fall in real NY*
✓ *2m for each reason to explain falling real NY using Extract 5 and economic analysis (falling AD)*

(c) With reference to Extract 6,
(i) Explain how the fall in the value of pound might affect general price level in the UK. [3]

- A weaker pound would increase UK's import prices in its own currency as a unit of the currency can now buy fewer foreign goods → increases domestic costs of living and production → reduces SRAS → increases domestic GPL.
- A weaker pound would also decrease UK's export prices in foreign currencies → increases X (assuming PED>1) → increases AD → increases domestic GPL.

✓ *1m to explain the effect of weaker pound on import or export prices*
✓ *2m to explain the effect on GPL using economic analysis (either through SRAS or AD)*

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(c) (ii) Explain what it means by "the boost to exports and national income would be bigger had it not been for the insignificant growth in industrial capacity over the past four decades". [2]

- UK economy is producing near maximum productive capacity
- This implies that there are insufficient resources available to produce goods and services → despite the increase in exports, there will be limited growth in real NY once maximum productive capacity is reached.

✓ *1m in identifying UK producing near maximum productive capacity*
✓ *1m to explain how the lack of spare productive capacity limits the growth in X and real NY*

(d) Using Extract 7, discuss whether all countries should follow the UK economy by expanding their services industries to achieve higher economic growth. [9]

Question approach:

- Show understanding that higher economic growth refers to real national income increasing at a faster rate.
- Explain how expansion of services industries has risen in demand and are perceived to generate greater value-added compared to manufacturing industries, hence allowing for higher economic growth rates.
- Consider the appropriateness of countries adopting this strategy. Notice that the question is phrased as "all countries" which allows for scope in discussion e.g. Should developing countries follow UK in doing so? What are some of the challenges faced by countries when using the expansion of services industries to boost economic growth?

Introduction:

- Higher economic growth suggests that real national income is increasing at a faster rate.
- As shown in *Table 2* and *Extract 7*, the UK economy has expanded its services industries over time *(Extract 7: "the manufacturing share of its gross domestic product (GDP) has been on a downtrend, while the services sector has grown at a higher rate").*
- Although services industries are growing in demand and generate more value to a country's national output, the type of services provided must be examined. If countries were to allocate resources away from manufacturing to services industries, the returns from doing so may be insignificant if low-value services are produced.

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1. **Why countries should follow the UK economy in expanding their services industries to achieve higher economic growth:**

- For UK's services industries, growth in output is most evident in face-to-face industries *(Extract 7: "employment and output are growing faster, especially in face-to-face industries such as personal care")*. **The expansion of services industries in response to the higher demand for services will thus help to generate more employment and output hence helping to raise UK's economic growth rates** as shown by the increase in services share of gross domestic product (GDP) in UK.
- There could also be more room for firms to create unique services with PED < 1, hence allowing firms to charge a higher price premium, increasing total revenue earned. **By providing personalised services such as those in the insurance and banking sectors, UK may be able to generate higher value-added to national output, hence achieving higher economic growth rate.**
- **<u>Evaluation</u>: However, just like manufactured goods, there is a wide range of services that can be produced. Low value-added services do not add as much value to a country's national output and employment compared to high-end manufactured goods such as computer chips.**

2. **In some countries, resources may be more efficiently used in producing manufactured goods compared to services.**

- **To achieve higher economic growth, efficient use of resources in a country is needed to generate maximum output and employment.**
- For developing countries with abundant cheap low-skilled labour, they should expand manufacturing industries instead of services industries to attract Foreign Direct Investment (FDI) looking to expand their manufacturing bases overseas.
- For the UK economy, the pursuit of services expansion is partly driven by the addition of mostly low value-added jobs in manufacturing industries *(Extract 7: "the UK's manufacturing sector has suffered a fresh era of decline as it relies on an expansion of low value-added assembly line roles in industries").* Hence, the expansion of services is adopted to create more high value-added jobs to drive productivity growth needed to support higher growth rate in UK which is producing very near to its maximum productive capacity *(Extract 6).*

Synthesis: Overall well-reasoned judgement on whether all countries should follow the UK economy in expanding services industries to achieve higher economic growth.

- The decision to expand services industries is largely dependent on the country's factor endowment. While there may be a rise in the demand for services, the demand for manufactured goods is still high and increasing with income levels.
- It is important that countries use their resources efficiently to generate maximum output and employment regardless of their decision to expand services or manufacturing sectors.
- Ultimately, as economies develop, they will naturally transit from a manufacturing-driven to a services-based growth path. Countries should not rush in expanding services industries simply because of its higher value-added and growth in demand.

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Question (d) mark scheme:

Level	Level Descriptors	Marks
L3	• Conceptually accurate and well-developed analysis in explaining these key ideas: o Services industries are able to generate more output and employment hence driving higher economic growth. o The decision to expand services industries is dependent on the country's factor endowment. Resource should be used efficiently regardless of the country's decision to expand services or manufacturing industries.	5-6
L2	• Conceptually correct but answer is largely one-sided or balanced but undeveloped. • May contain minor conceptual errors.	3-4
L1	• Descriptive i.e. lacks economic analysis. • Contains major conceptual errors.	1-2
E2	• Answer recognizes and justifies why both demand-management and supply-side policies are needed in UK. • *E.g. Answer argues that a country's resources must always be used efficiently to generate maximum output and employment. For developing countries, abundant cheap low-skilled labour is able to attract FDI that are looking to set up manufacturing bases overseas.*	2-3
E1	• Superficial / simplistic evaluation statements without justification. • *E.g. Answer states that some countries may not have the resources suitable to support expansion of services industries such as skilled labour.*	1

(e) In light of the case materials provided, discuss the policies that the UK government could adopt to maintain a low rate of unemployment. [10]

Question approach:

- Show clear understanding that unemployment is an economic problem caused by changes in both the demand and supply sides of the economy and that to deal with this problem will require policy measures addressing both these sides.
- Case materials provided suggest that UK is facing both demand-deficient and structural unemployment caused by the decision to leave EU and ongoing expansion of services industries respectively.
- Discuss policies in terms of effectiveness and/or appropriateness.

Introduction: The UK government should use both demand and supply-side policies to maintain a low rate of unemployment in the country.

- Low unemployment suggests a level that is very close to the natural rate of unemployment. Typically, statistics on job vacancies indicate that the number of jobs available matches the number of unemployed.
- UK faces both demand-deficient and structural unemployment.
- Demand-management policies are largely aimed at enhancing jobs creation while supply-side policies help in sharpening UK's competitiveness and improving workers' employability as well as mobility.

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1. **In view of the possible fall in AD caused by UK's decision to leave EU, the UK government should adopt expansionary fiscal policy to counter the possible rise in demand-deficient unemployment.**

- As mentioned in (b), UK's decision to leave the EU can cause AD to fall relative to LRAS due to falling C, I or X. With firms experiencing a fall in profits, they may respond by laying off workers to cut costs, hence triggering demand-deficient unemployment.
- **While Extract 5 suggests that UK's economy has managed to avoid slipping into a recession, the risk of falling AD is still present and very much dependent on economic sentiments as well as the country's ability to export to other markets that can help counter the decline in exports to EU which has all along been UK's largest export market.**
- Expansionary fiscal policy can therefore be used as a counter-cyclical approach. To increase AD, the UK government can adopt a budget deficit where government spending is raised and/or taxes are reduced so that government spending is more than tax revenue collected. For example, public sector hiring can be expanded and public infrastructure projects brought forward to create more jobs. As a result, the increase in demand for workers will rise hence reducing the risk of demand-deficient unemployment.
- **<u>Evaluation</u>: However, if domestic economic sentiment is poor, AD may not increase significantly, hence causing expansionary fiscal policy to be less effective. More importantly, expansionary fiscal policy does not help to reduce the possible skills mismatch caused by economic restructuring despite being effective in creating jobs.**

**<u>Note to students</u>: As the pound is already weakening (Extract 6), there is a lesser need for the UK government to adopt currency depreciation as its demand-management policy.*

2. **Indeed, while jobs may be created, workers may not have the skills to take up these jobs. Therefore, supply-side policies are needed to support workers' transition from manufacturing to services-based industries as well as to develop new growth industries to compensate for declining industries, hence reducing both structural and demand-deficient unemployment.**

- UK is expanding its services industries *(Extract 7: "the manufacturing share of its gross domestic product (GDP) has been on a downward trend, while the services sector has grown at a higher rate" and "this is in contrast with the UK's services industries where employment and output is growing faster")*.
- Therefore, there can be a mismatch between skills and job requirements in the labour market when workers laid off from manufacturing industries try to seek employment in services industries, hence triggering structural unemployment.
- **To reduce and prevent further worsening of structural unemployment, the UK government should provide skills training to improve workers' employability and mobility across industries.** This would help to create a labour culture anchored on life-long learning and continuous skills upgrading.
- **In addition, the UK government can adopt pro-competition supply-side policies or provide subsidies that encourage firms to adopt more technology and innovation, so as to produce high technology value-added goods and services** *(Extract 7: "These service jobs are more difficult to automate than manufacturing or information*

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services, which gives more room for these industries to come up with innovation to create personalized and niched services. But this may not always be possible, due to limited financial resources by the smaller companies"). This would help to create new export demand, attract FDI hence preventing a possible rise in demand-deficient unemployment.

- **<u>Evaluation</u>: However, supply-side policies require time to be effective. If demand-deficient unemployment is rising rapidly due to UK's decision to leave EU, the UK government should use expansionary fiscal policy as it requires a shorter time to raise AD needed for jobs creation.**

Synthesis: Overall well-reasoned judgement on the policies that the UK government should adopt to maintain a low rate of unemployment.

- In view of UK's decision to leave EU and with expansion of services industries going on at the same time, both expansionary fiscal policy and supply-side policies are needed to enhance jobs creation rate and improve workers' employability as well as mobility across industries.
- Although supply-side policies will only be effective in the long run, they should be implemented as an ongoing approach in UK which has been experiencing slowing productivity growth *(Extract 7: "With productivity growth in the services sector rising at a more moderate pace than in manufacturing, overall labour productivity growth has likewise been affected").*

Question (e)'s mark scheme:

Level	Level Descriptors	Marks
L3	• Conceptually accurate and well-developed analysis in explaining why and how both demand-management and supply-side policies are needed in view of UK's decision to leave EU and with economic restructuring going on at the same time. • Good use of relevant case information to support analysis.	6-7
L2	• Conceptually correct but answer is largely focused on either demand-management or supply-side policies. • May contain minor conceptual errors. • Some use of case information to support analysis.	3-5
L1	• Descriptive i.e. lacks economic analysis. • Contains major conceptual errors.	1-2
E2	• Answer recognizes and justifies why both demand-management and supply-side policies are needed in UK. • *E.g. Answer argues that while jobs may be created, the risk of structural unemployment suggests that workers may not have the skills to take up these jobs hence suggesting the need for supply-side policies to be implemented alongside demand-management policies.*	2-3
E1	• Superficial / simplistic evaluation statements without justification. • *E.g. Answer states that UK government should adopt demand-management policies in the short run and supply-management policies in the long run.*	1

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(f) Extract 8 suggests that the UK can still achieve economic dynamism despite her demographic changes.

Discuss the view that ageing population is not an obstacle to the UK economy in achieving economic dynamism. [12]

Question approach:

- Using case information provided, explain what it means by economic dynamism.
- Identify and explain the challenges that an ageing population poses to UK's productivity growth and connect this to the country's ability in achieving economic dynamism.
- Recognise and explain that while UK can still achieve economic dynamism if the government puts in place appropriate measures to raise productivity growth rate.

Introduction:

- According to *Extract 8*, economic dynamism refers to industries being engaged in a continuous cycle of innovation, experimentation, adaption and change, which then helps to bring about productivity improvements in the country over time. This would in turn make the economy more resilient to economic shocks, increase competitiveness and also allow it to grow without causing inflation.
- **To achieve economic dynamism, governments are often actively involved in encouraging investments in infrastructure, technology, productivity and areas such as intellectual property filing rates.**
- An ageing population in the UK does present several challenges in the form of reducing the country's attractiveness to FDI due to perceived (or actual) slower productivity growth as well as slower growth in innovation and R&D. These challenges further reduce UK's productivity which is already experiencing slow growth *(Extract 7: "With productivity growth in the services sector rising at a more moderate pace than in manufacturing, overall labour productivity growth has likewise been affected").*
- However, UK can still achieve economic dynamism despite facing an ageing population if appropriate policies are implemented to boost productivity growth.

1. An ageing population is indeed an obstacle to the UK economy's ability in achieving higher and sustained productivity growth required for economic dynamism.

- Investor confidence in UK may fall as foreign companies find it less attractive to invest in due to the perceived lower productivity growth rate or due to the perceived less-relevant skills level of the elderly. Given that UK has just made its decision to leave EU *(Extract 5),* the uncertain economic sentiments coupled with an ageing population may cause Foreign Direct Investment (FDI) to slow down hence causing a slow down or slower growth in infrastructure and innovation spending.
- In addition, the need for the government to finance the higher social spending associated with an ageing population may lead to an increase in taxes such as the corporate income tax. A higher corporate income tax further reduces UK's competitiveness to FDI and firms' after-tax ability to spend on R&D and innovation initiatives.
- Moreover, although the elderly may be educated with tertiary education in UK, this does not guarantee that they will be productive, especially with technological advancement increasingly making skills obsolete.

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- With countries being assessed in areas such as intellectual property filing rates, investments in technology and productivity according to the Grant Thornton's Global Dynamism Index *(Extract 8),* an ageing population can indeed be argued to reduce spending in these areas, hence lowering UK's ability in achieving economic dynamism.
- **<u>Evaluation</u>: Ageing population does not necessarily mean a fall in productivity growth rate or FDI competitiveness. Whether the elderly remain productive is largely dependent on the role played by the UK government in encouraging life-long learning/skills upgrading. Similarly, whether UK remains attractive to FDI is largely dependent on the presence of conducive supply-side conditions critical for driving sustained productivity growth through innovation and R&D.**

2. UK can still achieve economic dynamism despite its ageing population if appropriate policies are implemented to mitigate the challenges.

- The UK government can implement both market-oriented as well as interventionist supply-side policies to drive innovation and R&D. For example, the elderly can be sent for reskilling or skills upgrading so as to improve their productivity.
- In addition, the barriers to entry for certain industries can be lowered so as to increase competition among firms, hence raising the incentive for firms to innovate in order to retain market share.
- Alternatively, the UK government can increase the inflow of foreign talents into the country, thus helping to speed up the slow productivity growth.
- **<u>Evaluation</u>: Nevertheless, supply-side policies require time to take effect. Hence, it is likely that improvements to productivity growth will only be achieved in the long run.**

Synthesis: Overall well-reasoned judgement on whether the UK economy can achieve economic dynamism despite facing an ageing population.

- An ageing population does pose several challenges to UK's ability to achieve economic dynamism through the effects on productivity growth. However, with ongoing policies implemented to mitigate these challenges, UK can still achieve economic dynamism in the long run.
- **It is important that ageing population is viewed not just in terms of the challenges it brings but also the opportunities it presents.** For example, to meet the needs of the elderly, firms may become more motivated to carry out innovation and R&D work when venturing into new product markets. Examples of such markets would include healthcare services and personal transport devices such as e-scooters. Such demand-driven innovation will enhance the country's ability to achieve economic dynamism.

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Question (f)'s mark scheme:

Level	Descriptors	Marks
L3	• Balanced and conceptually accurate analysis in explaining these key ideas: o An ageing population presents several challenges that will reduce UK's productivity growth rate. o However, the UK government can still achieve economic dynamism if there are appropriate policies implemented to mitigate these challenges. • Good use of relevant case information to support analysis.	7-9
L2	• Conceptually correct but answer is largely one-sided or balanced but undeveloped. • Some use of case information to support analysis.	4-6
L1	• Descriptive i.e. lacks economic analysis. • Contains major conceptual errors.	1-3
E2	• Answer is able to generate a considered overall judgement on whether an ageing population will hinder the UK economy in achieving economic dynamism. • *E.g. Answer argues that while an ageing population can hinder UK's ability in achieving economic dynamism in the short run, appropriate government policies can be adopted to mitigate the potential fall in productivity growth rate.*	2-3
E1	• Superficial / simplistic evaluation statements without justification. • *E.g. Answer states that an ageing population will indeed hinder UK's ability in achieving economic dynamism, especially in the short run.*	1

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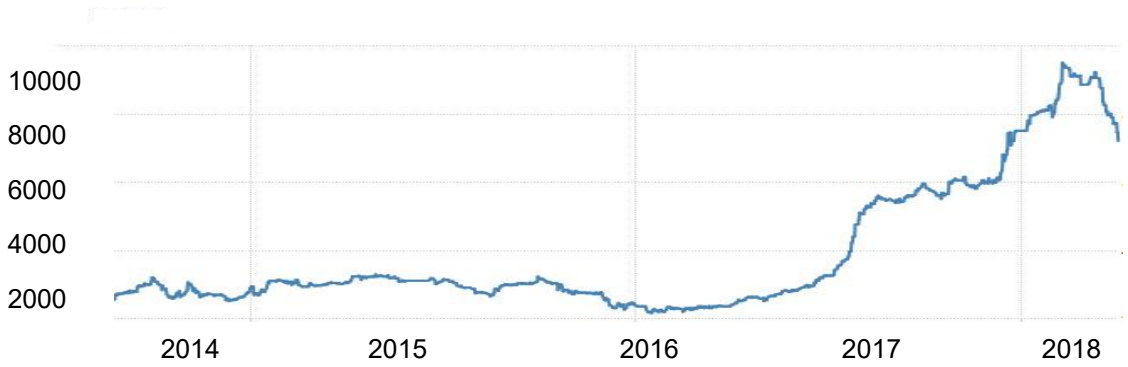
Answer **all** questions.

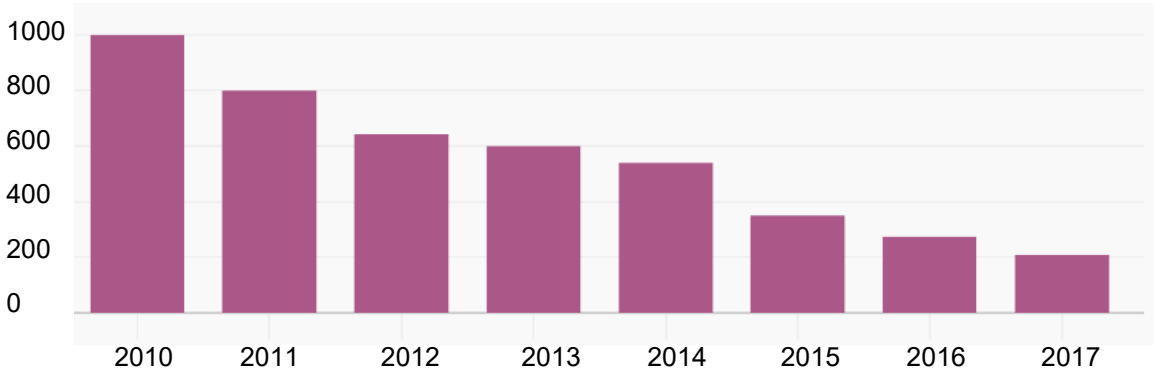
Question 1: The Rise of Electric Vehicles

Figure 1: Global price of cobalt (US$ per million tonnes)



Source: *Trading Economics*, accessed 5 July 2018

Figure 2: Global price of lithium-ion battery (US$/kilowatt-hour)



Source: *Bloomberg New Energy Finance*, accessed 5 July 2018

Extract 1: Technology is fuelling the use of cobalt

Cobalt is a hard, shiny and greyish metal which has many strategic and irreplaceable industrial uses as a result of its unique properties. Currently used in numerous industrial chemical processes, close to half of the world's cobalt supplied today is used in lithium-ion batteries, putting it at the heart of the drive for alternative and renewable energy systems. There has not been a good substitute to make lithium-ion batteries without the mineral. However, more than half of the world's reserves and production of the metal are in one country, the Democratic Republic of Congo. This has led to a fear of shortage.

Mining companies are planning new cobalt operations that may balance supply and demand in the near term, but if electric vehicles continue to gain market share, any stabilisation may be short-lived. Each new electric vehicle, which runs on lithium-ion battery, uses about 10 kg of

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cobalt. The use of cobalt is expected to accelerate further as electric vehicles will be close to reaching cost parity with internal combustion engine vehicles.

Sources*: www.dartoncommodities.co.uk/* (accessed on 21 July 2018); *CNBC*, 16 April 2018

Extract 2: Diesel-powered cars are on their way out

Diesel-powered cars appeal to European drivers for their fuel efficiency and power. Carmakers like them because they emit less carbon dioxide than similar petrol engines do, making it easier to comply with stiff regulations. However, in recent years, governments have shifted gear. The advent of electric cars has knocked diesel off its perch as the fuel with the smallest carbon footprint. Diesel also releases greater quantities of nasty gases other than carbon, such as nitrogen oxides, than petrol does. Many cities in Europe, and farther afield, want to eliminate diesel cars from their roads as early as 2025. Governments hope that the void left by diesel will be filled by zero-emission battery-powered models. But mass adoption of such vehicles, which for now are expensive and have limited ranges in travel distance, still appears a way off.

Source: *The Economist*, 13 February 2018

Extract 3: Charging ahead, China's dirty race for clean vehicles

After a decade of halting progress, electric cars are zooming ahead in China. Last year the number of registrations of new electric vehicles (EVs) in the country overtook that in America, making it the world's biggest and fastest growing market. The category includes electric-only cars as well as plug-in hybrids that can also run on petrol. Analysts expect the market to grow by nearly 50% a year for the rest of this decade.

The government has had a big role in the marked expansion of EVs in China. It doles out generous subsidies to local makers, to parts suppliers and to those who buy the final products. Last year alone, China shovelled over 90 billion yuan in subsidies into the industry, which it calls "strategic". This has led to queues of EVs on the streets, mostly of poor design and quality. China has yet to produce an EV manufacturer that can compete at the level of America's Tesla Motors.

The Chinese government is also encouraging other Chinese firms, including the country's tech giants, to innovate in the field. Tencent, a gaming and social media firm, is developing internet-connected EVs with Taiwan's Foxconn. Alibaba, an e-commerce firm, is providing data and cloud-computing services to Kandi Technologies, a local EV-maker that is popularising the sharing of the vehicles.

Source: *The Economist*, 28 July 2016

Extract 4: Autonomous vehicles are just around the corner

Every day around 10 million people take an Uber ride. The company has made ride-hailing commonplace in more than 600 cities in 82 countries and Uber is experimenting the use of autonomous vehicles– cars that can drive by themselves. Autonomous vehicles have made rapid progress in recent years and can now be seen on the roads in several American cities, easily identified by the clusters of sensors on their roofs.

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The combination of the use of autonomous vehicles and ride-hailing, together with a switch to electric vehicles, seems likely to undermine the logic of car ownership for many people. Ride-hailing services in the rich world currently cost around US$2.50 per mile, compared with about US$1.20 per mile to own and operate a private car. But the driver cost accounts for about 60% of the cost of ride-hailing. UBS, an investment bank, reckons that automation, competition and electrification (which makes cars more expensive to buy but much cheaper to run) will cut the cost of ride-hailing by 70%, to about US$0.70 per mile. UBS predicts that autonomous taxis will take off rapidly after 2025, with 80% of people using them in cities, where available, by 2035.

Source: *The Economist*, 1 March 2018

Questions

(a) Using examples from Extract 1, distinguish between complements in demand and derived demand. **[2]**

(b) With reference to Extract 1, and using a supply and demand diagram, account for the sharp increase in the global price of cobalt between 2016 and 2018. **[4]**

(c) Explain a factor that could be responsible for the trend in the global price of lithium-ion battery shown in Figure 2. **[3]**

(d) Consider whether an expansion in the supply of cobalt by the mining companies will increase their total revenue. **[5]**

(e) Explain whether electric vehicle is a public good. **[4]**

(f) Explain the market failure resulting from the usage of diesel-powered cars. **[6]**

(g) With reference to Extract 3, evaluate the policies adopted by the Chinese government to increase the production of electric vehicles in China. **[9]**

(h) Discuss whether increasing production of electric vehicles, together with driverless and ride-hailing transportation, will mean that governments do not need to intervene in the public transport market of buses and trains. **[12]**

[Total: 45]

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Question 2: UK's Growth and Economic Dynamism

Table 1: Economic indicators of the UK economy (Annual % change)

	2015	2016
Real GDP growth rate	2.3	1.8
Inflation rate	0.4	1.0
Unemployment rate	5.4	4.9

Table 2: Changes in UK's GDP composition by industry (%)

	Manufacturing Industries	Services-producing Industries[1]	Other Industries
2006	22.1	77.3	0.6
2016	19.2	80.2	0.6

[1]*Wholesale & Retail Trade, Transportation & Storage, Accommodation & Food Services, Business, Finance & Insurance, Information & Communications and other Services*

Sources: *Various*

Extract 5: Better than expected performance for the UK economy since the Brexit vote

Following UK's vote to leave the European Union (EU) in June 2016, most economists believed that a recession was imminent. But there has been no recession. What went right?

Firstly, economists' worries that heightened uncertainty would prompt households to rein in their spending and businesses to put investment plans on hold were unfounded. Meanwhile, Britain remains an attractive place for foreign investors, in part because of its trusted legal system and low rate of corporation tax. The global economy has also helped. The Brexit vote coincided with the beginning of the first worldwide economic upswing in years.

The question is whether this unexpectedly good performance can continue. As UK's departure from the EU nears, businesses may start to get more jittery. If investment spending is cut, then consumers will eventually start to feel the pinch. And Brexit itself, which is likely to leave Britain with severely reduced access to its largest export market, will have profoundly negative long-term economic consequences.

Source: *The Economist,* 15 January 2018

Extract 6: Issues facing UK beyond Brexit

Britain has deep structural problems. The economy has been too dependent on debt-driven consumer spending and suffered from decades of underinvestment in public infrastructure. The availability of cheap workers has also meant companies have less incentive to splash out on expensive but efficiency-enhancing machines.

But one point is worth making. Today, the makeup of growth is changing all thanks to the pound's fall in the foreign exchange market which is helping to rebalance the economy away from an excessive reliance on consumer spending, even though the boost to exports and

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national income would be bigger had it not been for the insignificant growth in industrial capacity over the past four decades.

Source: *The Guardian,* 15 March 2018

Extract 7: The changing structure of the UK economy

Since 2011, the UK's manufacturing sector has suffered a fresh era of decline as it relies on an expansion of low value-added assembly line roles in industries. This is far from their dream of being the source of new high value-added jobs in research and development. Output has barely risen in the past five years despite a 5% increase in the number of jobs created, revealing that the driving force of year-on-year productivity improvements have eluded the sector.

This is in contrast with the UK's services industries where employment and output is growing faster, especially in face-to-face services such as personal care. These service jobs are more difficult to automate than manufacturing or information services, which gives more room for these industries to come up with innovation to create personalised and niched services. But this may not always be possible, due to limited financial resources by the smaller companies.

All these reflected the changing structure of the UK economy, where the manufacturing share of its gross domestic product (GDP) has been on a downtrend, while the services sector has grown at a higher rate. With productivity growth in the services sector rising at a more moderate pace than in manufacturing, overall labour productivity growth has likewise been affected. As the size of services-producing sector increases, the ability of the UK economy to boost and sustain productivity growth rates is going to be very important.

Source: *The Guardian*, 21 October 2016

Extract 8: UK can still achieve economic dynamism

When a country is dynamic, it is more resilient to shocks, can grow more rapidly without generating inflationary pressure or creating risks to financial stability and can also be associated with more effective competition.

UK has a falling total fertility rate and an ageing population. However, many economists suggest that demographics is not destiny. While vibrant cities do attract people and add to the labour force, the main source of growth and dynamism is not headcount but productivity growth. This goes to show that the UK can still achieve economic dynamism in the face of demographic changes but how exactly can this be achieved?

Often, governments tend to champion specific sectors such as manufacturing or industries such as green technology. True dynamism flows from continuous innovation, experimentation, adaptation, and change, all of which raise productivity over time. These productivity gains, in turn, lift incomes and drive greater consumption. This fuels more innovation and a dynamic economy thus expands in a healthy, sustainable way.

According to the Grant Thornton's Global Dynamism Index released in 2015, the UK ranks 27 out of 60 economies for its overall growth potential contributed by a combination of factors, including political and economic stability, low level of legal and regulatory risk, intellectual

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property filing rates and innovative businesses drawing from a global talent pool. For the UK to maintain and improve its competitiveness, it should do more to encourage investments in infrastructure, technology, productivity and other dynamic indicators which ultimately power the economy and instil confidence in its long-term growth prospects.

Sources: *Various*

Questions:

(a) What conclusion would you draw from Table 1 about the overall economic performance of the UK economy in 2016 compared to 2015? **[4]**

(b) Using an AD/AS diagram, explain two reasons why the UK economy was expected to slip into recession after deciding to leave the European Union. **[5]**

(c) With reference to Extract 6,

(i) Explain how the fall in the value of pound might affect general price level in the UK. **[3]**

(ii) Explain what it means by "the boost to exports and national income would be bigger had it not been for the insignificant growth in industrial capacity over the past four decades". **[2]**

(d) Using Extract 7, discuss whether all countries should follow the UK economy by expanding their services industries to achieve higher economic growth. **[9]**

(e) In light of the case materials provided, discuss the policies that the UK government could adopt to maintain a low rate of unemployment. **[10]**

(f) Extract 8 suggests that the UK can still achieve economic dynamism despite her demographic changes.

Discuss the view that ageing population is not an obstacle to the UK economy in achieving economic dynamism. **[12]**

[Total: 45]

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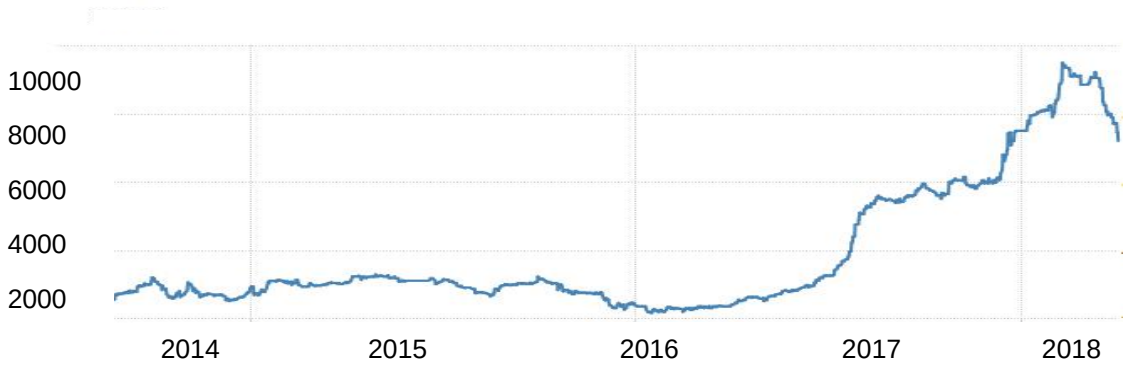
Answer **all** questions.

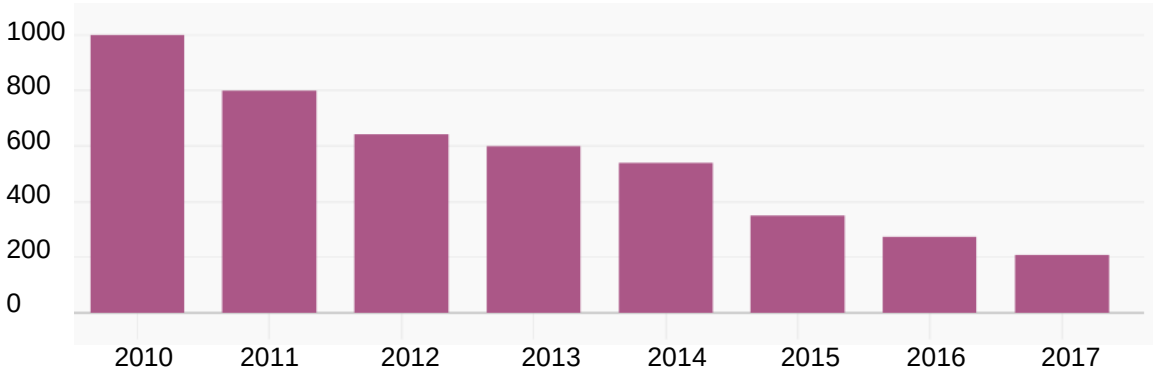
Question 1: The Rise of Electric Vehicles

Figure 1: Global price of cobalt (US$ per million tonnes)



Source: *Trading Economics*, accessed 5 July 2018

Figure 2: Global price of lithium-ion battery (US$/kilowatt-hour)



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Mining companies are planning new cobalt operations that may balance supply and demand in the near term, but if electric vehicles continue to gain market share, any stabilisation may be short-lived. Each new electric vehicle, which runs on lithium-ion battery, uses about 10 kg of

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cobalt. The use of cobalt is expected to accelerate further as electric vehicles will be close to reaching cost parity with internal combustion engine vehicles.

Sources*: www.dartoncommodities.co.uk/* (accessed on 21 July 2018); *CNBC*, 16 April 2018

Extract 2: Diesel-powered cars are on their way out

Diesel-powered cars appeal to European drivers for their fuel efficiency and power. Carmakers like them because they emit less carbon dioxide than similar petrol engines do, making it easier to comply with stiff regulations. However, in recent years, governments have shifted gear. The advent of electric cars has knocked diesel off its perch as the fuel with the smallest carbon footprint. Diesel also releases greater quantities of nasty gases other than carbon, such as nitrogen oxides, than petrol does. Many cities in Europe, and farther afield, want to eliminate diesel cars from their roads as early as 2025. Governments hope that the void left by diesel will be filled by zero-emission battery-powered models. But mass adoption of such vehicles, which for now are expensive and have limited ranges in travel distance, still appears a way off.

Source: *The Economist*, 13 February 2018

Extract 3: Charging ahead, China's dirty race for clean vehicles

After a decade of halting progress, electric cars are zooming ahead in China. Last year the number of registrations of new electric vehicles (EVs) in the country overtook that in America, making it the world's biggest and fastest growing market. The category includes electric-only cars as well as plug-in hybrids that can also run on petrol. Analysts expect the market to grow by nearly 50% a year for the rest of this decade.

The government has had a big role in the marked expansion of EVs in China. It doles out generous subsidies to local makers, to parts suppliers and to those who buy the final products. Last year alone, China shovelled over 90 billion yuan in subsidies into the industry, which it calls "strategic". This has led to queues of EVs on the streets, mostly of poor design and quality. China has yet to produce an EV manufacturer that can compete at the level of America's Tesla Motors.

The Chinese government is also encouraging other Chinese firms, including the country's tech giants, to innovate in the field. Tencent, a gaming and social media firm, is developing internet-connected EVs with Taiwan's Foxconn. Alibaba, an e-commerce firm, is providing data and cloud-computing services to Kandi Technologies, a local EV-maker that is popularising the sharing of the vehicles.

Source: *The Economist*, 28 July 2016

Extract 4: Autonomous vehicles are just around the corner

Every day around 10 million people take an Uber ride. The company has made ride-hailing commonplace in more than 600 cities in 82 countries and Uber is experimenting the use of autonomous vehicles– cars that can drive by themselves. Autonomous vehicles have made rapid progress in recent years and can now be seen on the roads in several American cities, easily identified by the clusters of sensors on their roofs.

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The combination of the use of autonomous vehicles and ride-hailing, together with a switch to electric vehicles, seems likely to undermine the logic of car ownership for many people. Ride-hailing services in the rich world currently cost around US$2.50 per mile, compared with about US$1.20 per mile to own and operate a private car. But the driver cost accounts for about 60% of the cost of ride-hailing. UBS, an investment bank, reckons that automation, competition and electrification (which makes cars more expensive to buy but much cheaper to run) will cut the cost of ride-hailing by 70%, to about US$0.70 per mile. UBS predicts that autonomous taxis will take off rapidly after 2025, with 80% of people using them in cities, where available, by 2035.

Source: *The Economist*, 1 March 2018

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Suggested Answers

(a)	**Using examples from extract 1, distinguish between complements in demand and derived demand.**	**[2]**

Skills:
- ✓ *Identify examples from Extract 1 that shows complement in demand and derived demand.*
- ✓ *Explain the difference between complement in demand and derived demand.*

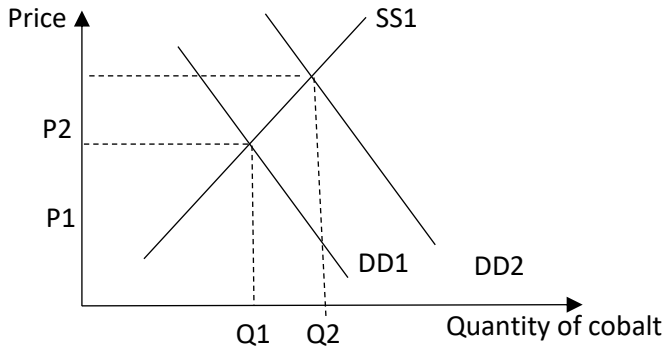
- **Lithium-ion batteries and electric vehicles are complements in demand** as lithium-ion battery is needed to run (used in conjunction/together) the electric vehicles
- On the other hand, **the demand for cobalt is derived from the demand for lithium-ion battery** as cobalt is needed to manufacture (used as an input to produce) lithium-ion battery.

Mark scheme:
- ***1 mark for explaining that lithium-ion battery and electric vehicle are complements in demand.***
- ***1 mark for explaining that demand for cobalt is derived from the demand of lithium-ion battery.***

(b)	**With reference to Extract 1, and using a supply and demand diagram, account for the sharp increase in the global price of cobalt between 2016 and 2018.**	**[4]**

Skills:
- ✓ *Identify a factor from extract 1 that has resulted in the increase in global price of cobalt.*
- ✓ *Explain that the increase in price is caused by an increase in demand and the magnitude of increase is influenced by the price elasticity of supply.*

- The increase in price of cobalt is due to an **increase in demand** as there has been an increase in the use of electric vehicles which requires cobalt in the manufacturing of lithium-ion batteries to power electric vehicles.
- This resulted in a **rightward shift of the demand curve → shortage** of cobalt at the original equilibrium price → **upward pressure on price** → price increase.
- The sharp increase in price is due to the **supply of cobalt being price inelastic** as it takes time to mine the cobalt and most of the world's reserves and production of cobalt are in one country, the Democratic Republic of Congo (extract 1) → producers cannot respond to the price increase quickly and thus will increase price sharply to eliminate the shortage.



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Mark scheme:

- ***1 mark for identifying demand for cobalt has increased due to increase in demand for electric vehicles and lithium-ion batteries. (use of case evidence)***
- ***1 mark for explaining how the increase in demand of cobalt leads to an increase in its price.***
- ***1 mark for explaining that the sharp increase in price is due to supply being price inelastic***
- ***1 mark for correct diagram.***

(c)	**Explain a factor that could be responsible for the trend in the global price of lithium-ion battery shown in Figure 2.**	**[3]**

Skills:

✓ *Identify the trend in the global price of lithium-ion battery in figure 2.*
✓ *Explain the price change using demand and supply concepts.*

- The global price of lithium-ion battery has been **decreasing** as shown in figure 2.
- Since the demand for electric vehicles has been increasing, which will increase the demand for lithium-ion battery and hence its price, **the fall in global price of lithium-ion battery can be attributed to a larger increase in supply**. (increase in SS > increase in DD).
- The increase in supply could be caused by lowering cost of production due to technology improvement, scale expansion or increase in number of lithium-ion battery manufacturers.

Mark scheme:

- ***1 mark for identifying that global price of lithium-ion battery is decreasing.***
- ***1 mark for explaining that the fall in price is due to an increase in supply.***
- ***1 mark for explaining a possible reason for the increase in supply.***

(d)	**Consider whether an expansion in the supply of cobalt by the mining companies will increase their total revenue.**	**[5]**

Skills:

✓ *Explaining the impact on an increase in supply on total revenue*
✓ *Explaining how the impact on total revenue is dependent on the price elasticity of demand and the strength of demand as well.*

- An expansion in the supply of cobalt by the mining companies will shift the supply curve to the right, resulting in a surplus and downward pressure on price, assuming demand is constant → **equilibrium price will fall and equilibrium quantity will increase.**
- The impact on total revenue is **dependent on the magnitude of change in price and quantity** since total revenue is given by price multiplied with quantity. This can be determined using the concept of **price elasticity of demand**.
- The **demand for cobalt is price inelastic** as there is a lack of strong substitute (extract 1) → the decrease in price will lead to a less than proportionate increase in quantity demanded → **total revenue will fall.**
- However, the **demand for cobalt is expected to increase** as demand for electric vehicle increases (extract 1) due to changing taste and preference. An increase in demand will push equilibrium quantity and price to rise, leading to an **increase in total revenue**.

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- Therefore, whether the expansion in the supply of cobalt will increase the total revenue of mining companies depends on the extent of the increase in demand for cobalt in the future and the price elasticity of demand for cobalt as demand may become price elastic if a stronger substitute could be found.

Mark scheme:

- ***1 mark for explaining the impact of increase in supply on equilibrium price and quantity of cobalt.***
- ***2 marks for explaining how total revenue may decrease using the concept of price elasticity of demand.***
- ***2 marks for explaining how total revenue may increase due to an expected increase in demand for cobalt or change in price elasticity of demand of cobalt in the future.***

(e)	**Explain whether electric vehicle is a public good.**	**[4]**

Skills:

✓ *Explain the characteristics of a public good and justify whether electric vehicle has those characteristics.*

- A public good will display the characteristics of **non-rivalry in consumption and non-excludability.**
- Non-excludability: Once the good is provided, it is difficult or impossible to exclude non-payers from consuming the good.
- **Application to electric vehicle**: However, the usage of electric vehicle is excludable → A non-paying individual is easily denied the usage of the electric vehicle entry if he/she has not made the necessary payment.
- Non-rivalrous in consumption: The consumption of the good for an additional user will not diminish the quantity or satisfaction of existing users consuming the good.
- **Application to electric vehicle**: However, the consumption of electric vehicle is rivalrous → there is a maximum seating capacity in an electric vehicle.
- Thus, electric vehicle **does not display BOTH characteristics of a public good** and hence it is a private good.

Mark scheme:

- ***2 marks for explaining the characteristics of a public good (non-rivalrous and non-excludability in consumption).***
- ***2 marks for applying the concepts of non-rivalrous and non-excludability on electric vehicles***

(f)	**Explain the market failure resulting from the usage of diesel-powered cars.**	**[6]**

Skills:

✓ *Explain what is meant by market failure*

✓ *Explain how the use of diesel-powered cars generates negative externality, leading to deadweight loss in the society.*

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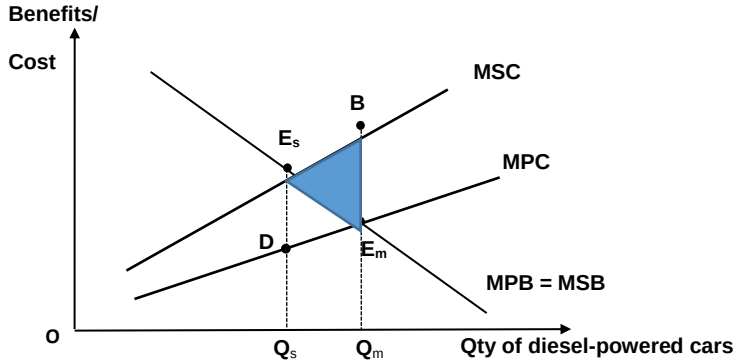
Identifying the sources of market failure in the market for diesel-powered cars

- The usage of diesel-powered cars **generates negative externalities** as it emits harmful pollutant such as nitrogen oxide and thus **pollutes the air** (extract 2).
- As other vehicles, the use of diesel-powered cars generates negative externalities arising from **road congestion.**
- As negative externalities cause the **underpricing** in the production and consumption of goods, price mechanism will allocate too much resources in the market for diesel-powered cars when there is no government intervention.

Explaining why the presence of negative externalities leads to market failure and welfare loss

- Negative externalities arise when the usage of diesel-powered cars affects the well-being of a third party negatively and the affected-party does not receive any compensation for the effect.
- When driving diesel-powered cars, consumers only consider their Marginal Private Benefits (MPB) and Marginal Private Cost (MPC). The private benefit is the satisfaction derived from the convenience of driving the car while the private costs comprise the price of the car and the fuel cost.
- To maximize their own satisfaction, they will choose to own or use cars to the point of Q_m where their MPC = MPB.
- However, these consumers do not take into account the Marginal External Cost (MEC) imposed on third parties.
- In extract 2, **these external costs are the air pollution and road congestion** which harm the well-being of the population. Road congestion causes longer journey times for other drivers on the road and result in a **less efficient transportation system**, hence lowering overall productivity in the economy
- Since MEC is positive, this implies that there is a divergence between MSC and MPC; and MSC > MPC as MSC = MPC + MEC. This is illustrated below.



- To society, the social optimum is at Qs where MSB = MSC, as this maximizes society welfare.
- As such, since Qs < Qm, there is an **overconsumption (excessive ownership or use) of diesel-powered cars** by QsQm.
- There is **underpricing** in the usage of diesel-powered cars and society incurs more resources than what car owners are paying, leading to **welfare loss which is the use of resources that brings about net loss to society.**
- There is a welfare loss of EsEmB and one of the forms of welfare loss is the total loss in national income due to various medical illnesses caused by air pollution and lower productivity due to congestion.
- Therefore, the price mechanism has failed to allocate resources in an efficient manner and thus government needs to intervene in this market to improve society's welfare.

Level	Descriptor	Marks
L3	• A developed explanation of market failure from the usage of diesel-powered cars using economic analysis. • Good use of examples in explanation.	5 – 6

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	• Limited or no conceptual inaccuracies in explanation.	
L2	• An underdeveloped explanation of market failure using economic analysis. • Limited or no use of examples in explanation. • Some conceptual inaccuracies in explanation.	3 – 4
L1	• For an answer that is largely inaccurate or irreverent. • Severely lacking in economic analysis.	1 – 2

(g)	**With reference to Extract 3, evaluate the policies adopted by the Chinese government to increase the production of electric vehicles in China.**	**[9]**

Skills:

- *Identify the policies adopted by the Chinese government to increase the production of electric vehicles in China.*
- *Explain how these policies would increase equilibrium output in the market.*
- *Evaluate the policies using appropriate criteria such as effectiveness and sustainability of the of policies.*

Introduction

- The Chinese government has given out **subsidies to producers and encouraged innovation** to increase production of electric vehicles in China.
- The rationale of these policies is to reduce the use of fuel-based vehicles so as to address the problem of market failure due to negative externalities as explained in part (f).

Explaining the policy of subsidy

- A subsidy to producers is meant to lower the cost of production to producers (government absorbs part of the cost) to encourage a higher production level.
- When subsidies are given to the producers, cost of production will fall, and supply will increase. A surplus occurs and there is downward pressure on price. Thus, subsidies will lower the price of electric vehicles.
- Lower prices of electric vehicles will **reduce the demand for fuel-based ones**.

Evaluating the policy of subsidy

- The subsidy can lead to **complacency among firms**, which has led to the production of **electric vehicles of poor quality** and loss of competitiveness.
- The **effectiveness** of subsidy to increase production also **depends on the price elasticity of demand of electric vehicle.** The demand of electric vehicle could be said to be price inelastic as it may be a poor substitute to diesel-powered vehicle. Therefore, even if the price of electric vehicle falls, the increase in output may be very small in extent as drivers are not very price sensitive, making the policy of subsidy an ineffective one and resulting in wastage of resources as the intended outcome could not be achieved.
- Moreover, this policy of subsidizing the producers of electric vehicle may not be **sustainable** as it will strain the Chinese government's limited budget. To sustain the subsidy, the Chinese government may need to raise tax in the future or reallocate resources from other sectors → incurring an opportunity cost which could have been better used such as infrastructure or healthcare.

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Explaining the policy of encouraging innovation

- The Chinese government has also tried to encourage innovation among Chinese tech firms in its attempt to increase production of electric vehicle such as **making an internet-connected electric vehicle.** This would **improve the quality of electric vehicle** and catered more to the preference of the increasing tech-savvy Chinese population.
- Encouraging innovation in this case would result in an **increase in demand** for electric vehicle as consumers are more attracted to the higher quality electric vehicles. The increase in demand would result in a shortage of electric vehicle and put upward pressure on price. This would then act as a signal for producers to increase production of electric vehicle.

Evaluating the policy of encouraging innovation

- The policy may be not very **effective** as the **success of innovation is not guaranteed**, leading to **uncertain outcomes**. Innovation may fail, and this will result in wastage of resources as a result as well.
- Moreover, **innovation takes time** and it will only increase production of electric vehicle in the **long run**. Hence it will not be able to increase production of electric vehicle immediately.
- In addition, innovation will incur **huge expenses for the firms** as research and development (R&D) is expensive as well. Some firms may not have the necessary resources to innovate and hence it may not be **feasible** for all firms to conduct innovation.

Conclusion

- In view of the possible constraint faced by firms and to speed up the innovation process, the **Chinese government may also need to provide R&D grants for the firms**.
- The policy of **encouraging innovation is also a more effective long-term policy** while the **policy of subsidy to producers is more effective as a short-term policy** as shown by the huge number of low quality electric vehicles on the streets in China.

Level	Descriptors	Marks
L2	• A developed and balanced analysis of two policies implemented by the Chinese government to increase production of electric vehicles. • max of 4 marks for two policies but not well-developed. • Good use of examples from the extracts • Limited or no conceptual inaccuracies in explanation	4-6
L1	• A developed but one-sided analysis of a policy implemented by the Chinese government to increase production of electric vehicles. Or • A balanced but underdeveloped analysis of a policy implemented by the Chinese government to increase production of electric vehicles. • Some or no use of examples from the extracts. • Some conceptual inaccuracies in explanation.	1-3
Evaluation		
E2	Valid evaluative comments with clear criteria e.g. effectiveness or sustainability of the policies.	2-3
E1	Attempt at evaluating but without elaboration or explanation	1

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(h)	**Discuss whether increasing production of electric vehicles, together with driverless and ride-hailing transportation, will mean that governments do not need to intervene in the public transport market of buses and trains.**	**[12]**

Skills:

- *Explain the rationale of government intervention in the public transport market of buses and trains* → ***to improve resources allocation in the land transport market****.*
- *Explain why government may not need to intervene in the public transport market of buses and trains due to increasing production of electric vehicles, together with driverless and ride-hailing transportation.*
- *Provide* ***an alternative perspective*** *on why government may still need to intervene in the public transport market of buses and trains.*
- *Provide an overall judgement on whether there is a need for government to intervene in the public transport market of buses and trains.*

Introduction: unpacking and identifying the need for government intervention in the public transport market of buses and trains

- **Government intervention is needed when the price mechanism is unable to allocate resources efficiently or equitably.**
- In this case, government intervene in the public transport market of buses and trains due to **negative externalities generated from usage of fuel-based vehicles (air pollution and road congestion) as well as equity concern.**
- **Public transport is a substitute to various forms of private transport.** Hence governments intervene in the public transport market of buses and trains using policies such as subsidies or regulation to reduce price of public transport as well as improving quality of the trains and buses to make it a strong substitute to private transport **(fall in demand).** This would address the problem market failure in the market for car usage where there is over-allocation of resources.
- Public transport is also used by the masses and **a necessity for transportation** purposes → there is a need for government to **ensure public transport is affordable, especially for the lower income.**

Explaining the basis of the suggestion in the questions (with electric vehicles, driverless and ride-hailing transportation, governments do not need to intervene in public transport market)

- **The development of autonomous ride-hailing using electric vehicles can correct market failure through market forces → less pollution and fall in car ownership**
- The increase in production of electric vehicles means **less harmful pollutants are being released,** as car owners switch from diesel-powered cars to the more environmentally friendly electric vehicle. This would **reduce the negative externalities from air pollution.**
- Moreover, ride-hailing will be much cheaper with the use of autonomous electric vehicles as the bulk of the cost of ride-hailing is accounted to the driver (Extract 4). **Car ownership may thus fall as consumers switch from car ownership to ride hailing.**

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Evaluation: While the options of electric vehicles and ride hailing reduce air pollution, **there will still be the market failure due to traffic congestion** if too many cars on the road, including driverless ones.

- The increasing use of ride-hailing in autonomous electric vehicle **will worsen road congestion instead as consumer switch from using public transport to ride-hailing** when ride-hailing becomes cheaper and is more comfortable.
- Ride-hailing companies such as Uber may increase their capacity by adding more cars on the road in anticipation of increasing use of ride-hailing.
- Therefore, **government intervention in public transport is still needed to reduce the number of vehicles on the road to manage road congestion.**

Evaluation: Government intervention in public transport is still needed to ensure the **affordability** of mass land transportation.

- While the increase in usage of autonomous electric vehicle may lead to a more efficient allocation of resources, **government intervention may still be needed due to equity concern.**
- Although the cost of ride-hailing may be reduced due to the autonomous electric vehicle, it may be still too expensive, especially for the lower income. Without government intervention in the public transport market, **the lower income may not have affordable mode of transport**, affecting their cost of living and quality of life.
- For example, the **Public Transport Council (PTC) regulate public transport fares in Singapore** by ensuring that the price charge reflects market dynamics (such as changes in operating cost and ridership) but remains affordable. Students and senior citizens are also given concessionary fare at lower prices.
- In addition, the **prohibitive investment and operation costs may also act as a constraint for private firms to operate public transport of buses and train**, especially that of trains since train railways are also needed. Therefore, government needs to provide for these buses and trains if private firms are unable to do so since government has greater ability to do so as it can raise tax to fund for the public transport.

Evaluation: However, the funding of public transport will put a **huge strain on government budget**, hence incurring a huge **opportunity cost** where the government budget could be spent on other more productive areas. Raising tax to fund for the public transport has also trade-offs that consumers have lesser disposable income and hence purchasing power, resulting in lower material standard of living in the short term if income tax was raised. Therefore, intervention does not necessarily mean providing free public transport. A reasonable extent of fares on consumers will be needed to ensure sustainability of the public transport model. **It is also important that the public transport is of sound quality in comprehensiveness and reliability to make it a viable alternative to private transport.**

Conclusion: Coming to a well-reasoned judgement on the need for government intervention in the public transport market of buses and trains with increasing production of electric vehicles, together with driverless and ride-hailing transportation.

- There is still a need for government intervention in the public transport market of buses and trains even if autonomous electric vehicle and ride hailing become more affordable because traffic congestion and equity concerns will remain.

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- It is also critical for the government to manage vehicle population growth and ensuring true pricing in vehicle usage because if these are not carefully calibrated, market failure in land transport will not be addressed.

Level	Descriptors	Marks
L3	• For a well-developed and balanced answer that **considers both efficiency (air pollution and congestion) and equity issues** • Low level 3 awarded for a well-developed and balanced answer that fails to recognize that congestion and equity are also key reasons for government intervention in public transport, not just air pollution • Discussion considers the trends mentioned in question	7-9
L2	• Undeveloped answer that considers only air pollution and congestion in discussion OR • Undeveloped answer that considers only air pollution and equity in discussion Or • Answer is confined to discussion of government intervention in public transport, with little contextualization to trends mentioned in question	4-6
L1	• For an answer that is largely irrelevant or inaccurate • For an answer that lacks economic reasoning	1-3
Evaluation		
E2	Valid evaluative comments with clear explanation, providing an overall judgement on whether government intervention in the public transport market is needed with increasing production of electric vehicles, together with driverless and ride-hailing transportation.	2-3
E1	Attempt at evaluating but without elaboration or explanation	1

[Total: 45]

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Question 2: UK's Growth and Economic Dynamism

Table 1: Economic indicators of the UK economy (Annual % change)

	2015	2016
Real GDP growth rate	2.3	1.8
Inflation rate	0.4	1.0
Unemployment rate	5.4	4.9

Table 2: Changes in UK's GDP composition by industry (%)

	Manufacturing Industries	Services-producing Industries[1]	Other Industries
2006	22.1	77.3	0.6
2016	19.2	80.2	0.6

[1]*Wholesale & Retail Trade, Transportation & Storage, Accommodation & Food Services, Business, Finance & Insurance, Information & Communications and other Services*

Sources: *Various*

Extract 5: Better than expected performance for the UK economy since the Brexit vote

Following UK's vote to leave the European Union (EU) in June 2016, most economists believed that a recession was imminent. But there has been no recession. What went right?

Firstly, economists' worries that heightened uncertainty would prompt households to rein in their spending and businesses to put investment plans on hold were unfounded. Meanwhile, Britain remains an attractive place for foreign investors, in part because of its trusted legal system and low rate of corporation tax. The global economy has also helped. The Brexit vote coincided with the beginning of the first worldwide economic upswing in years.

The question is whether this unexpectedly good performance can continue. As UK's departure from the EU nears, businesses may start to get more jittery. If investment spending is cut, then consumers will eventually start to feel the pinch. And Brexit itself, which is likely to leave Britain with severely reduced access to its largest export market, will have profoundly negative long-term economic consequences.

Source: *The Economist,* 15 January 2018

Extract 6: Issues facing UK beyond Brexit

Britain has deep structural problems. The economy has been too dependent on debt-driven consumer spending and suffered from decades of underinvestment in public infrastructure. The availability of cheap workers has also meant companies have less incentive to splash out on expensive but efficiency-enhancing machines.

But one point is worth making. Today, the makeup of growth is changing all thanks to the pound's fall in the foreign exchange market which is helping to rebalance the economy away from an excessive reliance on consumer spending, even though the boost to exports and national income would be bigger had it not been for the insignificant growth in industrial capacity over the past four decades.

Source: *The Guardian,* 15 March 2018

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Extract 7: The changing structure of the UK economy

Since 2011, the UK's manufacturing sector has suffered a fresh era of decline as it relies on an expansion of low value-added assembly line roles in industries. This is far from their dream of being the source of new high value-added jobs in research and development. Output has barely risen in the past five years despite a 5% increase in the number of jobs created, revealing that the driving force of year-on-year productivity improvements have eluded the sector.

This is in contrast with the UK's services industries where employment and output is growing faster, especially in face-to-face services such as personal care. These service jobs are more difficult to automate than manufacturing or information services, which gives more room for these industries to come up with innovation to create personalised and niched services. But this may not always be possible, due to limited financial resources by the smaller companies.

All these reflected the changing structure of the UK economy, where the manufacturing share of its gross domestic product (GDP) has been on a downtrend, while the services sector has grown at a higher rate. With productivity growth in the services sector rising at a more moderate pace than in manufacturing, overall labour productivity growth has likewise been affected. As the size of services-producing sector increases, the ability of the UK economy to boost and sustain productivity growth rates is going to be very important.

Source: *The Guardian*, 21 October 2016

Extract 8: UK can still achieve economic dynamism

When a country is dynamic, it is more resilient to shocks, can grow more rapidly without generating inflationary pressure or creating risks to financial stability and can also be associated with more effective competition.

UK has a falling total fertility rate and an ageing population. However, many economists suggest that demographics is not destiny. While vibrant cities do attract people and add to the labour force, the main source of growth and dynamism is not headcount but productivity growth. This goes to show that the UK can still achieve economic dynamism in the face of demographic changes but how exactly can this be achieved?

Often, governments tend to champion specific sectors such as manufacturing or industries such as green technology. True dynamism flows from continuous innovation, experimentation, adaptation, and change, all of which raise productivity over time. These productivity gains, in turn, lift incomes and drive greater consumption. This fuels more innovation and a dynamic economy thus expands in a healthy, sustainable way.

According to the Grant Thornton's Global Dynamism Index released in 2015, the UK ranks 27 out of 60 economies for its overall growth potential contributed by a combination of factors, including political and economic stability, low level of legal and regulatory risk, intellectual property filing rates and innovative businesses drawing from a global talent pool. For the UK to maintain and improve its competitiveness, it should do more to encourage investments in infrastructure, technology, productivity and other dynamic indicators which ultimately power the economy and instil confidence in its long-term growth prospects.

Sources: *Various*

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Questions:

(a) What conclusion would you draw from Table 1 about the overall economic performance of the UK economy in 2016 compared to 2015? **[4]**

(b) Using an AD/AS diagram, explain two reasons why the UK economy was expected to slip into recession after deciding to leave the European Union. **[5]**

(c) With reference to Extract 6,

(i) Explain how the fall in the value of pound might affect general price level in the UK. **[3]**

(ii) Explain what it means by "the boost to exports and national income would be bigger had it not been for the insignificant growth in industrial capacity over the past four decades". **[2]**

(d) Using Extract 7, discuss whether all countries should follow the UK economy by expanding their services industries to achieve higher economic growth. **[9]**

(e) In light of the case materials provided, discuss the policies that the UK government could adopt to maintain a low rate of unemployment. **[10]**

(f) Extract 8 suggests that the UK can still achieve economic dynamism despite her demographic changes.

Discuss the view that ageing population is not an obstacle to the UK economy in achieving economic dynamism. **[12]**

[Total: 45]

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H1 Economics Prelim Examinations Suggested Answer
Question 2: UK's Growth and Economic Dynamism

**Note to students: Quotes from the extracts have been reproduced in the suggested answer key for learning purposes. You are only required to ACKNOWLEDGE the extract used i.e. "From Extract 5, it suggests that…". You MUST NOT reproduce the quotes.*

(a) What conclusion would you draw from Table 1 about the overall economic performance of the UK economy in 2016 compared to 2015? [4]

- Real GDP growth rate has fallen but still positive → real NY has increased but at a slower rate.
- Inflation rate is positive and has slightly risen → GPL is increasing at a faster rate.
- Unemployment rate has fallen → more people were able to find a job compared to 2015.
- Overall, UK's macroeconomic performance is positive but considered generally weak, as indicated by the low economic growth and inflation rates.

✓ *3m for interpreting changes in UK's economic indicatorsEx*
✓ *1m for overall judgement of UK's macroeconomic performance*

(b) Using an AD/AS diagram, explain two reasons why the UK economy was expected to slip into recession after deciding to leave the European Union. [5]

- Poor economic sentiments → falling C and I → falling AD → fall in real NY *(Extract 5: "Firstly, economists' worries that heightened uncertainty would prompt households to rein in their spending and businesses to put investment plans on hold").*
- Loss in EU as a key export market → falling X → falling AD → fall in real NY *(Extract 5: "And Brexit itself, which is likely to leave Britain with severely reduced access to its largest export market").*

✓ *1m for diagram showing leftward shift in AD causing a fall in real NY*
✓ *2m for each reason to explain falling real NY using Extract 5 and economic analysis (falling AD)*

(c) With reference to Extract 6,
(i) Explain how the fall in the value of pound might affect general price level in the UK. [3]

- A weaker pound would increase UK's import prices in its own currency as a unit of the currency can now buy fewer foreign goods → increases domestic costs of living and production → reduces SRAS → increases domestic GPL.
- A weaker pound would also decrease UK's export prices in foreign currencies → increases X (assuming PED>1) → increases AD → increases domestic GPL.

✓ *1m to explain the effect of weaker pound on import or export prices*
✓ *2m to explain the effect on GPL using economic analysis (either through SRAS or AD)*

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(c) (ii) Explain what it means by "the boost to exports and national income would be bigger had it not been for the insignificant growth in industrial capacity over the past four decades". [2]

- UK economy is producing near maximum productive capacity
- This implies that there are insufficient resources available to produce goods and services → despite the increase in exports, there will be limited growth in real NY once maximum productive capacity is reached.

✓ *1m in identifying UK producing near maximum productive capacity*
✓ *1m to explain how the lack of spare productive capacity limits the growth in X and real NY*

(d) Using Extract 7, discuss whether all countries should follow the UK economy by expanding their services industries to achieve higher economic growth. [9]

Question approach:

- Show understanding that higher economic growth refers to real national income increasing at a faster rate.
- Explain how expansion of services industries has risen in demand and are perceived to generate greater value-added compared to manufacturing industries, hence allowing for higher economic growth rates.
- Consider the appropriateness of countries adopting this strategy. Notice that the question is phrased as "all countries" which allows for scope in discussion e.g. Should developing countries follow UK in doing so? What are some of the challenges faced by countries when using the expansion of services industries to boost economic growth?

Introduction:

- Higher economic growth suggests that real national income is increasing at a faster rate.
- As shown in *Table 2* and *Extract 7*, the UK economy has expanded its services industries over time *(Extract 7: "the manufacturing share of its gross domestic product (GDP) has been on a downtrend, while the services sector has grown at a higher rate").*
- Although services industries are growing in demand and generate more value to a country's national output, the type of services provided must be examined. If countries were to allocate resources away from manufacturing to services industries, the returns from doing so may be insignificant if low-value services are produced.

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1. **Why countries should follow the UK economy in expanding their services industries to achieve higher economic growth:**

- For UK's services industries, growth in output is most evident in face-to-face industries *(Extract 7: "employment and output are growing faster, especially in face-to-face industries such as personal care")*. **The expansion of services industries in response to the higher demand for services will thus help to generate more employment and output hence helping to raise UK's economic growth rates** as shown by the increase in services share of gross domestic product (GDP) in UK.
- There could also be more room for firms to create unique services with PED < 1, hence allowing firms to charge a higher price premium, increasing total revenue earned. **By providing personalised services such as those in the insurance and banking sectors, UK may be able to generate higher value-added to national output, hence achieving higher economic growth rate.**
- **<u>Evaluation</u>: However, just like manufactured goods, there is a wide range of services that can be produced. Low value-added services do not add as much value to a country's national output and employment compared to high-end manufactured goods such as computer chips.**

2. **In some countries, resources may be more efficiently used in producing manufactured goods compared to services.**

- **To achieve higher economic growth, efficient use of resources in a country is needed to generate maximum output and employment.**
- For developing countries with abundant cheap low-skilled labour, they should expand manufacturing industries instead of services industries to attract Foreign Direct Investment (FDI) looking to expand their manufacturing bases overseas.
- For the UK economy, the pursuit of services expansion is partly driven by the addition of mostly low value-added jobs in manufacturing industries *(Extract 7: "the UK's manufacturing sector has suffered a fresh era of decline as it relies on an expansion of low value-added assembly line roles in industries").* Hence, the expansion of services is adopted to create more high value-added jobs to drive productivity growth needed to support higher growth rate in UK which is producing very near to its maximum productive capacity *(Extract 6).*

Synthesis: Overall well-reasoned judgement on whether all countries should follow the UK economy in expanding services industries to achieve higher economic growth.

- The decision to expand services industries is largely dependent on the country's factor endowment. While there may be a rise in the demand for services, the demand for manufactured goods is still high and increasing with income levels.
- It is important that countries use their resources efficiently to generate maximum output and employment regardless of their decision to expand services or manufacturing sectors.
- Ultimately, as economies develop, they will naturally transit from a manufacturing-driven to a services-based growth path. Countries should not rush in expanding services industries simply because of its higher value-added and growth in demand.

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Question (d) mark scheme:

Level	Level Descriptors	Marks
L3	• Conceptually accurate and well-developed analysis in explaining these key ideas: o Services industries are able to generate more output and employment hence driving higher economic growth. o The decision to expand services industries is dependent on the country's factor endowment. Resource should be used efficiently regardless of the country's decision to expand services or manufacturing industries.	5-6
L2	• Conceptually correct but answer is largely one-sided or balanced but undeveloped. • May contain minor conceptual errors.	3-4
L1	• Descriptive i.e. lacks economic analysis. • Contains major conceptual errors.	1-2
E2	• Answer recognizes and justifies why both demand-management and supply-side policies are needed in UK. • *E.g. Answer argues that a country's resources must always be used efficiently to generate maximum output and employment. For developing countries, abundant cheap low-skilled labour is able to attract FDI that are looking to set up manufacturing bases overseas.*	2-3
E1	• Superficial / simplistic evaluation statements without justification. • *E.g. Answer states that some countries may not have the resources suitable to support expansion of services industries such as skilled labour.*	1

(e) In light of the case materials provided, discuss the policies that the UK government could adopt to maintain a low rate of unemployment. [10]

Question approach:

- Show clear understanding that unemployment is an economic problem caused by changes in both the demand and supply sides of the economy and that to deal with this problem will require policy measures addressing both these sides.
- Case materials provided suggest that UK is facing both demand-deficient and structural unemployment caused by the decision to leave EU and ongoing expansion of services industries respectively.
- Discuss policies in terms of effectiveness and/or appropriateness.

Introduction: The UK government should use both demand and supply-side policies to maintain a low rate of unemployment in the country.

- Low unemployment suggests a level that is very close to the natural rate of unemployment. Typically, statistics on job vacancies indicate that the number of jobs available matches the number of unemployed.
- UK faces both demand-deficient and structural unemployment.
- Demand-management policies are largely aimed at enhancing jobs creation while supply-side policies help in sharpening UK's competitiveness and improving workers' employability as well as mobility.

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1. **In view of the possible fall in AD caused by UK's decision to leave EU, the UK government should adopt expansionary fiscal policy to counter the possible rise in demand-deficient unemployment.**

- As mentioned in (b), UK's decision to leave the EU can cause AD to fall relative to LRAS due to falling C, I or X. With firms experiencing a fall in profits, they may respond by laying off workers to cut costs, hence triggering demand-deficient unemployment.
- **While Extract 5 suggests that UK's economy has managed to avoid slipping into a recession, the risk of falling AD is still present and very much dependent on economic sentiments as well as the country's ability to export to other markets that can help counter the decline in exports to EU which has all along been UK's largest export market.**
- Expansionary fiscal policy can therefore be used as a counter-cyclical approach. To increase AD, the UK government can adopt a budget deficit where government spending is raised and/or taxes are reduced so that government spending is more than tax revenue collected. For example, public sector hiring can be expanded and public infrastructure projects brought forward to create more jobs. As a result, the increase in demand for workers will rise hence reducing the risk of demand-deficient unemployment.
- **Evaluation: However, if domestic economic sentiment is poor, AD may not increase significantly, hence causing expansionary fiscal policy to be less effective. More importantly, expansionary fiscal policy does not help to reduce the possible skills mismatch caused by economic restructuring despite being effective in creating jobs.**

**Note to students: As the pound is already weakening (Extract 6), there is a lesser need for the UK government to adopt currency depreciation as its demand-management policy.*

2. **Indeed, while jobs may be created, workers may not have the skills to take up these jobs. Therefore, supply-side policies are needed to support workers' transition from manufacturing to services-based industries as well as to develop new growth industries to compensate for declining industries, hence reducing both structural and demand-deficient unemployment.**

- UK is expanding its services industries *(Extract 7: "the manufacturing share of its gross domestic product (GDP) has been on a downward trend, while the services sector has grown at a higher rate" and "this is in contrast with the UK's services industries where employment and output is growing faster").*
- Therefore, there can be a mismatch between skills and job requirements in the labour market when workers laid off from manufacturing industries try to seek employment in services industries, hence triggering structural unemployment.
- **To reduce and prevent further worsening of structural unemployment, the UK government should provide skills training to improve workers' employability and mobility across industries.** This would help to create a labour culture anchored on life-long learning and continuous skills upgrading.
- **In addition, the UK government can adopt pro-competition supply-side policies or provide subsidies that encourage firms to adopt more technology and innovation, so as to produce high technology value-added goods and services** *(Extract 7: "These service jobs are more difficult to automate than manufacturing or information services, which gives more room for these industries to come up with innovation to create*

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personalized and niched services. But this may not always be possible, due to limited financial resources by the smaller companies"). This would help to create new export demand, attract FDI hence preventing a possible rise in demand-deficient unemployment.

- **<u>Evaluation</u>: However, supply-side policies require time to be effective. If demand-deficient unemployment is rising rapidly due to UK's decision to leave EU, the UK government should use expansionary fiscal policy as it requires a shorter time to raise AD needed for jobs creation.**

Synthesis: Overall well-reasoned judgement on the policies that the UK government should adopt to maintain a low rate of unemployment.

- In view of UK's decision to leave EU and with expansion of services industries going on at the same time, both expansionary fiscal policy and supply-side policies are needed to enhance jobs creation rate and improve workers' employability as well as mobility across industries.
- Although supply-side policies will only be effective in the long run, they should be implemented as an ongoing approach in UK which has been experiencing slowing productivity growth *(Extract 7: "With productivity growth in the services sector rising at a more moderate pace than in manufacturing, overall labour productivity growth has likewise been affected").*

Question (e)'s mark scheme:

Level	Level Descriptors	Marks
L3	• Conceptually accurate and well-developed analysis in explaining why and how both demand-management and supply-side policies are needed in view of UK's decision to leave EU and with economic restructuring going on at the same time. • Good use of relevant case information to support analysis.	6-7
L2	• Conceptually correct but answer is largely focused on either demand-management or supply-side policies. • May contain minor conceptual errors. • Some use of case information to support analysis.	3-5
L1	• Descriptive i.e. lacks economic analysis. • Contains major conceptual errors.	1-2
E2	• Answer recognizes and justifies why both demand-management and supply-side policies are needed in UK. • *E.g. Answer argues that while jobs may be created, the risk of structural unemployment suggests that workers may not have the skills to take up these jobs hence suggesting the need for supply-side policies to be implemented alongside demand-management policies.*	2-3
E1	• Superficial / simplistic evaluation statements without justification. • *E.g. Answer states that UK government should adopt demand-management policies in the short run and supply-management policies in the long run.*	1

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(f) Extract 8 suggests that the UK can still achieve economic dynamism despite her demographic changes.

Discuss the view that ageing population is not an obstacle to the UK economy in achieving economic dynamism. **[12]**

Question approach:

- Using case information provided, explain what it means by economic dynamism.
- Identify and explain the challenges that an ageing population poses to UK's productivity growth and connect this to the country's ability in achieving economic dynamism.
- Recognise and explain that while UK can still achieve economic dynamism if the government puts in place appropriate measures to raise productivity growth rate.

Introduction:

- According to *Extract 8*, economic dynamism refers to industries being engaged in a continuous cycle of innovation, experimentation, adaption and change, which then helps to bring about productivity improvements in the country over time. This would in turn make the economy more resilient to economic shocks, increase competitiveness and also allow it to grow without causing inflation.
- **To achieve economic dynamism, governments are often actively involved in encouraging investments in infrastructure, technology, productivity and areas such as intellectual property filing rates.**
- An ageing population in the UK does present several challenges in the form of reducing the country's attractiveness to FDI due to perceived (or actual) slower productivity growth as well as slower growth in innovation and R&D. These challenges further reduce UK's productivity which is already experiencing slow growth *(Extract 7: "With productivity growth in the services sector rising at a more moderate pace than in manufacturing, overall labour productivity growth has likewise been affected").*
- However, UK can still achieve economic dynamism despite facing an ageing population if appropriate policies are implemented to boost productivity growth.

1. An ageing population is indeed an obstacle to the UK economy's ability in achieving higher and sustained productivity growth required for economic dynamism.

- Investor confidence in UK may fall as foreign companies find it less attractive to invest in due to the perceived lower productivity growth rate or due to the perceived less-relevant skills level of the elderly. Given that UK has just made its decision to leave EU *(Extract 5),* the uncertain economic sentiments coupled with an ageing population may cause Foreign Direct Investment (FDI) to slow down hence causing a slow down or slower growth in infrastructure and innovation spending.
- In addition, the need for the government to finance the higher social spending associated with an ageing population may lead to an increase in taxes such as the corporate income tax. A higher corporate income tax further reduces UK's competitiveness to FDI and firms' after-tax ability to spend on R&D and innovation initiatives.
- Moreover, although the elderly may be educated with tertiary education in UK, this does not guarantee that they will be productive, especially with technological advancement increasingly making skills obsolete.

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- With countries being assessed in areas such as intellectual property filing rates, investments in technology and productivity according to the Grant Thornton's Global Dynamism Index *(Extract 8),* an ageing population can indeed be argued to reduce spending in these areas, hence lowering UK's ability in achieving economic dynamism.
- **<u>Evaluation</u>: Ageing population does not necessarily mean a fall in productivity growth rate or FDI competitiveness. Whether the elderly remain productive is largely dependent on the role played by the UK government in encouraging life-long learning/skills upgrading. Similarly, whether UK remains attractive to FDI is largely dependent on the presence of conducive supply-side conditions critical for driving sustained productivity growth through innovation and R&D.**

2. UK can still achieve economic dynamism despite its ageing population if appropriate policies are implemented to mitigate the challenges.

- The UK government can implement both market-oriented as well as interventionist supply-side policies to drive innovation and R&D. For example, the elderly can be sent for reskilling or skills upgrading so as to improve their productivity.
- In addition, the barriers to entry for certain industries can be lowered so as to increase competition among firms, hence raising the incentive for firms to innovate in order to retain market share.
- Alternatively, the UK government can increase the inflow of foreign talents into the country, thus helping to speed up the slow productivity growth.
- **<u>Evaluation</u>: Nevertheless, supply-side policies require time to take effect. Hence, it is likely that improvements to productivity growth will only be achieved in the long run.**

Synthesis: Overall well-reasoned judgement on whether the UK economy can achieve economic dynamism despite facing an ageing population.

- An ageing population does pose several challenges to UK's ability to achieve economic dynamism through the effects on productivity growth. However, with ongoing policies implemented to mitigate these challenges, UK can still achieve economic dynamism in the long run.
- **It is important that ageing population is viewed not just in terms of the challenges it brings but also the opportunities it presents.** For example, to meet the needs of the elderly, firms may become more motivated to carry out innovation and R&D work when venturing into new product markets. Examples of such markets would include healthcare services and personal transport devices such as e-scooters. Such demand-driven innovation will enhance the country's ability to achieve economic dynamism.

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Question (f)'s mark scheme:

Level	Descriptors	Marks
L3	• Balanced and conceptually accurate analysis in explaining these key ideas: ○ An ageing population presents several challenges that will reduce UK's productivity growth rate. ○ However, the UK government can still achieve economic dynamism if there are appropriate policies implemented to mitigate these challenges. • Good use of relevant case information to support analysis.	7-9
L2	• Conceptually correct but answer is largely one-sided or balanced but undeveloped. • Some use of case information to support analysis.	4-6
L1	• Descriptive i.e. lacks economic analysis. • Contains major conceptual errors.	1-3
E2	• Answer is able to generate a considered overall judgement on whether an ageing population will hinder the UK economy in achieving economic dynamism. • *E.g. Answer argues that while an ageing population can hinder UK's ability in achieving economic dynamism in the short run, appropriate government policies can be adopted to mitigate the potential fall in productivity growth rate.*	2-3
E1	• Superficial / simplistic evaluation statements without justification. • *E.g. Answer states that an ageing population will indeed hinder UK's ability in achieving economic dynamism, especially in the short run.*	1

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ANDERSON JUNIOR COLLEGE

JC2 PRELIMINARY EXAMINATION 2018

Higher 1

ECONOMICS 8823/01

Paper 1 29 August 2018

3 hours

READ THESE INSTRUCTIONS FIRST

Write your name, PDG and index number in the spaces provided on all the work you hand in.

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

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

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

Answer **all** questions.

Begin your answer to **each question** on a **fresh sheet** of writing paper.

At the end of the examination, **fasten your answers to each question separately**. Fasten **this cover page** in front of your answers **to Question 1**.

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

Name: _____ ( )

PDG: _____

Question Number	Marks Awarded
1	/45
2	/45
Total Marks	

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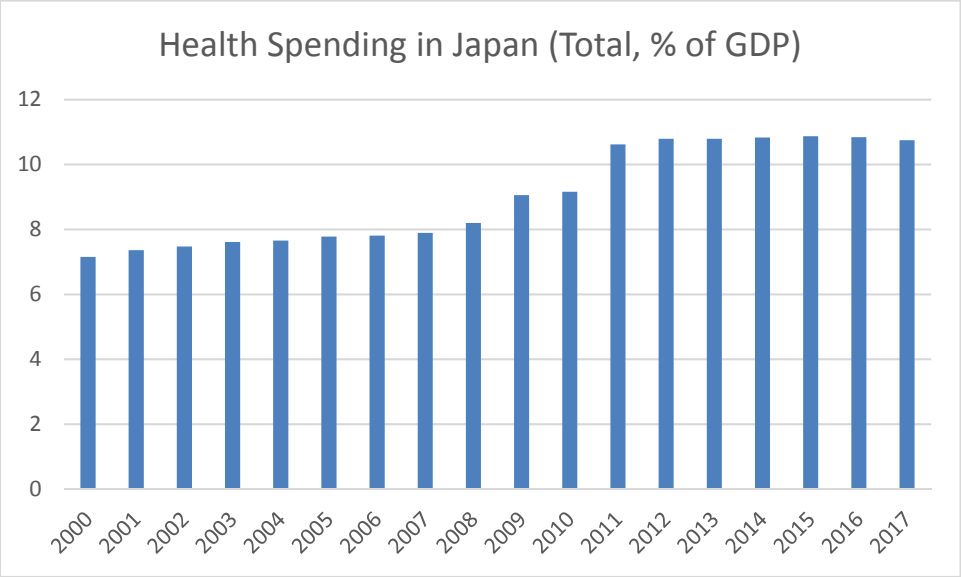
Answer **all** questions.

Question 1: Aging population: Burden or opportunity?

Figure 1: Health Spending in Japan



Source: *OECD*

Extract 1: Japan's demographic time bomb is getting more dire, and it's a bad omen for the country

An aging population like Japan's poses numerous problems. The government will have to spend more on healthcare, and that, coupled with a shrinking workforce and tax base, is a recipe for economic stagnation. It also means, among other things, that there will not be enough young people to care for the elderly.

"An aging population will mean higher costs for the government, a shortage of pension and social-security-type funds, a shortage of people to care for the very aged, slow economic growth, and a shortage of young workers," Mary Brinton, a Harvard sociologist, told Business Insider last year.

Source: *Business Insider*, 6 June 2018

Extract 2: Nursing care workers hard to find but in demand in aging Japan

As the nation's population rapidly greys, ensuring there are enough nursing care workers to meet growing demand has become a pressing issue. There has actually been a rise in nursing care workers. However, this has failed to keep pace with the rapidly growing demand, resulting in a nursing care industry with a chronic shortage of manpower. Considering Japan's declining workforce, the labour shortage in the industry is expected to worsen over time.

The government seeks to add 250,000 more nursing care workers to the system from 2017 by improving their working conditions and increasing their average monthly pay by 10,000 yen. But the state has not made clear how it will finance this.

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The government also plans to create new nursing care facilities to accommodate 500,000 more users by the beginning of 2020. This, however, has been questioned by industry experts who argue that in densely populated urban areas, the lack of workers is more acute than the shortage of facilities.

The increasing difficulty in finding enough workers has led more facilities to rely on temporary staff dispatched from agencies, and some have reduced services. To lessen the burden on staff, some nursing care facilities are starting to use robotics, including wearable units for elderly people and care workers.

Source: *Japan Times*, 27 June 2016

Extract 3: Japan's shrinking population not burden but incentive

Prime Minister Shinzo Abe said Japan's aging, shrinking population was not a burden, but an incentive to boost productivity through innovations. Abe's comments on Wednesday came days after official data showed that Japan has 34.6 million people aged 65 and older, or 27.3% of the population - the highest proportion among advanced nations.

"I have absolutely no worries about Japan's demography," Abe said at a Reuters Newsmaker event, noting that nominal gross domestic product had grown despite losing 3 million working-age people over the last three years. "Japan may be aging. Japan may be losing its population. But these are incentives for us," he said. "Why? Because we will continue to be motivated to grow our productivity," Abe added, citing robots, wireless sensors, and artificial intelligence as among the tools to do so. "So, Japan's demography, paradoxically, is not an onus, but a bonus."

Abe has focused on mobilising women and the elderly to compensate for a shrinking workforce rather than tackle head-on the politically touchy topic of immigration, although some changes are being considered on that front.

Source: *Reuters*, 21 September 2016

Extract 4: Aging Japan: Robots may have role in future of elder care

Robots have the run of Tokyo's Shin-tomi nursing home, which uses 20 different models to care for its residents. The Japanese government hopes it will be a model for harnessing the country's robotics expertise to help cope with a swelling elderly population and dwindling workforce. Allowing robots to help care for the elderly - a job typically seen as requiring a human touch - may be a jarring idea in the West. But many Japanese see them positively, largely because they are depicted in popular media as friendly and helpful. Plenty of obstacles may still hinder a rapid proliferation of elder care robots: high costs, safety issues and doubts about how useful and user-friendly they will be.

The Japanese government has been funding development of elder care robots to help fill a projected shortfall of 380,000 specialised workers by 2025. Authorities and companies in Japan are also eyeing a larger prize: a potentially lucrative export industry supplying robots to places such as Germany, China and Italy, which face similar demographic challenges now or in the near future. A few products are trickling out as exports: Panasonic Corp has started shipping its robotic bed, which transforms into a wheelchair, to Taiwan.

Source: *Reuters*, 28 March 2018

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Extract 5: A home from home for Japan's elderly

There are some key ways in which the nursing care sector in Japan has evolved to preserve its quality of care even as the hyper-ageing society ramps up its eldercare facilities. A quarter of its people are 65 or older now. By 2040, this group will make up more than a third of its population. Growing in tandem is the number and types of long-term senior care facilities available in Japan.

The most common is the tokuyo, a publicly funded facility that provides nursing care to seniors who have serious physical or mental disabilities. There were 566,600 beds in these facilities last year, up from around 300,000 in 2000.

Family members have traditionally cared for the elderly but nursing homes became affordable with the introduction of Japan's long-term care insurance (LTCI). Such a system is designed to shift the responsibility of supporting the elderly away from the family and into the public domain. This is key as more of the elderly requiring long-term care, and for longer periods. Yet, there was a lack of adequate caregiver support. The principles of this system include: supporting the independence of the elderly rather than just providing care, and allowing users to benefit from a range of services from institutions of their choice. This has led to a competitive market of service providers, mostly private players, springing up in the last decade.

Source: *Straits Times*, 31 July 2016

Questions

(a) (i) Describe the trend for health spending in Japan from 2000 – 2017. [1]

(ii) Discuss how far the concept of price elasticity of demand may account for the above trend in health spending. [9]

(b) With reference to data, discuss the likely effects of a shrinking workforce in Japan and technological advancement on the robotics market. [8]

(c) Explain two possible changes that may occur to the demand curve of healthcare workers given the introduction of robots. [4]

(d) What is the main characteristic of a normative economic statement? Identify one example of such a statement from Extract 3. [2]

(e) Is a publicly funded nursing facility an example of a public good? Provide reasons for your answer. [4]

(f) (i) Explain why the operation of a free market may lead to the under-provision of nursing facilities and how a subsidy can help to address the problem. [7]

(ii) Discuss the factors that the Japanese government should consider in allocating resources towards the development of elder care robots. [10]

[Total: 45]

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Question 2: Addressing deflation, fostering inclusive growth

Table 1: Key economic data for Singapore

	2013	2014	2015	2016
GDP per capita (current US$)	56,389	56,958	54,941	55,243
Economic growth rate (% change in real GDP)	5.1	3.9	2.2	2.4
Inflation rate (CPI, annual change in %)	2.4	1.0	-0.5	-0.5
Productivity growth rate (% change)	0	-0.9	-1.5	-0.5
Budget balance (% of GDP)	1.3	0.1	-1.2	-1.2
Life expectancy at birth (years)	82.4	82.6	82.9	83
Value of SGD (average rate per US$)	1.251	1.267	1.375	1.382
Gini coefficient before accounting for government transfers & taxes	0.463	0.464	0.463	0.458
Gini coefficient after accounting for government transfers & taxes	0.409	0.411	0.409	0.401

Source: Singstat.gov.sg, accessed 17 Aug 2018

Extract 6: Guarding against deflation in Singapore

The Monetary Authority of Singapore (MAS) should be ready to adjust its monetary policy further if deflation takes root in the city state, the International Monetary Fund (IMF) said. Consumer prices in Singapore have declined every month since November 2014, the longest slump on record.

Deflation has become a grave concern for economies around the world. While deflation points to deeper structural issues for economies like Japan and Europe, economists say that Singapore has less to worry about as its economy is not suffering from a chronic lack of demand. Singapore's deflationary reading last month was driven by fluctuating COE prices and falling accommodation costs, in addition to lower oil prices. However, the prices of household durables, education, and recreation had been holding up.

Core inflation, that is derived from a consumer basket that excludes the costs of accommodation and private road transport still holds at 1% despite the city-state hitting its 21st month of declines in consumer price index (CPI).

Source: *Business Times*, 10 May 2016

The CPI is calculated using a weighted average of prices for a typical bundle of goods and services purchased by households.

Extract 7: Why deflation is bad

Prices in the eurozone are falling. Figures released on January 7th showed that consumer prices in the year to December fell by 0.2%, marking the return of deflation for the first time since 2009. Weak demand, driven by austerity, debt and a lack of economic growth is dragging down prices. Concerns about deflation traps and downward spirals abound. One common

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explanation is that in anticipation of falling prices, consumers delay purchases, causing them to fall still further.

Source: *The Economist*, 7 Jan 2015

Extract 8: Singapore's monetary policy

Most countries, including the United States and China, adopt an interest rate policy where central banks raise or cut interest rates. Singapore is the only major economy in the world to use the exchange rate, guiding the Singapore dollar higher or lower.

The 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. The MAS has effectively given up control of domestic interest rates. Instead, borrowing costs are largely determined by US interest rates and investors' expectations of the future movement of the Singapore dollar.

Source: *Straits Times*, 13 Oct 2015

Extract 9: Tapping on the Inclusive Growth Programme

As part of the Ministry of Manpower's Lean Enterprise Development Scheme, the Inclusive Growth Programme (IGP) helps businesses develop more efficient processes through automation and re-designing work processes to enhance productivity. Administered by NTUC's Employment and Employability Institute (e2i), the IGP also benefits workers through gains-sharing by companies. Since its launch in 2010, e2i has partnered industry associations and small medium enterprises (SMEs), with a commitment to impact some 105,000 workers with an average wage increase of 18%.

In line with SkillsFuture, the Ministry of Manpower, together with Workforce Singapore, the Ministry of Education and other economic agencies in government, are developing an integrated system of education and training to provide all Singaporeans with the enhanced opportunities to acquire greater skills proficiency, knowledge and expertise. By enabling a highly-skilled and competitive workforce, it has allowed Singaporeans to secure better jobs, higher incomes and enjoy higher standards of living. With the fast pace of technological advancements and stronger global competition for jobs, skills upgrading and deepening are essential for Singaporeans to maintain a competitive edge.

Source: www.mom.gov.sg website, accessed 3 August 2018

Extract 10: Five priorities in achieving inclusive growth

There are ways to implement a fair and progressive fiscal policy to encourage enterprise and innovation without shifting the burden of taxes to the poor or the middle class, said Deputy Prime Minister Tharman Shanmugaratnam. He outlined five priorities in achieving both innovation-driven and inclusive growth.

Tax credits and subsidies for upskilling are another example of a policy that supports equity as well as innovation and growth. It helps workers who face dislocation in the market; it leads to skills accumulation across society; everyone benefits.

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A second priority in tax policy concerns property taxes. It is the most efficient tax; that is, the least damaging to income growth. There is in fact more scope in many of our economies to increase taxes on immovable property: land as well as developed real estate.

A third priority is in ensuring fair subsidies for public services, targeted at those who need it most. Healthcare financing is especially the challenge in more mature societies, and those which are getting older. Fair and targeted subsidies are at the heart of ensuring both social equity and sustainable budgets — and if we don't address this well, we will see taxes go up even more as our societies age.

A fourth priority is to mitigate the regressive feature of consumption taxes (Goods and Services Tax or Value Added Tax). They are efficient taxes, but on their own they hurt the poor more. That's why in most countries we try to offset their impact on the poor.

Fifth, in the same vein of achieving progressivity in our tax systems, a dollar cap on total personal income tax deductions is a useful reform. We have recently instituted this in Singapore. As the OECD (Organisation for Economic Cooperation and Development) points out, those who get the most benefit from some tax allowances are the rich, and in many countries we need a way to cap total tax deductions so as to preserve the progressivity of income tax.

Source: *Today*, 25 July 2016

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Questions

(a)	**(i)**	Compare Singapore's budget balance for 2015-2016 with 2013-2014.	[2]
	(ii)	To what extent can it be concluded from Table 1 that the standard of living in Singapore in 2016 is better than in 2013?	[5]
(b)	**(i)**	With the help of a diagram, explain why Singapore experienced falling consumer prices in 2015 and 2016.	[3]
	(ii)	Explain whether the data suggests that the "slump" in consumer prices (Extract 6) is likely to continue.	[4]
(c)		With reference to Extract 6, suggest how it is possible that overall consumer prices fell despite prices of household durables, education, and recreation holding up.	[3]
(d)	**(i)**	How does the value of the Singapore dollar in 2016 compare to its value in 2013?	[1]
	(ii)	Suppose that deflation takes root in Singapore. Discuss the merits of managing the problem by depreciation, rather than using interest rates.	[8]
(e)		Discuss the reasons why the Singapore government seeks to achieve innovation-driven and inclusive growth.	[7]
(f)		Using the extract and/or your own knowledge, discuss the effectiveness of achieving inclusive growth in Singapore through the use of fiscal policy and supply side policies.	[12]

[Total: 45]

End of paper

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Anderson Junior College
JC2 2018 H1 Economics
Preliminary Examination

Case Study Question 1 – Aging population: Burden or opportunity?

a	**(i)**	**Describe the trend for the health spending in Japan from 2000 – 2017**. Trend: increasing from 2000 – 2017	**1**
	(ii)	**Discuss how far the concept of price elasticity of demand may account for the above trend in health spending.** **P1: The concept of PED may account for the above trend** Shrinking workforce → fall in SS → price increase. As 0 < |PED| < 1 (lack of substitutes) → increase in price will lead to a less than proportionate decrease in quantity demanded → increased in total expenditure → account for the increase in health spending **P2: However, the concept of PED may not account for the above trend** → Limitation of ceteris paribus assumption or PED could actually be more than one (|PED| > 1 due to substitutes available such as robotics) → price increases → increase in price will lead to a more than proportionate decrease in quantity demanded → total expenditure will actually decrease → cannot account for the increase in health spending **In addition, other factors may account for the above trend** Increase in demand due to aging population (Ext 1) → increase demand → equilibrium price and quantity increase → total expenditure increases **EV: Make a stand and justify** E.g., demand factor more significant as population "rapidly greys" (Ext 2) E.g., more information needed, for instance on the PED value **Mark scheme:**	**9**

Level	Knowledge, Application, Understanding and Analysis	Marks
L2	An answer that clearly explains with economic framework on how PED may account for the trend	**4-6**
L1	An descriptive answer with multiple basic conceptual errors on how PED may account for the trend	**1-3**
Evaluative comment		
Up to 3 further marks for an evaluative appraisal of possibly which factor is the main factor		

b		**With reference to data, discuss the likely effects of a shrinking workforce in Japan and technological advancement on the robotics market.**	**8**

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Shrinking workforce (Ext 1) → fall in supply of labour → wages increase
Thus demand for robotics which are substitute for labour will increase (Ext 4: funding development of elder care robots to help fill a projected shortfall of specialised workers) → shift DD curve to the right

Tech advancement → fall in unit COP → more profitable → increase in SS → shift SS curve to the right

P1: increase in DD > increase in SS → equilibrium P and Q increase
It takes time to develop and create robotics suitable for different types of healthcare services, coupled with the aging population. It is likely that increase in demand will outweigh the increase in supply in the SR. Hence, equilibrium price and quantity will increase (Fig 1).

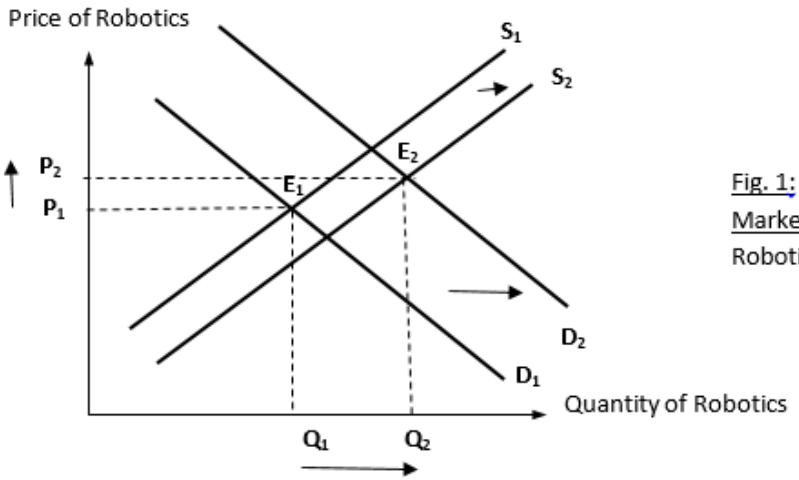

Fig. 1: Market for Robotics

P2: increase in DD < increase in SS → equilibrium P falls, Q increases
Once the technology is fully developed, they may be able to produce more robotics. Hence it is likely that increase in supply will outweigh the increase in demand in the LR. Hence, equilibrium price will decrease while equilibrium quantity will increase (Fig 2).

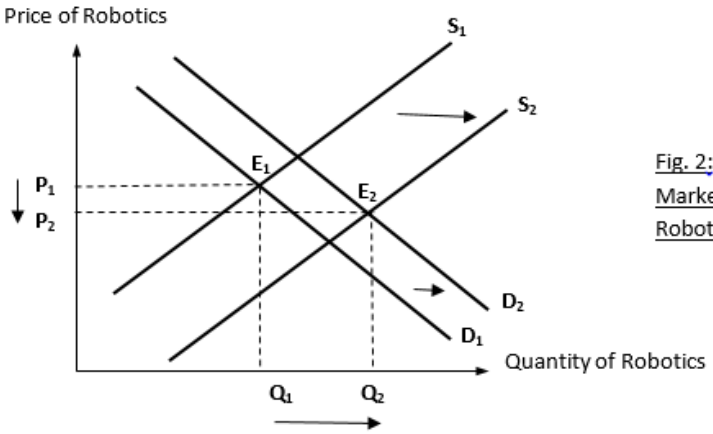

Fig. 2: Market for Robotics

Evaluation
Ext 2: With the rapidly aging population and, as the robotics are seen as a close substitute to the workers, demand for the robotics will increase significantly. However, given the existing technology, supply of robotics is

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unlikely to increase significantly. Hence the increase in demand is still likely to persist and outweigh the increase in supply. Hence, equilibrium price and quantity will increase.

Level	Knowledge, Application, Understanding and Analysis	Marks
L2	An answer that clearly discusses the different impact on the robotics market	**4-6**
L1	An answer that is descriptive without much economic framework linking the factors to the robotics market	**1-3**
Evaluative comment		
Up to 2 further marks for an evaluative appraisal of possibly which factor is the most significant and hence eventual impact on the market		

c — **4**

Explain two possible changes that may occur to the demand curve of healthcare workers given the introduction of robots.

Robots are deemed as substitutes for healthcare workers (Ext 4: development of elder care robots to help fill a projected shortfall of 380,000 specialised workers) → increase in supply of robots causes fall in price of robots → increase in quantity demanded of the robots → fall in demand for the healthcare workers → leftward shift of the demand curve.

With the introduction of robots, there are now more substitutes available, therefore demand for healthcare workers also becomes more price elastic/less price inelastic → demand curve becomes gentler / less steep.

d — **2**

What is the main characteristic of a normative economic statement? Identify one example of such a statement from Extract 3.

A normative economic statement expresses value judgements (opinions) about economic fairness or what the outcome of the economy and policy measure(s) *ought to be*.

One example is "So, Japan's demography, paradoxically, is not an onus, but a bonus".

Other accepted statements:
- "Prime Minister Shinzo Abe said Japan's aging, shrinking population was not a burden, but an incentive to boost productivity through innovations."
- "I have absolutely no worries about Japan's demography."

e — **4**

Is a publicly funded nursing facility an example of a public good? Provide reasons for your answer.

Public goods exhibit both characteristics of non-excludability (NE) and non-rivalry (NR) in consumption.

Excludability → an elderly's consumption of the nursing facility is made contingent on payment, while other individuals who do not pay for the

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		nursing facility can be effectively excluded from enjoying the benefits → can exclude non-payer from staying in the public nursing home **AND** Rivalry in consumption → the consumption of the nursing facility by one elderly reduces the amount of benefit that is available to others. **Conclusion** → since publicly funded nursing facilities do not fulfil characteristics of NE and NR, they are not an example of a public good.	
f	**(i)**	**Explain why the operation of a free market may lead to the under-provision of nursing facilities and how a subsidy can help to address the problem.** In deciding how much nursing facilities to consume, rational consumers will only **weigh their marginal private benefit (MPB) against marginal private cost (MPC)** of consuming nursing facilities in order to **maximise their utility**. The private benefits include the utility gained/ care given, while the private costs include the cost of nursing facilities. Taking these private benefits and private costs into consideration, consumers will then decide to consume nursing facilities **up till Q_e where their MPB = MPC** in order to maximise their utility (Fig 1). In addition, when consuming nursing facilities, **positive externalities** are incurred. Positive externalities are the benefits to third parties that are not taken into account by those who undertake the activity such as lessening the burden on the families who are the third party, higher productivity for the family members as they do not have to take time off to take care of elderly (Ext 5: "shift the responsibility of supporting the elderly away from the families"). Presence of externality leads to a divergence between marginal social benefits (MSB) and MPB. Due to the divergence, **MSB is greater than marginal social cost (MSC) at Q_e, indicating that society values an additional unit of the nursing facilities more than what it would cost society to consume it**. The socially optimum level of nursing facilities is at Q_s, where **MSB is equal to MSC**. As Q_e is at a lower level than Q_s, there is under-consumption of nursing facilities. The price mechanism thus under-allocates resources to the market for nursing facilities, resulting in a net loss of welfare to society, known as **deadweight loss, which is indicated by the shaded area ABE**. Society as a whole could be made better off if the level of nursing facilities were to be increased to the socially efficient level, Q_s.	**7**

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		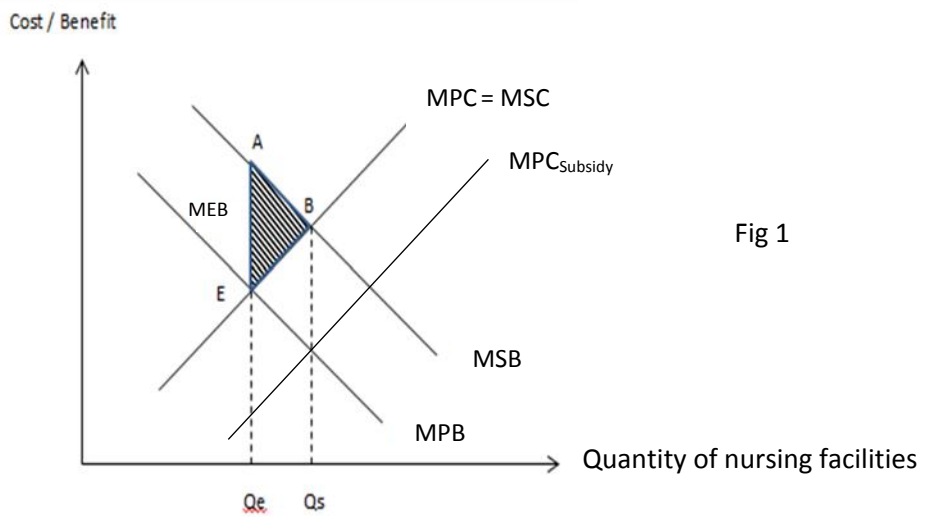 Fig 1 The government can provide a **subsidy which is equal to the marginal external benefit at Qs**. The subsidy causes consumers to internalise the positive externality. The subsidy provided will **lower the cost of consumption**, hence causing **the MPC curve shifts rightwards from MPC to MPC$_{\text{with subsidy}}$.** The socially optimal quantity of nursing facilities, Qs, will thus be consumed. Thus, the subsidy corrects the market failure.	
f	**(ii)**	**Discuss the factors that the Japanese government should consider in allocating resources towards the development of elder care robots.** 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) is equal to marginal social cost (MSC). In deciding how to allocate its resources towards development of robots for elder care, the Japanese government would consider various factors such as its constraints, the benefits and costs from allocating additional units, as well as gather information and consider the perspectives of relevant stakeholders. One factor that the Japanese 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 Japan is facing budget deficit, the amount of resources that they can allocate to the development of elder care robots will be limited. Moreover, it also depends if they have other pressing issue such as worsening of growth which would require them to allocate resources towards, hence fewer resources available for the development of elder care robots. Another factor that the Japanese government needs to consider will be the benefits from the development of elder care robots such as achieving efficiency and equity in the economy. Positive externality could arise due to the consumption of elder care robots such as easing the manpower shortage and promoting higher rates of economic growth as the younger generation would be more able to focus better at work and be more productive once their parents are cared for by these robots, (Ext 4:	**10**

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		"robotics expertise to help cope), resulting in under-consumption of elder care robots. Hence, allocating recourse to the development of elder care robots would help to achieve allocative efficiency. In addition, the development of elder care robots by the government would also ensure that people who require it will be able to access it such as the lower-income elderly, hence achieving equity. Another factor that the Japanese government needs to consider will be the benefits from the development of elder care robots such as achieving economic growth. The government could generate export revenue from the sale of elder care robots (Ext 4: potentially lucrative export industry). With increasing export revenue, net exports will increase, ceteris paribus. Hence aggregate demand will increase, leading to multiplied increase in real national income, hence achieving actual growth. Another factor that the Japanese government needs to consider will be the costs from the development of elder care robots such as the cost of development (Ext 4: high costs, safety issues and doubts). Development of elder care robots will incur high costs such as recruiting the professionals and purchase of high technology material such as microchips. They will also need to spend on research and development to ensure that the robots are safe for usage. Moreover, they will need to increase production for the rapidly aging population. Hence production cost is likely to increase significantly which will be a strain of the budget. In addition, the government will need to consider the opportunity cost incurred. If they were to allocate the resources to the development of elder care robots, it will mean that they have fewer resources available for other areas such as education and healthcare, hence worsening the efficiency in other markets like education. Another factor that the Japanese government needs to consider will be the perspectives of others such as the consumers who are the elderly in this case. Elder care is typically seen as a job which requires a human element (Ext 4: a job typically seen as requiring human touch), and if the consumers are not receptive to this idea, there may be low demand for such elder care robots. In this way, the government should not allocate much resources to this development. On the other hand, there is generally warm reception to robots by many Japanese (Ext 4: "many Japanese see them positively). There may be an increase in demand, and hence the government should be allocating more resources towards the development. Finally, after determining the MSB and MSC, the Japanese government would weigh them to make its decision. It would allocate resources towards developing more robots if the marginal social benefit is greater or at least equal to the marginal social cost as the addition to total benefit is greater than or at least equal to the addition to total cost. This would then allow it to maximise social welfare. **EV: Make a stand and justify** In conclusion the Japanese government makes decisions by considering the factors that affect their costs and benefits and then weigh MSB and MSC to allocate resources to maximise social welfare.	

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The most significant factor may be constraint that the Japanese government is facing. If they are facing a budget deficit or facing more pressing issues such as slow growth, shrinking workforce and tax base (Ext 1), they may want to focus on boosting economic growth first. With economic growth, it will allow them to collect more tax revenue which could then be channelled to developing elder care robots eventually.

The most significant factor would also depend on whether the Japanese government has implemented other policies to improve the economy concurrently. It is very likely that the government may be looking at other macroeconomic stabilisation and growth policies while addressing the issue of an aging population and promoting elder care. This being the case, the most significant factor to consider would then be the perception of the public towards elder care robots or the direct benefits that elder care robots might have on the healthcare sector, rather than unintended positive impacts on the wider economy (because the latter would not be obvious).

Mark scheme:

Level	Knowledge, Application, Understanding and Analysis	Marks
L3	An answer that clearly explains the different factors that a rational manufacturer would have to consider, including the constraints, benefits and costs.	5 – 7
L2	An answer that is descriptive without much economic framework linking the factors to be considered to costs and benefits.	3 – 4
L1	An answer that merely identifies the factors.	1 – 2
Evaluative comment		
Up to 3 marks for an evaluative comment on which factors are the most significant or how the factors may evolve given a change in the external environment, etc.		

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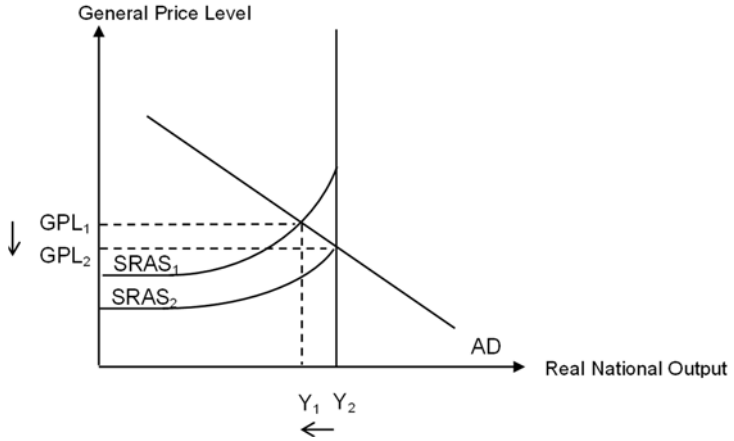
Question 2: Addressing deflation, fostering inclusive growth

(a)	**(i)**	**Compare Singapore's budget balance for 2015-2016 with 2013-2014.**	**[2]**
		Singapore's budget balance was in deficit and the deficit was constant in 2015-2016 whereas the budget balance was in surplus from 2013-2014 and the surplus was decreasing.	
	(ii)	**To what extent can it be concluded from Table 1 that the standard of living in Singapore in 2016 is better than in 2013?**	**[5]**
		Standard of living (SOL) consists of both material and non-material aspects. The material aspect refers to the quantity and quality of goods and services available for consumption whereas the non-material aspect refers to the more intangible aspects of life such as amount of leisure time, quality of the environment etc. **P1: Can be concluded from Table 1 that SOL is better** • Real GDP growth has been positive throughout 2013 to 2016. Assuming that population growth is largely constant and the rate is lower than that of real economic growth, real GDP growth per capita would then also be positive throughout. This suggests that RNY per capita is higher in 2016 than in 2013. With higher purchasing power, the people are able to purchase more goods and services, thus leading to a higher material SOL. • Gini coefficient after government transfers and taxes is lower in 2016 than in 2013, decreasing from 0.409 to 0.401. This implies that inequity has reduced and income distribution has improved. There is more inclusive growth which should allow for higher material SOL. • Life expectancy at birth, as shown in Table 1, is higher in 2016 compared to 2013. Higher life expectancy may indicate greater access to healthcare services and lower levels of environmental pollution, which indicates higher non-material standard of living. **P2: Cannot be concluded from Table 1 that SOL is better** • Lack of information on other indicators for non-material SOL (e.g. level of externalities, literacy rates and leisure hours). • Lack of information such as population growth rate or GDP deflator to accurately determine real GDP per capita for material SOL **Conclusion** • Assuming that population growth rate did not outstrip real economic growth rate, the material SOL in Singapore would have improved. Given that it is likely that the non-material SOL in Singapore has also improved, overall SOL in Singapore in 2016 is better than in 2013 to a large extent.	
(b)	**(i)**	**With the help of a diagram, explain why Singapore experienced falling consumer prices in 2015 and 2016.**	**[3]**
		Lower oil prices (Extract 6) → Fall in COP since oil is a factor of production used across many industries as a main source of energy →	

		Rise in SRAS from $SRAS_1$ to $SRAS_2$ → Fall in GPL from GPL_1 to GPL_2 → Thus Singapore experienced falling consumer prices.  	
	(ii)	**Explain whether the data suggests that the "slump" in consumer prices (Extract 6) is likely to continue.**	**[4]**
		P1: "Slump" in consumer prices is likely to continue • Inflation rate was -0.5% for 2015 and 2016. If oil prices, COE prices and accommodation costs continue to fall, the slump in prices will continue. • Furthermore, deflation causes expectations of future prices to fall, leading to a fall in C and therefore, a fall in AD, causing GPL to fall. The fall in GPL can **spark another round of expectation of future prices falling,** thus causing the slump in prices to **continue.** **P2: "Slump" in consumer prices not likely to continue** • Given that the budget balance was negative from 2015 to 2016, the government may be increasing its expenditure significantly → overall AD increase → GPL likely to increase • Given negative productivity growth from 2015-2016, there may be increase in unit COP → fall in SRAS → GPL increases **Conclusion** "Slump" in consumer prices is unlikely to continue. Extract 6 suggested that the prices of household durables, education and recreation have still been holding up.	
(c)		**With reference to Extract 6, suggest how it is possible that overall consumer prices fell despite prices of household durables, education, and recreation holding up.**	**[3]**
		The CPI is calculated using a **weighted average of prices** for a typical bundle of goods and services purchased by households. Weights are assigned to the basket of goods; COE, accommodation, household durables, education and recreation depending on the share of income spent on each good.	

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		COE prices and accommodation costs have fallen. With the larger weights assigned to them, it will have a greater impact on the overall CPI by a larger extent. As compared to the rise in household durables, education and recreation, they have relatively smaller weights and hence lesser impact on the overall CPI. The fall in CPI due to the fall in COE prices and falling accommodation costs outweighs the rise in household durables, education and recreation. This results in an overall fall in consumer prices despite prices of household durables, education and recreation holding up.	
(d)	**(i)**	**How does the value of the Singapore dollar in 2016 compare to its value in 2013?**	**[1]**
		SGD has depreciated against the USD or value of SGD has fallen against the USD.	
	(ii)	**Suppose that deflation takes root in Singapore. Discuss the merits of managing the problem by depreciation, rather than using interest rates.**	**[8]**
		It is better to manage deflation in Singapore by depreciating the exchange rate as compared to decreasing interest rate because of Singapore's **small size** and **openness to trade & capital flows**. A depreciation of the currency will decrease the foreign price of exports. The lower exchange rate results in a decrease in the foreign price of exports and an increase in the domestic price of imports. In the long run, when firms are not bounded by contracts and are able to switch to cheaper alternatives more easily, |PEDx + PEDm| is likely to be greater than 1 and since MLC holds, **net exports (X-M) will increase**, **reducing deflation.** The Singapore economy is a 'small and open economy' (extract 8); **very reliant on trade and the external economy**. For instance, export revenue (X) takes up approximately 180% of GDP. This shows that a rise in net export revenue will have more significant impact on AD as compared to increase in C or I (brought about by cuts in interest rate). In addition, higher import prices also leads to higher domestic prices. As there is a high import content of domestic demand where 'much of the country's consumer goods are imported' (Extract 8) in Singapore due to her small economy and her lack of natural resources, a higher imported inflation is likely to have a substantial impact on the overall inflation rate Hence, depreciating the exchange rate is more effective to tackle deflation, as it is relatively controllable by the central bank, and has a significant impact on Singapore's small, open economy. On the other hand, it is **not advisable** for the Singapore government to decrease interest rate to tackle the problem of inflation.	

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Firstly, a decrease in interest rate may have **limited effect in inducing investment** as the main types of investment in Singapore are foreign direct investment and government investment. The former is not likely to be affected by domestic interest rate as they may have external sources of funding and other determinants of investment, such as expected rate of return, political stability and quality of the workforce in Singapore, are likely to be more important to foreign investors. The latter tend to consist of long-term projects and hence, it is not likely to be influenced by a decrease in interest rate.

In addition, Singapore being a small economy, her domestic market is small. Therefore, domestic consumption constitute an **insignificant share** of GDP, hence any increase in C is not expected to have a huge impact on reducing inflation.

Because of Singapore's openness to capital flows, it is **difficult for MAS to influence interest rates**. Small changes in the difference between domestic and foreign interest rates can cause large, quick movements of capital. This may have destabilising effects of the exchange rate. Hence interest rates are determined not by the MAS, but by foreign rates and expected movements in the S$. Hence, the Singapore economy is **an interest rate taker.**

However, there are some possible downsides of having a depreciation of the Singapore exchange rate in tackling deflation. As the Marshall-Lerner condition may not hold in the short run (as consumers require time to seek alternatives), a depreciation of the S$ may instead decrease net exports, AD and the general price level. This instead worsens deflation.

Given the Open Economy Trilemma, Singapore cannot have free capital mobility while controlling both interest rates & exchange rate. Since it chooses free capital mobility and a managed exchange rate, it must give up control over interest rates. Given the nature of the Singapore economy, the choice is clear to opt for exchange rate policy instead of interest rate policy. As global oil prices are falling, Singapore is less likely to suffer from imported inflation. Therefore, the merits of choosing a depreciation to curb deflation are significant.

Mark scheme:

Level	Knowledge, Application, Understanding and Analysis	Marks
L2	For an answer with well-balanced approach, sufficiently developed analysis and good reference to case material.	4-6
L1	Very superficial analysis. Mere listing of points. Inaccurate knowledge of concepts. One-sided answer.	1-3
Evaluative comment		
Up to 2 marks for an evaluative comment for evaluative comments with justification.		

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(e)		**Discuss the reasons why the Singapore government seeks to achieve innovation-driven and inclusive growth.**	**[7]**
		Singapore government seeks to achieve innovative driven and inclusive growth as it helps Singapore maintain a competitive edge and helps ensure equity. Inclusive economic growth involves actual growth and potential growth. In addition, it involves government policies to ensure that gains from economic growth are equitably distributed across society. Innovation helps to achieve both actual and potential growth: Process innovation can help improve the quality of resources to improve the production process, hence i**ncreasing productive capacity** of the economy. Thus, LRAS increases, shifting the LRAS curve to the right. Increase productivity → knock on effects → unit COP decreases → increase in SRAS and shift to the right. **Any 2 points with EV** **Reason 1: Innovation-driven and inclusive growth can lead to higher employment and productive efficiency** – Innovation-drive and Inclusive growth means sustainable growth by creating job opportunities for all. This means reducing both demand deficient unemployment and structural unemployment. – An increase in actual growth due to inclusive growth indicates an increase in aggregate demand (AD). In order to meet the increase in AD, firms will have to employ more factors of production including labour. This leads to an increase in demand for labour and a fall in demand deficient unemployment. – In the pursuit of inclusive growth, the government focuses on investing in human capital so as to create opportunities for all segments of the population, reducing structural unemployment. – Extract 10: "It helps workers who face dislocation in the market; it leads to skills accumulation across society; everyone benefits". – The government will also subsidise programmes to upgrade the skills of the workers so as to create a more productive workforce and retrain workers who skills are redundant so that they can take up jobs in other sectors. – By ensuring that there is productive employment for all, this means **that scarce resources are fully utilized**, allowing the economy to operate closer to the maximum output it can achieve, leading to **productive efficiency.** **Reason 2: Innovation-driven and inclusive growth can lead to low inflation** – Innovation-driven and Inclusive growth leads to non-inflationary growth, which includes both actual and potential growth. Inflation refers to a sustained increase in general price level. As inclusive growth focus on the pace of growth, the increase in AD is in tandem with the increase in aggregate supply (AS). As the increase in general price level is now matched with an increase in	

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real national income, inflation rate remains low as there is spare capacity to produce more goods and services in the economy.

– To achieve inclusive growth, the government focuses on policies to increase labour productivity. This will mean a fall in the unit cost of labour, an increase in short-run AS (SRAS), bringing about a fall in wage push inflation in the country.

Reason 3: Innovation-driven and inclusive growth can lead to high standard of living and more equitable distribution of income

- Innovation-driven and inclusive growth helps to create opportunities for all segments of the population and distributes the dividends of increased prosperity, both in monetary and non-monetary terms, fairly across society.
- Economic growth is defined as an increase in Gross Domestic Product (GDP), which is the total monetary value of the final goods and services that is domestically produced within a year.
- An increase in real GDP means more goods and services are produced. At the same time, there is an increase in households' income leading to higher purchasing power and more consumption of goods and services leading to a higher material standard of living.
- By providing training for all Singaporean, there will be "greater skills proficiency, knowledge and expertise". This makes Singapore to be an attractive investment destination and thus attract foreign investment → Higher I → Higher AD→ Higher RNY → higher economic growth.
- With higher economic growth, the government is able to generate more tax revenue. By aiming to achieve inclusive growth, the government is likely to spend more on education subsidies as a means to create productive employment and more on healthcare programs so as to redistribute wealth by making these merit goods more affordable to lower-income households. This contributes to a higher literacy rate and life expectancy, leading to a higher non-material standard of living.
- At the same time, the distribution of increased prosperity means that the standard of living for every individual is likely to increase and the value of the Gini coefficient falls.

Conclusion/EV

- The most important reason for innovation-driven and inclusive growth is to enable a higher SOL for all Singaporeans.
- Due to the nature of SG economy → small and open → labor is our only resources → need to focus on productivity growth to increase SOL across segment → criteria especially productivity growth range from 0 to -1.5% from table 1 → supported by extract 9: "by enabling a highly-skilled and competitive workforce, it has allowed Singaporeans to secure better jobs, higher incomes and enjoy higher standards of living".
- The heart of the Inclusive Growth Programme is to enable a broad-based growth in most sectors, enabling a higher SOL for all citizens.

Or

- Nature of SG economy → small country with tight labor market →

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need to continuously innovate to gain an edge over other countries → to ensure that X stays competitive → and to stay relevant in this era that is filled with technological disruption → so as to achieve export-led growth

- As evident in extract 9 "With the fast pace of technological advancements and stronger global competition for jobs, skills upgrading and deepening are essential for Singaporeans to maintain a competitive edge".

Or

- Singapore has already moved from a phase of rapid catch up growth to a phase of trend growth (predicted to be 2% growth till 2030). Relying solely on adopting technology is no longer sufficient to boost our economic growth. To maintain trend growth, Singapore government must focus on innovation.
-
- Moreover, SG economy → Nation faced a tight labour market so can't increase the size of labour force to boost growth --> besides, also facing ageing population → if nothing is done → Potential growth will decrease → Therefore enhancing productivity through innovation-driven growth → the way to go to ensure a sustained growth for SG.

Mark scheme:

Level	Knowledge, Application, Understanding and Analysis	Marks
L2	For an answer with well-balanced approach, sufficiently developed analysis and good reference to case material.	3-5
L1	Very superficial analysis. Mere listing of points. Inaccurate knowledge of concepts. One-sided answer.	1-2
Evaluative comment		
Up to 2 marks for an evaluative comment on which reasons are the most significant for the Singapore government to achieve innovation-driven and inclusive growth		

(f) **Using the extract and/or your own knowledge, discuss the effectiveness of achieving inclusive growth in Singapore through the use of fiscal policy and supply side policy.** **[12]**

Introduction
Inclusive growth is economic growth that is distributed fairly across society and creates opportunities for all.

How Fiscal Policy works to achieve inclusive growth.
FP → Spending on infrastructure → increase AD → increase RNY (actual growth).
Better infrastructure → increase productivity → increase LRAS → potential growth.
With higher RNY, govt collects more income tax revenue → redistribute to lower income grp in terms of subsidies on healthcare and school education. Extract 10 mentioned providing more targeted subsidies for

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		those who require it most.→ Inclusive growth Based on a progressive tax system, tax revenue generated from the high income earners can be redistributed to those in the lower income earners. **Effectiveness** Correlation between trend in budget balance in Singapore and the Gini coefficient (Table 1). Increasing government spending in terms of education, housing and healthcare subsidies might have resulted in a smaller value of the Gini coefficient, which means a more equitable distribution of income. Also, Gini coefficient after accounting for government transfers & taxes are lower than that of Gini coefficient before government transfers and taxes. This clearly shows that fiscal policy is effective in achieving a more inclusive growth. **Limitations** However, deciding on the right amount of subsidies and how the subsidies should be channelled is administratively costly and will put a further strain on the government budget. Singapore's budget balance was in deficit and the deficit was constant in 2015-2016. **How SS side policies work to achieve inclusive growth** Ss-side policy like tax credits and subsidies for upskilling are another example of a policy that supports equity as well as innovation and growth, as mentioned in the last extract. Upskilling improves productivity → increase LRAS and potential growth. Also, SS side policy helps to reduce occupational immobility of the workers in the sunset industries, low wage workers can now take up jobs in other sectors where wages are higher. Therefore, attending retraining courses will also help low-wage workers receive higher income in future, achieving inclusive growth. **Effectiveness** As shown Table 1, the negative productivity growth rate has fallen in 2016, this implies that existing SS side policies to boost productivity is somewhat effective. **Limitations** However, it is difficult to change the mindset of workers and encourage them to go for retraining. It is also difficult to forecast the future economic needs and hence come up with appropriate and relevant courses. In conclusion, both fiscal and supply-side policies are required to achieve inclusive growth. Fiscal is better and more immediate than SS side policies to reduce income gap but SS side policies solutions are more sustainable. Particularly, supply-side policies such as subsidies for upskilling are the more effective measure to help low-wage workers in the long run. However, sustained effort is needed to continue to promote upskilling as it takes time to change people's mindset. Property and income taxes are still needed nevertheless to provide the budget for the subsidies. *Optional:* *Property taxes mentioned in the last extract also helps to achieve equity*	

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as those who own more expensive property will be required to pay more than those who don't. The tax revenue can also be channelled to other services to promote equity, helping to achieve inclusive growth.

However, there're other issues with this measure as it has been argued that some of those who own large property are asset-rich but cash-poor hence fulfilling property tax payment may be an issue.

Level	Knowledge, Application, Understanding and Analysis	Marks
L3	For a well-developed answer with good scope and depth of how fiscal policy and supply side policies help to achieve inclusive growth in Singapore	6-9
L2	For an underdeveloped answer that contains some analysis of how fiscal policy and supply side policies help to achieve inclusive growth in Singapore	3-5
L1	For an answer that shows some consideration of how inclusive growth can be addressed but answer is lacking in scope and/or rigour.	1-2
Evaluative comment		
Up to 3 marks for an evaluative comment on which policy is the most appropriate for Singapore in achieving inclusive growth		

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CATHOLIC JUNIOR COLLEGE
JC2 Preliminary Examinations
Higher 1

ECONOMICS 8823/01

Paper 1 **20 Aug 2018**

Additional Materials: Writing Paper **3 hours**

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 case study question on a new sheet of paper.

Answer **ALL** questions.

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

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

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Answer **all** questions

Question 1

Sugar – The Sweet Factor

Extract 1: Global sugar production goes into deficit for first time in five years

Sugar is one of the few bright sparks on the global commodity stage at the moment as demand outstrips supply for the first time in five years. Globally, the crop is forecast to fall into deficit, down by 5.2 million tonnes of sugar on last season to 177.5 million tonnes, a deficit of 4.1 million tonnes. It is expected to deliver more sustainable profits to growers. Analysts are predicting a deficit over the next two seasons which will boost values, just months after the raw sugar price fell to about 10 cents a pound for the first time in almost a decade, a value below the cost of production.

Tom McNeill from Green Pool Commodities said weather conditions and poor investment in major growing regions were bringing down the global crop. "We saw far too much rain in Brazil and that slowed the harvest and also reduced the sugar content." Brazil is the world's largest sugar producer and exporter. Now, the global deficit was expected to push sugar prices to sustainable levels for farmers and millers. Analysts are also predicting a jump in sugar consumption, predominantly from the rising middle class in emerging economies, but Mr. McNeil assured the sugar shortfall would not lead to a shortage for shoppers.

Source: Adapted from *Australian Broadcasting Corporation*, 1 February 2016

Table 1: Sugar Historical Quarterly Price Index (Base year = Jan 2015)

Mar-15	85.29	Mar-16	100.00
Jun-15	79.41	Jun-16	126.47
Sep-15	76.47	Sep-16	138.24
Dec-15	94.12	Dec-16	120.59

Source: *International Sugar Agreement (ISA),* accessed 10 July 2018

Extract 2: Global sugar deficit to squeeze Brazil ethanol output

Brazil's ethanol production should fall in the next three years if projections for growing global sugar deficits are confirmed, said analysts. Analysts estimate ethanol production will fall to as low as 23.1 billion litres in the 2019/20 crop year, while sugar output would climb to 43.5 million tonnes, as more farmers switch their production from ethanol to sugar.

"The difference in earnings for mills between ethanol and sugar is big and in favour of sugar, and it seems that it will only get bigger," said Willian Hernandes, head of analysis. Mr Hernandes estimates that sugar offers mills more than 30 percent bigger returns compared with ethanol. This is fueled by the global sugar supply deficits which vary greatly among analysts' estimates, but most see shortages between 4 million and 8 million tonnes for the next two years at least, depending on the reaction from producing countries going forward.

Source: Adapted from *Reuters*, 29 June 2016

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Extract 3: Price ceiling on sugar

To keep food prices and the inflation rate under control, the Thai government has been maintaining a price ceiling for sugar, with the retail price fixed at 23.50 baht per kilogram. The price ceiling results in sugar shortages as profiteers normally smuggle domestic sugar to sell in neighbouring countries, especially when global sugar prices rise above the fixed domestic retail price.

It is also important to never forget the basic concepts of economics that tell us why price controls often do not work as an economic policy. The basic economics of supply and demand predicts "excess demand" which is another way of saying "shortage" when the price is set artificially below the "market clearing price" where supply equals demand.

Source: *Bangkok Post*, 19 September 2016

Extract 4: Can eating too much sugar cause type 2 diabetes?

New research by scientists suggests that consuming too much dietary sugar could set off a process in the body that leads to prediabetes and type 2 diabetes. Study author Dr. Mark Herman said that the study, conducted in mice and human liver samples, revealed a specific mechanism that shows that consuming large amounts of sugar, especially fructose, appears to be a trigger. Fructose is commonly used as a sweetener but it also occurs naturally in fruits, vegetables and honey.

Diabetes is a chronic condition that affects the way the body metabolizes sugar (glucose), a key source of fuel for the body. In type 2 diabetes, the body resists the effects of insulin – a hormone that regulates the movement of sugar into cells – and it doesn't make enough insulin, causing glucose levels to go awry. This ill-effect often leads to a fall in work productivity in diabetic patients, and even disability and death in serious cases.

Source: Adapted from *CBS News*, 29 September 2016

Extract 5: Sugar tax would cut childhood obesity

"Sugary drinks tax will benefit children most," BBC News reports. A new study, where researchers tried to estimate the impact of a sugar tax on soft drinks, found that it would help combat child obesity as well as tooth decay. A proposed UK sugar tax on soft drinks is expected to be introduced in 2018. By modelling three scenarios, the researchers found that the maximum health benefits would be seen if products were changed to contain less sugar. This option was estimated to help reduce obesity cases in the UK by around 150,000 per year, as well as reducing cases of tooth decay by 250,000.

However, these are estimates only, not certain effects. And changing the sugar content of sweetened drinks could only have such an effect on those who continue to consume high amounts of sugar through other dietary sources. Mr. Gavin Partington of the British Soft Drinks Association said, "The problem with this modelling is that it is based on the flawed concept that obesity can simply be attributed to calorie or sugar intake per se and consumption of one product in particular, rather than overall lifestyle and diet." He went on to say: "This error is plain to see given that sugar intake from soft drinks has been declining for several years now, down 17% since 2012. There is no evidence worldwide that a tax on soft drinks has had an impact on levels of obesity."

Source: *National Health Service*, 16 December 2016

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Questions

(a)	**(i)**	With reference to Table 1, describe the trend in the price of sugar between January 2015 and December 2016.	**[2]**
	(ii)	With reference to Extract 1 and using a demand and supply diagram, explain the changes in the price of sugar in 2016.	**[5]**
(b)		To what extent is the global deficit in sugar likely to lead to an improvement in standard of living of sugar growers in Brazil?	**[7]**
(c)	**(i)**	With reference to Extract 2, explain the relationship between sugar and ethanol.	**[2]**
	(ii)	Using the marginalist principle, explain why a grower may decide to switch from ethanol to sugar production.	**[4]**
(d)		Using Extract 3, discuss if the benefits of implementing the price ceiling on sugar outweigh the costs.	**[8]**
(e)	**(i)**	With reference to Extract 4 and using a diagram, explain the economic case for the imposition of a sugar tax to curb obesity.	**[5]**
	(ii)	Using evidence from the case study and/or your own knowledge, discuss the factors that a government should consider in implementing a sugar tax to tackle obesity.	**[12]**

[Total: 45]

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Question 2

Economic Performances Around the World

Table 2: Growth in real gross domestic product (GDP): % change per annum

	2010	2011	2012	2013	2014	2015
China	10.4	9.3	7.7	7.7	7.4	6.9
United Kingdom	1.7	1.1	0.3	1.7	3.2	2.2
Singapore	15.2	6.4	4.1	5.1	3.9	1.9

Source: *International Monetary Fund:* World Economic Outlook Database

Extract 6: UK inflation is negative again, but what does this mean for consumers?

For the second month running, the UK's headline figure for inflation – the rate of increase in prices for goods and services – is negative. In October, prices were 0.1% lower than a year ago – the first time ever that the consumer prices index (CPI) has fallen in two consecutive months.

Opinion is split among economists as to the causes of this deflation and its implications for the economy. Paul Hollingsworth, a UK economist, takes the view that the mild deflation seen in recent months is essentially good, driven by lower energy prices, rather than symptomatic of weakness in the domestic economy. "It is good because it boosts households' purchasing power and lowers firms' day-to-day running costs," he says.

In contrast, economist Professor Steve Keen from Kingston University believes even mild deflation is bad news. "Deflation is only benign — or even beneficial — in a world in which no one has any debt."

Keen is convinced deflation will be here for decades, just like in Japan. And he predicts that we are headed for full-blown deflation if the government follows the path of austerity. "On current policy settings, I'd say it's guaranteed, but it won't be a runaway process," he says. "Instead, it will taper to a level in the zero to -2% range. This again has been Japan's experience. Some mild inflation has resulted whenever the government has run a fiscal stimulus, only to peter out back into deflation when the stimulus was removed."

Both agree that a prolonged period of deflation would be bad news for the economy. Hollingsworth says it could alter households' inflation expectations as well as firms' investment decisions.

Keen also stresses that with UK firms and households carrying a lot of debt (175% of gross domestic product), "households and firms will be reluctant to finance any new spending with new credit, so investment in particular will slow down as will economic growth."

Source: Adapted from *The Guardian*, 17 Nov 2015

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Extract 7: Monetary Authority of Singapore sets zero appreciation path for Sing dollar with switch to neutral policy stance

The central bank will set the rate of Singapore dollar's appreciation to zero per cent, in a move to support economic growth against a dimmer global economic outlook since its last meeting. Singapore's growth was just 0.2 per cent in the first quarter of 2016.

The Monetary Authority of Singapore (MAS), which uses the currency rather than interest rates to guide the economy, said: "This stance removes the modest and gradual appreciation path of the S$NEER policy band that was in place." This will help to prevent export prices from rising and achieve similar effects as a depreciation.

The shift to a "neutral policy stance" is a departure from the policy of modest and gradual S$NEER appreciation that the MAS had adopted since April 2010, after the last financial crisis. The Singapore dollar nominal effective exchange rate, or S$NEER, is a trade-weighted exchange rate in which the currencies of Singapore's larger trading partners bear more weight.

The central bank adjusts the pace of appreciation or depreciation of the Singdollar by changing the slope, width or centre of the band. It does not disclose details of the basket, the band, and the pace of appreciation or depreciation.

Most key economies, except for the US, are expected to see similar or slower growth in the second half of the year as compared to the first half. Singapore's expected growth is 1 to 2 percent for this year in view of the weaker global outlook.

Source: Adapted from *The Straits Times*, 14 April 2016 & 11 August 2016

Extract 8: Five future challenges for Singapore economy

The challenge of moving the Singapore economy up the innovation ladder, from being one that is "value-adding" to a "value-creating" one, will be a key focus of the team set up to chart the Republic's economic direction.

Finance Minister Heng Swee Keat, who will chair The Future Economy committee, framed Singapore's challenges through the lens of the "five futures" - of jobs, of companies, of technology, of resources and of markets.

On jobs, Mr Heng noted that "it may not be immediate but if we look at a 10-, 15-year timeframe, the nature of jobs will change".

With 3D-printing and additive manufacturing changing how factories are being configured, Mr Heng said, "How do we build skills and redesign jobs so that workers can be at their best and that talent can be maximised?"

A second key challenge is that the "future of companies" will be marked by the rise of disruptive business models and competition from abroad. So staying competitive means exploring "cooperative platforms" for different business clusters to cooperate with one another and maximise capabilities.

Technology undeniably presents a challenge and, while Singapore has invested heavily in education, research and development, the "future of technology" hinges on how this can be translated into innovative processes.

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But not all innovations are technology-related and another challenge, the "future of resources", looks at how to organise one's resources like land or staff in creative and competitive ways, Mr Heng added.

A fifth area, the "future of markets", is important because if firms expand overseas, "we transcend the Singapore market, we achieve scale".

The formation of this committee was announced by Prime Minister Lee Hsien Loong as Singapore faces a leaner workforce, tapering growth and a weaker global economy. This is compounded by the problem of Singapore's ageing population which is usually an existential angst for Singapore. As of June 2016, 13.7% of citizens were aged 65 and above, compared with 9.2% 10 years ago. There are now 4.7 working age citizens for every citizen aged 65 and older, compared with 6.9% in 2009. If birth and immigration rate remains the same, the numbers will half to 2.3 in 2030. This situation is a "demographic time bomb" with implication on costs, taxes, labour and productivity.

The team will measure success by the opportunities and jobs it creates for Singaporeans, since a shift to higher skills indirectly addresses productivity issues. "Higher skills, higher productivity, higher wages - that is the virtuous circle that we hope to achieve."

Source: Adapted from *The Straits Times*, 29 October 2015 & 29 September 2016

Questions:

(a)	**(i)**	Compare the growth in real GDP of China, United Kingdom and Singapore between 2010 and 2014.	**[3]**
	(ii)	Explain **two** possible factors influencing the growth in real GDP of China as seen in Table 2.	**[4]**
(b)	**(i)**	Explain the conflict between inflation and unemployment.	**[2]**
	(ii)	Discuss whether continued deflation in the UK is a cause for concern to UK households and firms.	**[8]**
(c)	**(i)**	"The MAS uses the currency rather than interest rate to guide the economy." Explain this statement.	**[5]**
	(ii)	Explain and comment on the central bank's decision to set a zero appreciation path for the Singapore dollar.	**[7]**
(d)		Explain **two** possible causes of productivity issues in Singapore.	**[4]**
(e)		Discuss whether the proposed approach of the Future Economy Committee is the only way for Singapore to cope with the challenges of "a less favourable external environment" (Extract 7) and the need to "move up the innovation ladder" (Extract 8).	**[12]**

[Total: 45]

[END OF PAPER]

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2018 CJC H1 Prelim

CSQ 1 Answers

Suggested Answers:

(a) (i) With reference to Table 1, describe the trend in the price of sugar between January 2015 and December 2016. [2]

General Trend: Increasing trend of the price of sugar from January 2015 to December 2016. [1]

Refinement: Sharp fall in the price of sugar from Jan to Mar 2015 OR Sharp rise in the price of sugar from Mar to Jun 2016 OR Sep to Dec 2016. [1]

(ii) With reference to Extract 1 and using a demand and supply diagram, explain the price changes of sugar in 2016. [5]

2 Possible Approaches:
Approach 1: Price increased from Jan to Sep 2016, price fell from Sep to Dec 2016 (explain using DD/SS shifts)
Approach 2: Price increased from Jan to Sep 2016 (explain using DD/SS shifts), Sharp increase from Mar to Jun 2016 (explain using PED/PES analysis)

Increase in Price from Jan – Sep 2016 [3m]
Increase in DD due to rise in income of middle class from emerging economies, assuming sugar is a normal good. [1]
Fall in SS due to adverse weather conditions in Brazil (El Nino) [1]
Simultaneous shift = shortage at P_e, leading to rise in Equilibrium Price + Diagram [1]
Other accepted answers: Increase in current DD due to consumers' expectations of higher future sugar prices.

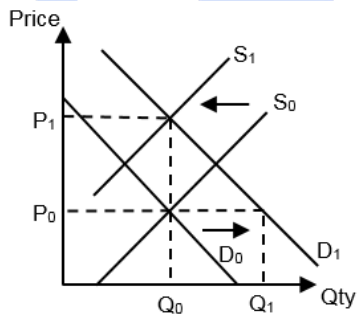


Fig 1: Increase in Price of Sugar [1]

Approach 1: Fall in Price from Sep – Dec 2016 [2m]
Increase in SS due to producers' expectations of more sustainable profit [1], ceteris paribus, the sugar price will fall in certain periods when there is a surplus at the P_e. [1]
Approach 2: Sharp Rise in Price from Mar – June 2016 [2m]
Given a fall in SS, PED is inelastic due to lack of close substitutes for sugar [1], it will lead a sharp increase in price. [1] OR
Given an increase in DD, PES is inelastic due to lack of spare capacity

/ lengthy period of harvest [1], thus, price of sugar will increase sharply. [1]

(b) To what extent is the global deficit in sugar likely to lead to an improvement in standard of living of sugar growers in Brazil. [7]

Standard of living measures the welfare of the average citizen in an economy and it consists of both the material and non-material aspects. Material SOL considers the quantity of goods and services consumed by an average citizen while non-material SOL reflects the qualitative aspect of life such as the life expectancy and level of education.

Thesis: The deficit in sugar will improve the SOL of growers in Brazil

PED of Sugar likely to be less than 1, given the lack of close substitutes. Thus, a global deficit in sugar market will increase price, leading to a less than proportionate fall in quantity demanded of sugar, increasing the TR of sugar growers. Profits = TR – TC, assuming TC stays constant, profits will increase for sugar growers. The increase in profits will thus increase the disposable income of the growers and this will increase their purchasing power and ability in the consumption of more goods and services. The material SOL of growers will increase.

Anti-thesis: The deficit in sugar will not improve the SOL of growers in Brazil

Also, there is a lack of data on the non-material SOL of growers. Growers might be incentivized to work longer hours to reap greater profits from sugar production, thus this will increase the stress level and reduce amount of leisure hours to be enjoyed. Thus, the non-material SOL of growers might worsen due to the deficit in sugar.

Given the PED value of sugar, the price of the commodity is subjected to large fluctuations in the free market. This is due to supply shocks such as the adverse weather conditions / government interventions via the use of indirect subsidy. When the price of sugar falls given an increase in supply in the medium/long term, the TR and profits for growers will fall and this will reduce the material SOL of growers.

Other possible considerations: Negative externalities in production, If PED > 1 due to availability of close substitute (natural or artificial sweeteners), thus TR will fall.

Synthesis

Stand and Substantiation: The extent of effect on SOL depends on the net effect between material and non-material aspects, as well as whether the profits of sugar growers can be sustained in the long run, as changes in total costs is uncertain. It may actually increase with bad weather conditions making farming more difficult and time consuming.

Level	Descriptors	Marks
L1	Considered superficially the impact on SOL. Answer is one-sided - considers positive OR negative impact on SOL. Answer contained inaccuracies and/or lack economic analysis.	1-3
L2	Provided a balanced argument by considering both the positive and negative impact on SOL. Max 4m – 2-sided analysis of mSOL / nmSOL is being considered. Max 5m – For a balanced argument that lacks case evidence as support. High L2 should consider both material and non-material SOL.	4-6
EV	Provided a well reasons stand by considering possible perspectives of: (1) Weighing of mSOL and nmSOL (2) Sustainability of profits in the LR	Up to further 1m

(c) (i) With reference to Extract 2, explain the relationship between sugar and ethanol. [2]

Sugar and ethanol are competitive in supply as seen in extract 2, when production of sugar rises, that of ethanol falls [1] as they both require the same factor inputs / resources (land, labour etc) in production. [1]

(ii) Using the marginalist principle, explain why a grower decides to switch from ethanol to sugar production. [4]

<u>Step 1: Explain Marginalist Principle [1m]:</u>
Assume growers are rational profit maximisers - Weigh the Marginal Benefit (MB) against the Marginal Cost (MC) in making rational decisions, maximise profit when MC = MB. [1]
If MB>MC, farmers will continue to grow the additional unit of crops. If MB<MC, farmers will cut back on their production of an additional unit of crops. They will stop only when MB=MC of growing crops.

<u>Step 2: Give examples of MB and MC (1m each):</u>
Ethanol or Sugar POV:
MB of ethanol/sugar production: price of ethanol/sugar and thus <u>additional revenue</u> farmers can earn from the <u>sale of an additional unit</u> of ethanol/sugar. [1m]
MC of ethanol/sugar production: <u>additional cost</u> of growing an <u>additional unit</u> ethanol/sugar, for example additional rent on land [1m]
<u>Step 3: Explain the decision to switch (1m):</u>
Ethanol POV:
Price of sugar is rising due to the deficit → thus opportunity cost of producing ethanol, and not producing sugar, is rising
This means for ethanol producers MC > MB → they stop ethanol production and switch to sugar production until <u>new MC = new MB</u>

<u>OR</u>

Sugar POV:

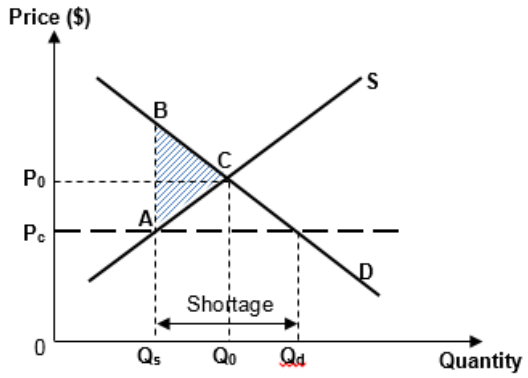
Price of each additional unit of sugar is rising due to deficit → additional revenue is rising
As MB > MC for sugar production → more farmers will switch to producing more sugar until new MB = new MC.

(d) Using Extract 3, discuss if the benefits of implementing the price ceiling on sugar outweigh the costs. [8]

Intro:
An effective price ceiling is a legally established maximum price below the market equilibrium price. The price ceiling aim to keep the price of sugar low to benefit consumers in Thailand.

To determine whether the decision to implement the price ceiling is justified, a weighing of the costs and benefits will be taken.

Thesis: Benefit of Price Ceiling – Lower Price for certain consumers



When the price ceiling (P_c) is imposed, this will lead to a lower price than the original price P_0, and benefit certain consumers (lower income group) as it will make sugar more affordable than before. This might improve equity in terms of resource allocation.

But this is based on the assumption that the consumers will be able to have access to the lower-priced sugar as there is a shortage, since at price P_c, quantity demand (Q_d) exceeds quantity supply (Q_s).

When a shortage is experienced, the commodity would have to be allocated on a first-come-first served basis via rationing, by either producer's preferences or through government's preference.

Anti-thesis 1: Costs of Price Ceiling – Deadweight Loss

But since the price ceiling is a legally established price, sellers cannot sell above this price (P_c). Hence the shortage cannot be eliminated in the market.

Since only Q_s is traded in the market.as a result of the price ceiling, a welfare loss is created. The welfare loss is represented by the Area ABC.

Hence, when there is a price ceiling and only Q_s is traded, welfare is not maximized. Marginal Benefit exceeds Marginal Cost for every unit of product that was not consumed from Q_s to Q_o. Welfare could have been

higher if these units were consumed. Hence the shaded area represents the welfare loss).

Anti-thesis 2: Costs of Price Ceiling – Black Market

A 'black market' where purchases occur illegally at a price higher than the maximum price of P_c could result from the shortage. In extreme cases, the prices could rise higher than the original free market price, which render the government intervention ineffective as resource allocation is worsened.

Anti-thesis 3: Costs of Price Ceiling - Illegal sale of sugar overseas

Extract 3: "profiteers normally smuggle domestic sugar to sell in neighbouring countries, especially when global sugar prices rise above the fixed domestic retail price". Due to profit motive, there will be less sugar available for sale in Thailand as producers sell their sugar overseas at higher prices. This will worsen the shortage situation.

Synthesis:

Stand + Substantiation: As the costs of intervention is higher than benefits, the decision to implement the price ceiling is not justified. The intended consequence of a lower sugar price for consumers might be compromised due to the rise of black market as well.

Level	Descriptors	Marks
L1	Considered superficially the impact (costs vs benefits) of price ceiling on the consumers, producers and society. Answer contained inaccuracies and/or lack economic analysis.	1-3
L2	Provided a balanced argument by considering the impact (costs vs benefits) of the price ceiling on the consumers, producers and society.	4-6
EV	Provided a well reasons stand by considering possible perspectives of: (1) Government priorities between equity and efficiency (2) Sustainability of the policy in the long run	Up to further 2m

(e) (i) With reference to Extract 4 and using a diagram, explain the economic case for the imposition of a sugar tax to curb obesity. [5]

Consumption of sugar generates negative externalities [1m], thus leading to an inefficient allocation of resources in the free market.

MEC of overconsumption of sugar lead to obesity, which will reduce the productivity and thus reduce economic competitiveness and lower economic growth of a country. [1m]

As the social optimum output is less than free market equilibrium, there is an overconsumption of sugar. [1m]

Since the MSC exceeds MSB over the range of overconsumed quantities, there is a deadweight loss incurred on the society, thus societal welfare is not maximized. [1m]

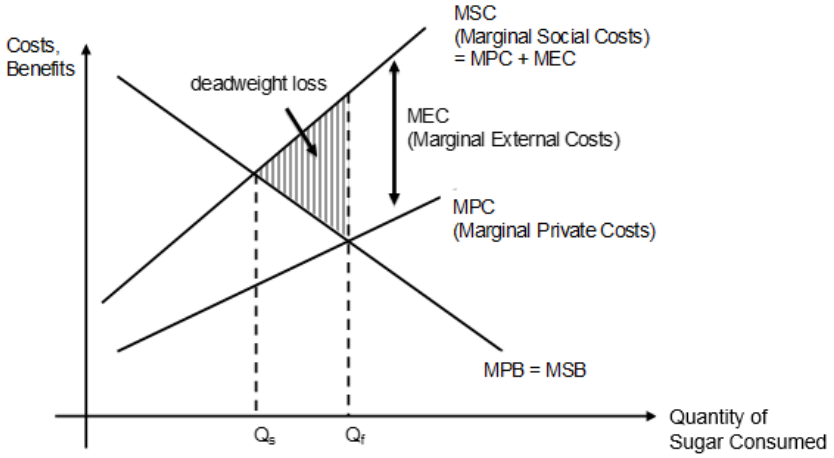


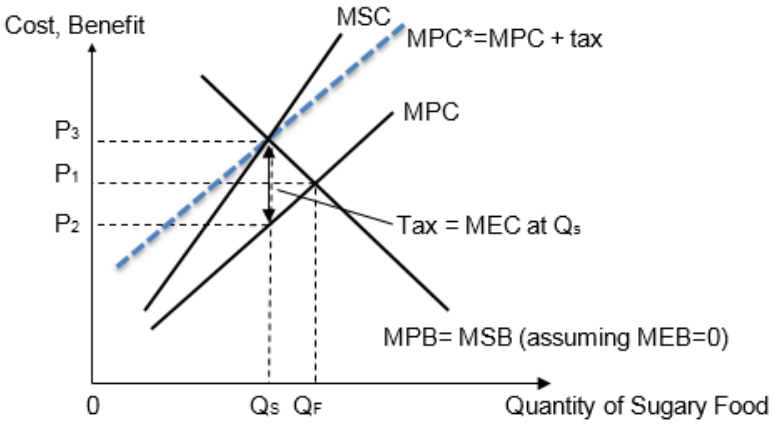
Diagram [1]

Note: Overconsumption due to imperfect information is <u>not relevant</u> to the question as the justification is for the use of Pigouvian tax.

(ii) Using evidence from the case study and/or your own knowledge, discuss the government's considerations in implementing a sugar tax to tackle obesity. [12]

Intro:
Use of tax is to achieve Qs in the market of sugary drinks.
In the decision to use tax to tackle obesity, the government will need to consider various factors in order to achieve its intended outcomes.

Consideration 1: Weighing Benefits versus Costs
Benefits: Tax is effective in achieving Qs



As seen in Extract 5, the sugar tax "would help combat child obesity as well as tooth decay". A tax equal to the <u>marginal external cost at Q_s</u> (P_2P_3 per unit) is imposed by the government. There is internalisation of the externality, i.e. a tax makes the private firm/consumer take into account the negative externality in their decision making. This causes the consumer's new MPC to shift up

to MPC*. As a result of this, the consumer consumes sugary food until its new MPC = MPC*=MPB, i.e. at Q_s. The allocative efficient output level Q_S is achieved and the deadweight loss is eliminated. There is also a change in prices in the market. The equilibrium price was initally at P_1 but the new price is P_3.

Besides being a market oriented tool, the tax revenue can also be used to fund other policies (public education or subsidy for healthy food).

Costs: The demand sugary drinks is likelyu to be very price inelastic due to the addictive nature of consumption. Thus, the tax to reduce over-consumption is ineffective unless the tax is very high. And as seen in Extract 5, "sugar intake from soft drinks has been declining for several years now, down 17% since 2012. There is no evidence worldwide that a tax on soft drinks has had an impact on levels of obesity". The tax on sugary drinks might not be addressing the root causes of obesity, which might be other food sources (high-fat content) or a lack of exercise.

Consideration 2: Constraints faced by government
Due to the finite budget available, the government will need to consider the monetary and opportunity costs of implementing a tax (implementation and monitoring costs etc)
Dependent on the severity of the issue, time will also be a constraint in meeting the intention of the government intervention. Tax policy can be considered relatively swift as compared to public education, which takes a long time to influence the mindsets and habits of consumers.

Consideration 3: Information available and accuracy/reliability of data
Effectiveness of tax depends on the accurate evaluation of MEC @ Qs, which in reality, will be impossible to assess for different individuals under different contexts. Reliability of data will also be a problem. Accurate information pertaining to costs / benefits of implementation will also aid in the decision-making process. Data on the main source of obesity (need not be from sugary drinks consumption) will also ensure if the government is targeting the root of the issue.

Consideration 4: Other policies available
Use of regulation or public education in achieving Qs – set quota on the amount of sugar content in sugary drinks; increase awareness of the actual cost and 3rd party cost of consumption of sugary drinks.
Counter-Argument:
Regulations: Penalties imposed must be hefty enough to deter violations – such that only occasional checks are necessary to ensure that regulations are being followed by sugary food producers. If penalties are not severe enough, more frequent checks by the regulatory authority would be required and this may raise the costs of monitoring. Society gains only if the benefits outweigh the costs of implementation.
Public education: The effectiveness of persuasion is not certain since they are voluntary. It depends on how receptive people are to the campaigns and education. High costs involved in education, e.g. the advertising costs in carrying out campaigns. These costs

are likely to be borne by taxpayers. Difficult to gauge the success or to ascertain the factors leading to a change in the consumption habits.

Consideration 5: Perspectives of stakeholders
Government should also consider the impact of the tax on consumers: PED >1 due to habit forming nature, thus ineffective in reducing the consumption of sugary drinks. Total expenditure will also increase for consumers, which might worsen income inequity and SOL of the lower income group, especially since their diet consists of largely cheaper processed food that is high in sugar and fat.
For producers, the extent of impact on profit margin due to the increase in COP via tax. Negatively affects the income and SOL of producers.

Synthesis:
Stand: You can consider choosing the most important factor
Effectiveness of the policy is likely to be the most important consideration of the govt. in implementing a sugar tax.
Substantiation:
This is because govt. intervention will be wasteful, in terms of implementation and monitoring costs if the policy is unable to achieve its intended outcome.
While in the long run, govt. can consider availability of other policies to better tackle obesity, in the short run the effectiveness and immediacy of tax may become more of a priority.

Level	Descriptors	Marks
L1	Smattering of valid points or merely explanation of how 1 point of view in the decision-making process corrects the market failure without use of case evidence	1-2
L2	An answer that explains the costs and benefits of tax and at least one other point of view in the decision-making process. However, tax policy may be under developed and not linked to how the market failure is corrected. Some use of case evidence. TBC: Max 5 marks for a well-developed 2-sided analysis of tax in correcting the market failure with use of case evidence (No link to Question on DM Framework)	3-5
L3	Well-developed analysis of costs and benefits of tax and 2 other points of view 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
EV	Stand with economic justification. This should focus on the weighing of various points of views in arriving at the	Up to 3 marks

	most optimal decision by the government.	

CJC

CSQ 2 Answers

a) (i) Compare the trend of growth in real GDP of China, United Kingdom and Singapore between 2010 and 2014. [3]

Suggested Answer:
Any 3 of the following:

- Both growth in real GDP of China and Singapore have fallen whereas UK's has improved.
- In general, China's growth in real GDP is higher than UK and Singapore, other than in 2010.
- UK's growth in real GDP is lowest among the 3 countries.
- All positive growth rates

a) (ii) Explain **two** possible factors influencing the growth in real GDP of China as seen in Table 2. [4]

Suggested Answer:
Background: There is growth in real GDP of China but it is slowing down.
Hence answer must show AD continuing to rise but at a slower rate.

Factor 1:
Assuming all other components of AD could be rising, but one of the following may be falling:

- C is falling due to a fall in consumer confidence
- I is falling due to business pessimism
- (X-M) is falling as X revenue is falling due to the emergence of other overseas competitors; Exports declining because China is moving from a manufacturing and export-driven economy to a service and domestically-driven one.
- Cut back on government spending, hence G is falling.

Other factors:

- Assume that the components of AD may be rising but at a slower rate.
- It depends on the state of the economy i.e. where AD cuts AS curve

b) (i) Explain the conflict between inflation and unemployment. [2]

Suggested Answer:
Inflation and unemployment are inversely related [1]
Explanation using AD/AS.[1]

- Type of inflation → Demand pull inflation caused by rapidly rising AD (excessive economic growth)
- Type of unemployment → cyclical unemployment caused by fall in AD (recession)

AD/AS diagram is not required.

b) (ii) Discuss whether continued deflation in the UK is a cause for concern to the UK households and firms. [8]

Suggested Answer:

Define deflation as a persistent fall in general price level.

Thesis: Continued deflation is a concern in the UK

- **Delayed spending** that may worsen and bring on a recession. People may delay their spending in anticipation of lower prices in the future. Hence when C falls, AD falls and NY falls to below Yf. Evidence in extract 1 where Hollingsworth says it could alter households' inflation expectations as well as firms' investment decisions.

- Lower future profits may lead to a **fall in in investment**, bring on a recession. Lower prices & delayed spending may affect the revenue of firms, hence their profits in the future. Together with less certainty, firms may also delay their investment decisions. Hence when I falls, AD falls and NY falls to below Yf. Evidence in extract 1 where Hollingsworth says it could alter households' inflation expectations as well as firms' investment decisions.

- During deflation, **borrowers lose** as the value of debt is higher. Greater burden on UK households and firms. Evidence from Extract 1, "UK households and firms carrying a lot of debt"

Anti-thesis: Continued deflation is not a cause for concern in the UK

- Mild deflation may increase real wages. Given constant nominal wages, a fall in prices may benefit workers with a fixed wage as they will be able to purchase more goods and services given the same level of income. Purchasing power increased.
- Not a case of concern (Evidence extract 1 "mild deflation is essential good… if driven by lower energy prices, boosting household purchasing power and lower firms' day-to-day running costs"

Synthesis:

- Deflation in the UK is likely a source of concern as it often returns once the stimulus is removed, indicating that that fall in AD is more deep rooted. Furthermore, the debt situation has worsened the problem as confidence levels drop and firms and households alike delay spending and investments.

Level	***Descriptors***	***Marks***
L2	*Provided a balanced argument by looking at both positive and negative impacts on households and firms.*	*4 – 6*
L1	*Considered superficially the impact of deflation on households and firms. Answer contains inaccuracies and/or lack of economic analysis.* *Max 3m for one-sided argument.*	*1 – 3*
EV	*Provided a stand as to whether the deflation experienced by the UK is a cause of concern or not. Justified stand by considering at least one criteria, ie, whether deflation is mild or severe, the extent of deflation, the root cause of deflation etc. Considered the significance of the impact on households and firms.*	*Up to further 2m*

c) (i) "The MAS uses the currency rather than interest rate to guide the economy." Explain this statement. [5]

Suggested Answer:
Open Economy trilemma – can only control 1 or 2 but not all 3 [1]
Explain SG's choice to use exchange rate instead of interest rate due to characteristics of economy

1) Small and hence dependent on trade – use exchange rate to influence (X-M) which is more significant to drive Sg's EG [2]
2) Open and hence interest rate taker – if SG offers a relatively higher i/r than other countries → inflow of hot money which will increase domestic money ss and cause i/r to fall. Therefore MAS cannot influence i/r. [2]
3) Due to free capital mobility, if there is a fall in i/r, it will lead to outflow of hot money → increase in supply/fall in dd for S$ → leading to depreciation which goes against MAS stance of gradual appreciation.

Ans must have points 1 & 2 OR points 1 & 3.

c) (ii) Explain and comment on the central bank's decision to set a zero appreciation path for the Singapore dollar. [7]

Suggested Answer:
Explain MAS' decision to use zero appreciation path: [4m]
Identify macroeconomic problems faced by Singapore: [1]

- Extract 2- Low economic growth 0.2% in 2016Q1 and inflation expected to remain negative till end of 2016. Hence slower growth is a more pertinent issue compared to inflation.

Explain how zero appreciation works:

- Zero appreciation means MAS flattened the slope of the band it uses to guide the Singdollar against an undisclosed trading basket and takes S$ off the path of modest and gradual appreciation.
- Zero appreciation will make exports appear cheaper in foreign currency terms and imports appear more expensive in local currency terms [1]
- → improve (X-M) →<u>Increase (X-M)</u> → <u>increase AD</u> [1], c.p.
- → increase RNY leading to actual economic growth [1]

Comment on MAS decision to use zero appreciation path: [3m]

- Stand: Not effective
  - Zero appreciation may not be sufficient to address fall in demand from trading partners as many economies are also suffering from weak economic growth (Extract 2 "most key economies also expected to see similar or slower growth in second half of 2016.")
  - SG government may wish to consider implementation expansionary fiscal policy to help stimulate the economy and boost economic growth.

  OR
- Stand: Effective
  - Zero appreciation policy can be undertaken assuming weak inflationary pressure on prices and hence low risk of imported inflation.
  - This stance also helps to improve our export competitiveness given the weak global economic sentiments.

d) Explain **two** possible causes of productivity issues in Singapore. [4]

Suggested Answer:
Identify cause
Explain how it leads to a fall in productivity (output per unit of input)

Factor 1: Rapid changes in technology

- Due to the **rapid growth in the use of technology**, the nature of jobs are constantly changing.
- Workers may not be able to keep up with the technology changes as they **lack the relevant skills and training** to operate the new and advanced equipment.
- Hence productivity falls as there is **less output produced per man-hour**.

Factor 2: Ageing Population

- A large proportion of the workforce is made up of the elderly 60 years and above.
- They may have **increased sick leave** as the tendency of having health problems increases with age.
- This decreases productivity as there is **less output with the same number of workers**.

Factor 3: Lack relevant skills

- Workers **may not possess the relevant skills** to perform their jobs due to changes in job scope
- A period of time is required for training and for them to acquire the skills and be proficient in their work. If workers are not receptive to changes and do not have the mindset to learn new skills, they will not be efficient and will take a longer time to complete the tasks.
- Hence a **fall in the quality of workers** leads to a fall in productivity.

e) Discuss whether the proposed approach of the Future Economy Committee is the only way for Singapore to cope with the challenges of "a less favourable external environment" (Extract 7) and the need to "move up the innovation ladder" (Extract 8). [12]

Suggested Answer:

Background information:
The implication of a less favourable external environment for Singapore would be slow or falling growth in GDP → AD fall or AD rise slowly. This is due to the fact that Singapore is an open economy dependent on imports for raw materials and exports for growth.

The implication of needing to move up the innovation ladder for Singapore is due to our aging population (hence shrinking work force). Failing to innovate can potentially lead to a fall in AS.

Hence likely slower rise in AD in the SR and fall in AS in the LR (diagram). Therefore use of ERP is insufficient in addressing the problem of the lack of LT growth.
Formation of Future Economy Committee to look into supply-side policies:

Thesis: Supply-Side Policy is effective

- Increase training & retraining of skills → increase quality of resources (Evidence from Extract 8: "build skills and redesign jobs so that workers can be at their best")
- Increase investment in human capital & R&D → increase quality of resources → increase LRAS
  (Extract 8: "invested heavily in education, research and development, the "future of

technology" hinges on how this can be translated into innovative processes")

- Improve state of technology → advancement in technology → increase productivity → increase LRAS
  (Evidence from Extract 8: education, research and development, the "future of technology" hinges on how this can be translated into innovative processes")
- Any 2 measures well-explained (any evidence from Extract 8 with relevant explanation and links to AD/AS also acceptable)

- Explain how the above measures increase AD and AS via I, leading to sustained EG, and a fall in structural and cyclical unN, possible fall in GPL (link to any 2 macro aims).
- Draw AD/AS diagram.

Limitations of SSP: (any 2 well-explained)

- However, supply side policies incur a huge amount of funds and can be very costly for the government. There is an opportunity cost in the usage the funds as the government might have to sacrifice spending in another area, e.g. infrastructure in order to achieve this outcome.

- Furthermore supply side policies such as education and research & development take time. The success of these policies are non-guaranteed as education and retraining depend on the receptiveness of the workers to undergo the training courses. R&D also does not guarantee immediate short term results and may take many cycles of experimentation before successful results can be seen.

Anti-thesis: Explain that another policy is effective [eg. Expansionary FP]

- An expansionary fiscal policy is appropriate to deal with slower actual growth due to a less favourable external environment.
- Expansionary FP will directly increase AD through a rise in government expenditure or a fall in taxation. Fall in personal income and corporate tax will lead to an increase in C and I respectively.
- G, C and I are components of AD. These will result in an increase in AD and a multiplied increase in RNY via the multiplier effect.

Limitations of FP: (any 1 well-explained)

- However, FP does not mitigate the fall or slower rise in net exports which is one of the root causes of slowing growth. While it increases AD, it does not correct the fall in demand for SG goods due to the economic slowdown in other countries e.g. from China or EU countries.
- Furthermore, FP is only effective in mitigating deficiency in AD and is unable to address the fall or slower rise in LRAS.

- Another reason for slowing growth could be due to fall or slower rise in FDI due to weakening business confidence. This is a main factor affecting the level of I in a country and this limits the extent of AD increasing due to lower FDI.

- Extract 8 also mentioned about how disruptive business models and new tech processes (3D-printing etc.) change the way firms operate and also change the type of job skills needed. This suggests that a deficiency in AD may not be the main cause of slower growth, and thus using FP has limited ability to target AS problems.

Overall Evaluation:
Stand: The use of supply-side policy is the only feasible, long term solution for Singapore.

Substantiation: This is due to constraints faced by Singapore. Being small – need to make full use of our resources by focusing on increasing quality of labour and capital. Supply

side policy addresses the issues of poor external environment and need to move up the innovation ladder well. By improving quality of resources and prices of factor inputs, we can maintain and improve on our export competitiveness as well as to attract more FDI into Singapore.

Level	***Descriptors***	***Marks***
L3	*Well-developed analysis of policies aimed at addressing ST and LT growth with clear well-explained diagrams.* *Shows good understanding of policies and their limitations.* *Good use of examples and case evidence.*	*6 - 9*
L2	*Some explanation of policies but under developed. Economic analysis present with some use of examples.*	*3 – 5*
L1	*A descriptive, list-like answer on the proposed approach by the Committee with no economic analysis.*	*1 – 2*
EV	*Valid evaluative comment that considers the adequacy of the proposed approach by the Committee to address the problems and challenges faced, with some focus on sustained growth.*	*Up to further 3 marks*

CJC

Name:		Index Number:		Class:	

DUNMAN HIGH SCHOOL
Preliminary Examination
Year 6

Economics 8823/01

Paper 1 Case Study **19 September 2018**

3 hours

Additional Materials:
Answer Paper

READ THESE INSTRUCTIONS FIRST

Write your name and class on the work you hand in.

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

You may use an HB pencil for any diagrams or graphs.

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

Answer **all** questions.

Write your answers on the separate answer paper provided.

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.

This document consists of **9** printed pages including this cover page.

[Turn over

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Answer **all** questions

Question 1: The Decline of Food Prices and Sustainable Agriculture

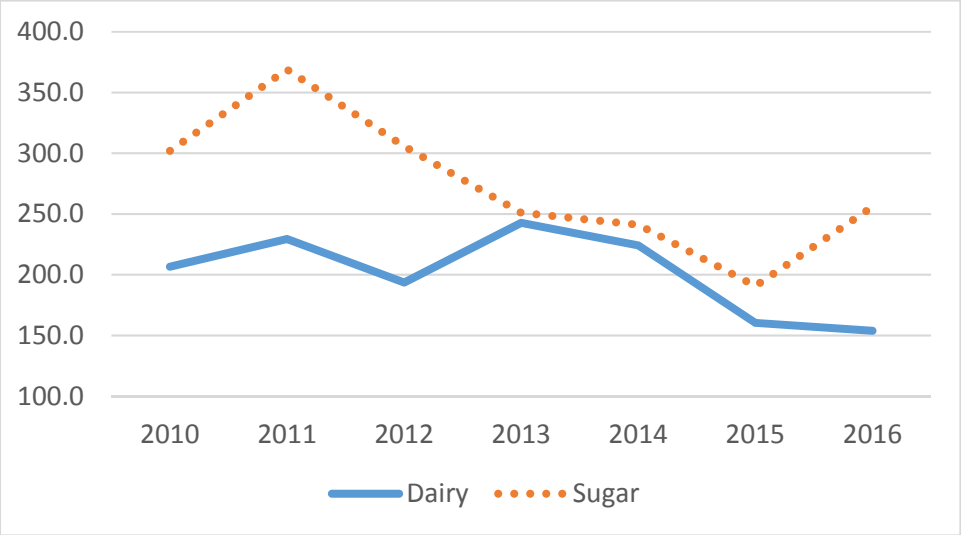
Table 1: Annual Food and Crude Oil Prices

The table below shows an index of international food prices and crude oil prices over the period 2007-2016. The Food Price Index is a measure of the change in international prices of a basket of food commodities consisting of meat, cereals, dairy, edible oil and sugars.

Year	Food	Crude Oil
2002	**100**	**100**
2007	161	288
2008	201	392
2009	160	248
2010	188	329
2011	229	444
2012	213	448
2013	210	436
2014	202	396
2015	164	208
2016	162	176

[Sources: imf.org and fao.org, accessed 03.09.18]

Figure 1: Annual Dairy and Sugar Price Index



[Source: fao.org, accessed 03.09.18]

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Extract 1: Food prices on a decline?

A decade after the food price spikes of 2007-8, conditions on world agricultural markets are very different. Production has grown strongly across commodities, and in 2017 reached record levels for most cereals, meat types, dairy products, and fish, while cereal stock levels climbed to all-time highs.

At the same time, demand growth has started to weaken. Much of the impetus to demand over the past decade came from rising per capita incomes in China, which stimulated the country's demand for meat, fish and animal feed. This source of demand growth is decelerating, yet new sources of global demand are not sufficient to maintain overall growth. Moreover, per capita consumption of many commodities is expected to be flat at a global level. This is notable for staple foods such as cereals and roots and tubers, where consumption levels are close to saturation levels in many countries. By contrast, demand growth for meat products is slowing due to regional variation in preferences and disposable income constraints.

[Source: FAO Agricultural Outlook 2018, accessed 03.09.18]

Extract 2: The end of the biofuel boom?

Starting in the early 2000s, biofuels emerged as a major 'consumer' of several crops. The US, the EU and Brazil, among other countries, encouraged the growth in biofuels as a way to reduce greenhouse gas emissions and/or achieve energy security. This stimulated global demand for maize and sugarcane, as well as vegetable oils, which in turn contributed to the robust demand growth in global agriculture. However, in recent years, biofuels have gradually disappeared as a source of demand growth and, as a result, the growth in demand for maize and vegetable oils will slow down significantly.

[Source: CEPR Policy Portal, 28.02.18, accessed 03.09.18]

Extract 3: Brazil releases maize from state reserves

The Government of Brazil announced in late April the sale of 1 million tonnes of maize from its state reserves. The measure aims to support livestock producers, amidst high domestic prices of yellow maize.

[Source: fao.org, 15.05.18, accessed 03.09.18]

Extract 4: Malawi bans maize exports

In early February, the Government reintroduced a ban on maize exports, which was lifted in late October following the bumper crop in 2017. The re-implementation of the trade measure reflects an expected fall in the 2018 output from last year's above-average level, mainly due to dry weather during the growing season. The ban aims to preserve national grain reserves and stem the impact of tighter domestic supplies.

[Source: fao.org, 15.05.18, accessed 03.09.18]

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Extract 5: True cost of food

In many countries there is a worrying disconnect between the retail price of food and the true cost of its production. As a consequence, food produced at great environmental cost in the form of greenhouse gas emissions, water pollution, air pollution, and habitat destruction, can appear to be cheaper than more sustainably produced alternatives.

[Source: FAO Agricultural Report 2015, accessed 03.09.18]

Extract 6: Developing nations face challenges in achieving food security

Agriculture remained a key sector for developing countries, which contributed immensely to economic growth and well-being. Technology and innovation were urgently needed, especially for developing countries, to sustainably increase agricultural production to meet rising demands, improve the global supply chain and decrease food loss and waste.

Further, unsustainable agriculture and food systems, particularly food loss and waste, were major contributors to climate change whose adverse impacts of climate change had undermined the ability of all countries to achieve food security and sustainable growth.

[Source: Inter Press Service, 19.12.16, accessed 03.09.18]

Extract 7: China to deepen reform in agricultural sector

The gist of supply-side reform in China's agricultural sector is to increase the output of high-quality products based on green and innovative production.

The country will maintain its zero increase in the usage of pesticides and fertilizers and vigorously control water usage in the sector. For better farm produce, a group of innovation centres and alliances will be created, and outstanding research will be enhanced. The reform also aims to refine the quality supervision and standard system for farm produce, control soil pollution and encourage agricultural businesses to gain international certifications. China will promote the export of competitive farm produce, cross-border operation of agricultural enterprises and the establishment of global leaders in the sector.

[Source: China Daily, 05.02.17, accessed 03.09.18]

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Questions

(a) With reference to Table 1:

(i) Compare the change in food prices and crude oil prices over the period 2007-2010. [2]

(ii) Identify the relationship between food prices and crude oil prices over the period 2007-2016 and account for the relationship. [4]

(b) Using Figure 1, compare the change in the prices of dairy and sugar over the period 2010-2016. [2]

(c) With reference to Extracts 1 and 2, use supply and demand analysis to explain the trend of food prices in recent years. [6]

(d) Explain how exchange rate depreciation may impact food importing countries. [2]

(e) Extracts 3 and 4 refer to government intervention in agricultural markets.

(i) With the use of a supply and demand diagram, explain how the differing government policies in the maize market seek to help the target groups in the two countries, and discuss briefly whether success is guaranteed. [7]

(ii) Analyse the effect of the export ban on the consumer expenditure on maize and the long-term effect on the allocation of resources between maize and other crops. [7]

(f) There exists a divergence between private costs and social costs in the production of food.

Explain why there is a ‘worrying disconnect between the retail price of food and the true cost of its production’, as stated in Extract 5. [5]

(g) Using Extracts 6 and 7, evaluate the implementation of agriculture reforms by the Chinese government to achieve sustainable growth. [10]

[Total: 45]

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Marking Guide:

- Be positive in your marking, awarding marks for what is there without being overly influenced by omissions.
- Marks should not be deducted for inaccuracies.
- Part-questions which ask candidates to 'comment' do not use Levels of Response marking guides. There will be a separate mark allocation for 'comment', with either 2 or 3 marks – which will never be more than 50% of the total mark available.
- Part-questions which ask candidates to 'discuss' have a Levels of Response marking guide. In determining the Level that an answer falls in, use a 'best-fit' approach; the answer may therefore not always exhibit all the features of the Level description.
- Having determined the Level, begin your determination of the mark at the midpoint for the Level. Then decide whether to move the mark up or down within the Level to reflect the quality of the answer.
- Marks for evaluation or comment must be added to the mark for knowledge and understanding, interpreting information, application and analysis.
- Differences in marks should be based on the ability of the candidate to demonstrate the various assessment objectives listed in the syllabus and not purely on the ability to itemise further facts from the content of the syllabus.
- Guidance on making allocations for part-questions with a Levels of Response marking:

Total Mark	Analysis/Explanation Levels of Response Mark Range	Marks for Evaluation
7	L1 1-2 L2 3-5	1-2
8	L1 1-3 L2 4-6	1-2
9	L1 1-3 L2 4-6	1-3
10	L1 1-2 L2 3-4 L3 5-7	1-3
11	L1 1-2 L2 3-5 L3 6-8	1-3
12	L1 1-2 L2 3-5 L3 6-9	1-3

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Question 1 – Marking Guide

Question	Answer	Marks
1(a)	**With reference to Table 1:**	
1(a)(i)	**Compare the change in food prices and crude oil prices over the period 2007-2010.** **1 mark** each for **two** valid statements made about the relevant data in Table 1. Each statement needs to make a comparison between food prices and crude oil prices to gain credit. It should be observed from Table 1 that both the prices of food and crude oil experienced an increase over the period (given by the increase in the price indices: 161 to 188 for food and 288 to 329 for crude oil) **(1)**. By expressing the price in a period as a percentage of the price in a base year (indicated by 2002=100), the use of a price index allows for a measurement of how much prices have changed over different periods. The next statement may be to compare the extent of the increase in price for both commodities. This will require a calculation of the percentage change in price between 2007 and 2010 to conclude that food prices experienced a larger magnitude of increase **(1)**. Food: ($\frac{188-161}{161}$ x 100 = 16.8%) Crude Oil: ($\frac{288-329}{288}$ x 100 = 14.2%) Computation of the percentage change in price is not necessary to gain full credit.	**2**
1(a)(ii)	**Identify the relationship between food prices and crude oil prices over the period 2007-2016 and account for the relationship.** **1 mark** for *identifying* the relationship between food prices and crude oil prices to be a positive or direct one **(1)**. **1 mark** for *using* the data in Table 1 to *describe* how the change in crude oil prices is largely consistent with the change in food prices. For e.g. apart for the period 2011-2012, periods in which crude oil prices increased observed a similar increase in food prices; periods in which crude oil prices decreased saw a similar decline in food prices **(1)**. **Up to 2 further marks** for *explaining* the likely link(s) between the change in crude oil prices and the change in food prices. This may be to explain how a change in crude oil prices may impact food prices. Crude oil is used as a factor input (FOP) in the production and distribution processes of agricultural commodities – meat, cereals, dairy, edible oil and sugars – that make up food **(1)**. Higher production costs due to an increase in crude oil prices contribute to an increase in food prices, ceteris paribus **(1)**. Also acceptable is an explanation of how an increase in crude oil prices will drive up the demand for biofuel that will consequently add to the demand for agricultural produce, the effect of which is to cause the prices of food commodities to increase.	**4**

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	Diagrammatic analysis is not necessary to gain full credit.	
1(b)	**Using Figure 1, compare the change in the prices of dairy and sugar over the period 2010-2016.** **1 mark** each for **two** valid statements made about the relevant data presented in Figure 1. Each statement needs to make a comparison between dairy prices and sugar prices to gain credit. Both dairy and sugar prices observed an overall decline over the period 2010-2016 **(1)**. Sugar prices peaked in 2011 and thereafter fell sharply while dairy prices experienced a more gradual decline, characterised with periods of falling and rising prices **(1)**. Any other statement, where relevant, should be rewarded. No marks for a non-comparative statement or for mere regurgitation of data.	**2**
1(c)	**With reference to Extracts 1 and 2, use supply and demand analysis to explain the trend of food prices in recent years.** *Question Analysis:* *Candidates are expected to use supply and demand analysis to explain how the interaction of demand and supply factors has contributed to a decline in food prices in recent years.* **Up to 2 marks** for quality of supply and demand diagram used – correctly labelled axes and curves, shifts in correct directions, equilibrium positions correctly identified. Diagram should illustrate a global market for food and a rightward shift in the demand and supply curves, with a larger magnitude of shift for the latter. **Up to 4 further marks** for *explaining* that factors to do with the waning effect of rising per capita incomes on food demand, the consumption of staples reaching a saturation point, the disappearance of biofuels as a source of demand growth (due likely to a trend of falling crude oil prices) would have caused a slowdown in the increase in demand for food **(1)**, and factors to do with technological progress, improved farming methods etc. that enabled production to reach 'record levels' would have caused supply to increase **(1)**, and an explanation that the increase in supply would have outpaced the demand growth **(1)** to create a surplus at the original equilibrium price that would eventually cause a resultant fall in the equilibrium price of food **(1)**. Mere regurgitation (e.g. stating that 'production reached record levels') does not amount to a proper explanation of demand or supply factors and the relevant mark will not be awarded.	**6**

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	An explanation of the process in which market equilibrium is restored via a price change is required to gain full credit.	
1(d)	**Explain how exchange rate depreciation may impact food importing countries.** **Up to 2 marks** for *explaining* that exchange rate depreciation will result in an increase in the prices of food commodities in terms of the domestic currency of a country since more units of the currency have to be given up to purchase the same quantity of food **(1)**. Given that the demand for food commodities is price inelastic, this will cause the expenditure on food to increase, ceteris paribus. The impact of this may be to cause living standards in food importing countries to stagnate or worsen **(1)**. Also acceptable is to explain how exchange rate depreciation will result in imported inflation that adds to the average price level in food importing countries. Agricultural commodities are used as factor inputs to manufacture or produce processed food. The increase in production costs due to higher prices of food commodities will eventually be passed on to consumers. Not necessary to explain the impact in the context of falling food prices. Diagrammatic analysis is not necessary to gain full credit.	**2**
1(e)	**Extracts 3 and 4 refer to government intervention in agricultural markets.**	
1 (e)(i)	**With the use of a supply and demand diagram, explain how the differing government policies in the maize market seek to help the target groups in the two countries, and discuss briefly whether success is guaranteed.** *Question Analysis:* *Against the larger context of a decline in global food prices, candidates should recognise that domestic prices of food commodities in different countries may not observe a similar trend depending on how domestic conditions of demand and supply might have changed. While demand conditions may remain relatively stable, agricultural production continues to be susceptible to the vagaries of nature and deteriorating supply conditions in a country may account for price trends that deviate sharply from international price movements.* *In addressing the question, candidates are expected to use supply and demand analysis to explain how the release of stocks by the Brazilian government and the export ban imposed by the Malawi government will impact domestic markets and bring about benefits to consumers and/or producers in the two countries. The 'discuss' term requires candidates to consider factors that determine the extent to which the intended outcomes will be achieved.* **Up to 1 mark** for quality of supply and demand diagram used – correctly labelled axes and curves, shifts in correct directions, equilibrium positions correctly identified. A single diagram may be used	**7**

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to represent the domestic market for maize in Brazil and Malawi, with a rightward shift in the supply curve and a resultant increase in equilibrium quantity and decrease in equilibrium price.

Up to 4 marks for *explaining* that the release of stocks and imposing a ban on exports will cause domestic supply in the two countries to increase and bring about a fall in price in the market for maize **(2)**. Candidates may consider how the policies might be able to stem the fall in domestic supply owing to adverse factors (e.g. dry spell in Malawi), in which case the resultant shift may be one of supply falling by a smaller magnitude, thereby moderating the resultant increase in price. Where explained appropriately, such an approach should be rewarded. This will benefit both producers and consumers in the two countries (e.g. livestock farmers in Brazil who rely on maize as a source of cattle feed or producers of processed food that use maize as a factor input) **(2)**.

Reference to specific groups of consumers or producers in the two countries is required to gain full credit.

L2	An answer that uses appropriate analysis to explain how target groups in the two countries may be able to benefit from the policies.	3-5
L1	An answer that merely identifies or describes benefits.	1-2

In addition, **up to a further 2 marks** for valid evaluative comment. This should focus on factors that determine the extent to which the intended outcomes may be achieved. One valid point, supported with economic reasoning, can gain full credit.

Possible issues or factors include:
- the amount of stocks or reserves that the Brazilian government holds and its ability to sustain the supply of maize to prop up domestic supply or the extent to which quantities of maize made available through the export ban may be able to shore up domestic supply.
- the duration and severity of the dry weather in Malawi that limit the amount of relief provided by the ban on exports.
- the possibility of unintended consequences arising from the policies.

1(e)(ii) **Analyse the effect of the export ban on the consumer expenditure on maize and the long-term effect on the allocation of resources between maize and other crops.** **7**

Question Analysis:
Candidates are expected to apply the concept of demand elasticity to explain the effect of the export ban on consumer expenditure and the Marginalist Principle to explain how resource allocation may be impacted in the long run.

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	1 mark for quality of use of a supply and demand diagram to illustrate a rightward shift in the supply curve and the change in consumer expenditure. **Up to 2 further marks** for *explaining*, with reference to a diagram, that a fall in the price of maize will result in a reduction in consumer expenditure, given that demand is price inelastic. The fall in the domestic price of maize will result in a less than proportionate increase in quantity, ceteris paribus, to the extent that consumer expenditure will reduce. Comparison of the expenditure before and after the policy implementation is required to gain full credit. **Up to 4 further marks** for *explaining* that a fall in the price of maize will cause the marginal revenue to decrease relative to marginal cost such that the marginal profit (difference between marginal revenue and marginal cost) from an additional unit of maize produced will reduce **(2)**. Holding the marginal profit of other crops unchanged, the profitability of maize as a cash crop will fall relative to other crops. In the long term, self-interested farmers seeking to maximise profits will be incentivised to cut back the production of maize and switch to other crops, resulting in an allocation of resources away from maize to other food crops **(2)**.	
1(f)	**There exists a divergence between private costs and social costs in the production of food** **Explain why there is a 'worrying disconnect between the retail price of food and the true cost of its production', as stated in Extract 5.** *Question Analysis:* *Candidates should recognise that the 'true cost' of food production consists of private costs arising from the use of resources as well as external costs that come about in the form of spillover effects on third parties not directly involved in the production activity.* *"Food production has multiple impacts both on and off the farm. These can often be negative, such as the pollution of rivers, the emission of greenhouse gases, the spread of antibiotic resistance, the degradation of soil, the rise of obesity and the spread of disease. Yet none of this damage has featured in the balance sheet of farmers using chemical methods."* *(Source: The True Cost of Food, Patrick Holden, 22.09.16)* *In addressing the question, candidates are expected to explain why self-interested producers (including farmers) only consider private costs and do not take into account external costs associated with food production. Since the retail price of food is a reflection of production costs (firms in competitive markets will charge a price that is equal to the lowest unit cost of production), the existence of external costs and the likely scenario of such costs increasing will create a growing*	**5**

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	disconnect between the retail price of food and the true cost of its production. Despite what the price on the shelf may suggest, foods produced through unsustainable means (e.g. intensive use of fertilisers and pesticides) are by no means cheap. **Up to 2 marks** for quality of use of a cost/benefit diagram with correctly labelled axes and curves, to illustrate a divergence between marginal private cost and marginal social cost and identify correctly equilibrium positions. **Up to 3 further marks** for *explaining* that the use of ineffective or environmentally unfriendly or detrimental farming methods, which may be potentially destructive in some instances, in some countries, creates external costs in the form of pollution, habitat destruction that give rise to resource depletion and degradation **(2)**. In the context of developing countries, the most important cause of environmental destruction may be due to the overexploitation by poor people of their scarce environmental resources. Poor people lack modern agricultural inputs, and being too poor to buy inputs that preserve the soil's fertility, they deplete the soil's natural minerals, making soils less productive. In richer economies, the external costs may be caused by intensive large-scale farming reliant on chemicals. Such costs are not taken into account by self-interested producers in the production process and consequently will not be factored into the retail prices of food **(1)**. On the other hand, sustainable food production that delivers a wide range of benefits may require the use of relatively more expensive equipment or methods of production that add to production costs which contribute to higher retail prices. Responses or diagrams that focused upon overproduction of food as a result of negative externalities rather than under-pricing will not gain full credit.	
1(g)	**Using Extracts 6 and 7, evaluate the implementation of agriculture reforms by the Chinese government to achieve sustainable growth.** *Question Analysis:* *Candidates should recognise that sustainable growth refers to growth that can be maintained without creating other significant economic problems (such as depleted resources and environmental problems), particularly for future generations. It implies a positive and stable economic growth over an extended period of time. To achieve sustainable growth, countries have to manage and use its resources in such a way that it does not leave behind fewer or lower quality resources for use by future generations. Reforms implemented in China are intended to facilitate a shift towards sustainable agriculture that supports the country's sustainable growth. Candidates are expected to use appropriate analysis to explain how agricultural reforms are able to minimise, if not eliminate, the negative environmental externalities of food production (whose adverse effects on resource quality, health, productivity etc may otherwise constrain the country's ability to grow) and expand the country's productive*	**10**

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	capacity to cope with rising demands. This allows the country to strike a balance between preserving the environment and ensuring an adequate food supply for an expanding population. Evaluation may be to consider the likely effectiveness, feasibility, limitations of the reforms as well as possible trade-offs or unintended consequences arising from the reforms. **Suggested Answer Outline:** **[Explain the meaning of sustainable growth]** Sustainable growth refers to growth that can be maintained without creating other significant economic problems (such as depleted resources and environmental problems), particularly for future generations. **[Outline issues relating to agriculture that China is confronted with in achieving sustainable growth]** - Much of the increased food production through agricultural intensification in the past decades had been undertaken at the expense of significant environmental damage that has taken a toll on the country's resources (high intensity of resource use has caused the environment to exhaust its carrying capacity). - Rising land and labour costs that reduce competitiveness and pose concerns on food security amid an expanding population. - Widening rural-urban income divide that may hamper growth. **[Outline the key characteristics of China's agriculture reforms]** Agriculture reforms in China seek to increase the quantity and improve the quality and efficiency of resources in agriculture markets with the aim of reducing environmental pressures, while meeting the demands of a growing population and continuing to improve the lives of the rural population. They include: - providing incentives for sustainable resource use and promotion of green (or 'clean') technologies (apart from market-based policies that internalise production externalities), - setting standards and adopting internationally recognised best practices or processes, - expanding productive capacity through technological utilisation and investment (in agricultural enterprises), and - improving China's competitiveness as a food exporting country. **[Explain the impact of the reforms in terms of reducing negative externalities and expanding productive capacity]** - The introduction of green methods of production and processes promotes environmental preservation and minimises the external costs associated with agricultural production. This effectively reduces the toll that environmental externalities have on the resources of the country. Cuts in spending on health care costs, pollution clean-up, etc. can be diverted to other areas of the economy. Cost and benefit diagram to illustrate. - Investments in capital goods, research, developing expertise and technology will raise agricultural productivity and contribute to the country's potential growth. This is crucial in meeting the	

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consumption needs of an expanding population. AD/AS or PPC diagram to illustrate.

- Promoting the 'export of competitive farm produce, cross-border operation of agricultural enterprises' as well as encouraging 'agricultural business start-ups' will help develop and sustain the agricultural sector as an engine of rural development that contributes to higher farmer incomes. This has the effect of improving income distribution and brings about inclusive growth.
- Competitive markets allow for efficiency in resource allocation as consumers and producers respond to price signals. Reliance on the price mechanism will also ensure that farm products can be sold at reasonable prices. This goes toward encouraging exports as a source of growth.

[Explain possible limitations, problems, disadvantages]

- Huge fiscal outlay.
- Opportunity cost of farming labour in terms of wages that workers can earn in manufacturing or other sectors of the economy.
- Long and demanding process that requires close coordination between the government and various stakeholders for the intended outcomes of the reforms to be realised.
- Possible short-term impact on production cost.
- The need to rely on international expertise and technology as well as gain access to global agricultural resources and food trade infrastructure

A broad understanding of the concept of sustainable growth and how reforms are able to address environmental concerns and contribute to a country's productive capacity is expected to gain credit.

L3	An answer that uses appropriate analysis to explain how agricultural reforms are able to minimise the impact of negative externalities and expand productive capacity in achieving sustainable growth.	5-7
L2	An answer that merely identifies or describes how agricultural reforms are able to minimise the impact of negative externalities and expand productive capacity in achieving sustainable growth.	3-4
L1	An answer that demonstrates some knowledge of sustainable growth.	1-2

In addition, **up to a further 3 marks** for valid evaluative comment that considers the significance of agriculture reforms in achieving sustainable growth.

That the environment is near its carrying capacity underscores the importance of implementing reforms to create a sustainable agricultural and food system through technological innovation to feed the future population. Given the costly outlay, it is crucial that the

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	Chinese government look to public-private partnerships to attract private capital and expertise into rural infrastructure. Efforts should also be made to encourage large agribusiness to go global to gain access to global agricultural resources.	

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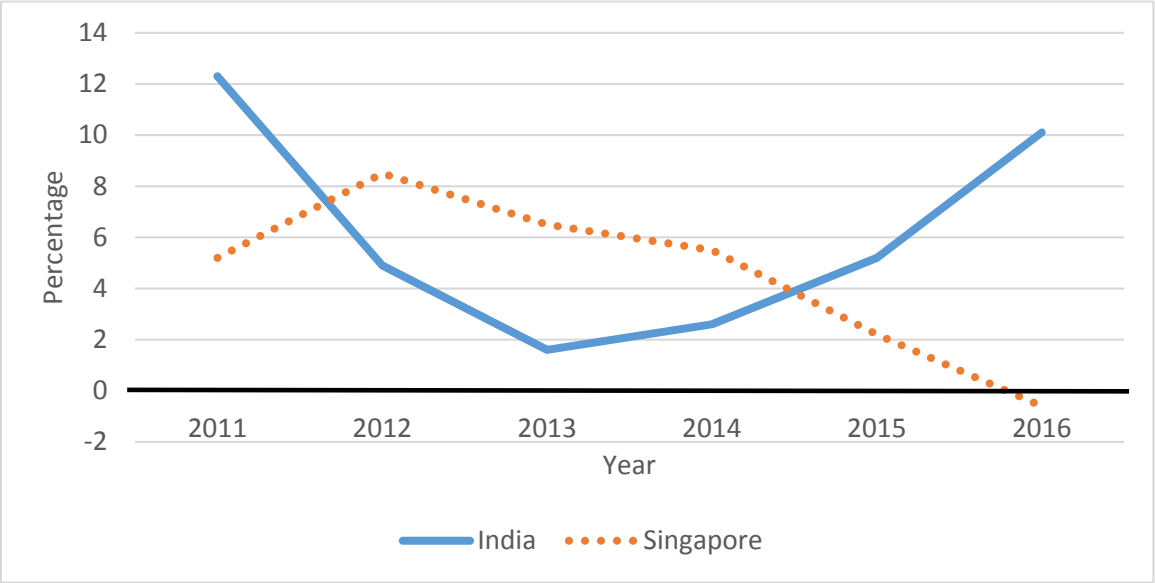
Question 2: The Economies of India and Singapore

Figure 2: Gross Fixed Capital Formation[1] of India and Singapore

(annual percentage growth)



[1]Gross fixed capital formation (GFCF) includes plant, machinery, and equipment purchases; and the construction of roads, railways.

[Source: data.worldbank.org, accessed 27.08.18]

Extract 8: Economic outlook for India and Singapore

The Indian economy has recorded strong growth in recent years, helped by trade gains, private consumption spending, positive policy actions including implementation of key structural reforms, and reduced external vulnerabilities. Inflation has remained low after the collapse in global commodity prices, a range of supply-side measures, and a relatively tight monetary stance.

Singapore has embraced a new growth model for a world of rapidly advancing digital technologies and automation. The strategy is to turn Singapore into a labour-lean economy with less reliance on foreign workers and growth based on innovation, digitalisation, and continuous investment in skills. Economic and social policies in the form of higher fiscal spending to make growth more inclusive and tackle population ageing have advanced appreciably in recent years and are still evolving, complementing the economic transformation drive.

[Sources: IMF Country Report, India, 22.02.17 and IMF Country Report, Singapore 22.06.17, accessed 27.08.18]

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Table 2: Selected Statistics for India and Singapore, 2013 – 2016

Real GDP per capita growth, annual percentage, 2013-2016

	2013	2014	2015	2016
India	5.1	6.1	6.9	5.9
Singapore	3.4	2.5	1.0	1.1

Inflation, consumer prices, annual percentage, 2013-2016

	2013	2014	2015	2016
India	11	6.7	4.9	4.9
Singapore	2.4	1.0	-0.5	-0.5

Nominal wage growth, annual percentage, 2013-2016

	2013	2014	2015	2016
India	-	13.4	10.4	10.3
Singapore	5.3	4.9	4.0	3.1

[Sources: data.worldbank.org, labour.gov.in and stats.mom.gov.sg, accessed 27.08.18]

Extract 9: Chronic under-investment in Indian infrastructure

The traditional post-World War II East Asian[2] growth model resembles a virtuous cycle based on: attracting foreign investments, building infrastructure and hiring cheap labour, and exporting manufacturing goods to the U.S. and other parts of the developed world. Chronic under-investments into India's infrastructure, combined with foreign investment restrictions, however, have precluded India from adopting this traditional manufacturing export-led growth model so far. According to a June 2016 McKinsey report, India currently has an infrastructure investment gap equivalent to 0.5% of GDP; in addition, 25% of the country's households lack access to electricity, 6% to clean water, and 82% to internet access.

[2]*East Asian economies consist of countries such as Japan, South Korea, China and Taiwan.*

[Sources: Forbes 22.03.17, accessed 27.08.18]

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Extract 10: India stumbles on business-friendly reforms

That India is pro-business but not necessarily pro-market is a frequent refrain. “The government wants to create jobs, not the environment in which job-creation flourishes,” says one investor. Special economic zones are set up sometimes to entice single companies. Even big foreign investors are essentially told what to do: Walmart can only open cash-and-carry stores closed to the general public, Amazon must sell mostly other merchants’ goods rather than its own, and so on.

Evidence of the mistrust of markets is abundant. Indian farmers need more fertiliser, but imports are taboo and price controls discourage investment in new factories. No matter: the government has leaned on Coal India and a power utility, of all companies, to try their hand at it. If venture capitalists are wary of funding Indian startups, the state will do it in their stead, badly. A government fund launched five months ago for this purpose has so far made just one investment.

[Source: The Economist 25.06.16, accessed 27.08.18]

Extract 11: Disruptive change weighs on the Singapore economy

The slowdown in Singapore’s growth is the result of a confluence of short-term cyclical headwinds, as well as longer-term structural issues.

The world economy has yet to completely shake off the vestiges of the global financial crisis and continues to lack a strong growth driver. This is the result of an "absence of a meaningful rebound in consumer confidence globally, which is weighing on investment and hiring decisions", says CIMB Private Bank economist Song Seng Wun.

"Singapore is caught in that crossfire," he adds, noting that the Republic's key trading partners have all been grappling with their own sets of challenges. World oil prices had been fairly stable from 2010 until mid-2014, at around US$110 a barrel. But they have almost halved since, plunging the oil and gas industry into a crippling slump. Companies in Singapore have not been spared the effects of this protracted downturn

But some economists say the slowdown is not merely cyclical. Prime Minister Lee Hsien Loong said in his National Day Rally speech in August that disruptive change is the "defining challenge" facing Singapore's economy. Technology has transformed almost every industry - from food delivery to manufacturing. These developments have left both challenges and opportunities in their wake, most obviously in the labour market. There are thousands of jobs waiting to be filled in growing sectors like IT, precision engineering, education and healthcare. But many workers who have been laid off lack the necessary specialised skills required in these roles.

[Source: The Straits Times 30.10.16, accessed 27.08.18]

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Questions

(a) With reference to Figure 2 and Table 2:

(i) Compare the gross fixed capital formation over the period 2013-2016 between India and Singapore. [2]

(ii) Explain a possible reason for the trend of India's gross fixed capital formation growth over the period 2013-2016. [2]

(iii) Using a PPC diagram, explain an opportunity cost arising from a country's decision to allocate more resources to investment spending. [4]

(b) Explain the meaning of real GDP per capita. [2]

(c) How far does the data in Table 2 allow one to conclude whether the average Indian or the average Singaporean is likely to experience a larger improvement in living standards over the period 2013-2016? [7]

(d) Using AD/AS analysis, explain how a collapse in commodity prices (Extract 8) and a relatively tight monetary stance (Extract 8) have kept inflation low in India. [7]

(e) Extract 11 suggests that slowing growth in Singapore is due to a 'confluence of short-term cyclical headwinds, as well as longer-term structural issues'. Discuss the relative importance of cyclical and structural factors in causing growth to slow down. [9]

(f) India has progressed towards a free-market economy that saw the government introduce policies that included a reduction of taxes and subsidies, removal of price controls and opening up domestic markets for foreign investment. The International Monetary Fund says India also needs active government intervention to increase infrastructure spending.

Assess the case for a greater reliance on the free market, rather than government intervention, to achieve economic growth and low unemployment. [12]

[Total: 45]

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Marking Guide:

- Be positive in your marking, awarding marks for what is there without being overly influenced by omissions.
- Marks should not be deducted for inaccuracies.
- Part-questions which ask candidates to 'comment' do not use Levels of Response marking guides. There will be a separate mark allocation for 'comment', with either 2 or 3 marks – which will never be more than 50% of the total mark available.
- Part-questions which ask candidates to 'discuss' have a Levels of Response marking guide. In determining the Level that an answer falls in, use a 'best-fit' approach; the answer may therefore not always exhibit all the features of the Level description.
- Having determined the Level, begin your determination of the mark at the midpoint for the Level. Then decide whether to move the mark up or down within the Level to reflect the quality of the answer.
- Marks for evaluation or comment must be added to the mark for knowledge and understanding, interpreting information, application and analysis.
- Differences in marks should be based on the ability of the candidate to demonstrate the various assessment objectives listed in the syllabus and not purely on the ability to itemise further facts from the content of the syllabus.
- Guidance on making allocations for part-questions with a Levels of Response marking:

Total Mark	Analysis/Explanation Levels of Response Mark Range	Marks for Evaluation
7	L1 1-2 L2 3-5	1-2
8	L1 1-3 L2 4-6	1-2
9	L1 1-3 L2 4-6	1-3
10	L1 1-2 L2 3-4 L3 5-7	1-3
11	L1 1-2 L2 3-5 L3 6-8	1-3
12	L1 1-2 L2 3-5 L3 6-9	1-3

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Question 2 – Marking Guide

Question	Answer	Marks
2(a)	**With reference to Figure 2:**	
2(a)(i)	**Compare the gross fixed capital formation over the period 2013-2016 between India and Singapore.** **1 mark** each for **two** valid statements made about the relevant data in Table 1. Each statement needs to make a comparison between the levels of gross fixed capital formation in the two countries. It should be observed from Figure 2 that both countries recorded an overall increase in the level of gross fixed capital formation over the period 2013-2016, given by the positive growth rate (albeit a negative growth rate for Singapore in 2016) **(1)**. The next statement may be to compare the rate of increase in GFCF for both countries. GFCF in India expanded at an increasing rate while GFCF in Singapore grew at a decreasing rate **(1)**.	**2**
2(a)(ii)	**Explain a possible reason for the trend of India's gross fixed capital formation growth over the period 2013-2016.** **Up to 2 marks** for *identifying* a possible reason and for *explaining* it. Following consecutive years of a decline in GFCF growth, India experienced a revival in investment spending over the period 2013-2016 characterised by higher rates of year-on-year increase. There are many different possible reasons to account for such a trend. Any reason with valid economic reasoning should be accepted. One possible reason may have to do with a fall in interest rates, though the 'relatively tight monetary stance' in Extract 8 might not support such a view. Other possible reasons include government policies toward state-led investment spending, improved market prospects or business environment that lifted the profits expectations of firms, or favourable domestic or external factors that encouraged private sector investment. For e.g. an increase in external demand (trade gains) may contribute to a pick-up in manufacturing activity reliant on capital-intensive production in India, the effect of which is to spur firms to spend more on capital goods to support the output expansion. An explicit link to the increase in GFCF growth is necessary to gain full credit.	**2**
2(a)(iii)	**Using a PPC diagram, explain an opportunity cost arising from a country's decision to allocate more resources to investment spending**. **Up to 2 marks** for quality use of a Production Possibility Curve diagram with correctly labelled curves and axes, relevant positions on the curve correctly identified. Diagram should illustrate investment or capital goods on one axis in comparison with a suitable good (e.g.	**4**

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	consumption goods) on the other axis, with a fall in quantity of the good in comparison as the quantity of investment goods increases. **Up to 2 further marks** for *explaining* an opportunity cost, expressed as the value of the next best alternative foregone, associated with an increase in investment spending. In the context of a PPC depicting two goods, the opportunity cost of producing more quantities of one good would be the quantities of the other good that have to be given up, assuming that all resources are fully employed. This may be expressed as a trade-off between consumption (for current SOL) and investment (for future SOL). With reference to a PPC depicting different possible combinations of the maximum quantities of consumer and investment goods and assuming that all resources are efficiently utilised in an economy, the opportunity cost of allocating more resources to investment spending (for maintaining and expanding productive capacity) may be the consumables (for current satisfaction) that have to be given up. Expressing one of the most fundamental ideas in economics, the trade-off is such that to produce more in the future, the economy must accept less satisfaction in the present.	
2(b)	**Explain the meaning of real GDP per capita.** **1 mark** for *explaining* that GDP is a measure of the market value of final goods and services produced within the geographical boundaries of a country in a given time period (usually a year). **Up to 1 further mark** for explaining that 'real' has to do with a measure of GDP that has eliminated the influence or effects of changes in the price level and 'per capita' as the value of GDP divided by the number of people in a country's population. No mark for expressing 'real' to mean that inflation or deflation has been 'accounted for'.	**2**
2(c)	**How far does the data in Table 2 allow one to conclude whether the average Indian or the average Singaporean is likely to experience a larger improvement in living standards over the period 2013-2016?** *Question Analysis:* *Candidates are expected to use appropriate analysis to explain the relevance and sufficiency of the data presented in Table 2 in gauging or assessing the change in living standards in the two countries. This may be to explain the direct links between the statistical data and the likely change in living standards in the two countries as well as the limitations of the data and the relevance of other economic information in drawing conclusions. The 'how far' terms in the stem of the question require candidates to consider the extent of the limitations of the data both in terms of the problems associated with their computation (e.g. national income statistics may not accurately measure the true value of output or income in an economy) and their adequacy as measures*	**7**

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of living standards (i.e. does the data sufficiently account for every aspect of SOL).

Up to 5 marks for *explaining*, as follows:

Definition of standard of living in terms of the material and non-material aspects of well-being.

A sustained increase in real per capita GDP over the years, given by the robust growth rates, means that Indian residents on average enjoyed a higher level of real income which made it possible to purchase a larger quantity of goods and services, thus allowing for improvements in their livelihoods. Compounded over time, that growth rates remained consistently above 5% indicates that there was a significant improvement in living standards. In comparison, the rate of real GDP per capita growth for Singapore was much lower over the same period.

Despite the elevated rates of inflation, real wage growth (nominal wage growth adjusted for the effects of inflation) for India exceeded that of Singapore, considering the impressive nominal wage growth for the former. Since real wage is a direct measure of purchasing power, on this note, the average Indian seems to have experienced a larger improvement in living standards over the period.

As a measure of the true value of output or income, national income statistics (real GDP per capita) have limitations to do with:

- non-marketed or non-transacted output that may be significant in less developed countries as well as output sold in underground markets may not be included
- improvements in the quality of goods and services are not taken into account
- value of negative externalities, such as pollution and other undesirable by-products of production or consumption is not accounted for

In addition, income statistics or wages may be inadequate as measures of standards of living. The inadequacies include:

- use of real GDP per capita and real wage growth as an indicator of average output/income or average wage growth per person
- relevance of other economic information such as income distribution, levels of education & health, life expectancy, leisure time, as well as quality of life factors such as the crime rate, a sense of security and peace arising from relations with other countries, well-functioning institutions (free of corruption), stress levels from working conditions, the degree of political freedom etc. to account for SOL adequately.

L2	An answer that uses appropriate analysis to explain both the relevance and limitations of the data in assessing the change in living standards in the two countries.	3-5

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L1	An answer that merely describes the relevance of the data in assessing the change in living standards in the two countries.	1-2

In addition, **up to a further 2 marks** for valid evaluative comment. This may be to comment that, given the huge disparity in socio-economic conditions, the lack of a sufficient range of economic information relating to the non-material aspects of SOL means that income or wage data are clearly not enough for one to draw conclusions about improvements in living standards in India and Singapore, no matter how accurately the data may be representative of the output or purchasing power an average individual enjoys in the two countries.

2(d) **Using AD/AS analysis, explain how a collapse in commodity prices (Extract 8) and a relatively tight monetary stance (Extract 8) have kept inflation low in India.** **7**

Up to 2 marks for quality use of an AD/AS diagram – correct labelling of axes, curves, equilibrium points, etc., and correct identification of the scenario – shift of AD and AS curves in the context of the Indian economy. One possible diagram may be to illustrate a rightward shift in the AD curve and a leftward shift in the AS curve, both shifts being moderated by the two factors to the extent that the increase in GPL is reduced.

Up to 4 further marks for *explaining* each scenario, as follows:

A collapse in commodity prices means that prices of agricultural commodities and non-agricultural commodities such as metals (copper, iron ore), crude oil etc. have taken a tumble. Given that India imports a significant quantity of these items and since these raw materials are widely used as factor inputs across different sectors and industries, the decline in commodity prices will lower firms' production costs and cause AS to increase **(2)**. Candidates may also explain that there may be other more significant cost-push factors giving rise to a fall in AS, in which case, the effect of the decline in commodity prices may be to moderate the fall in AS to bring about a smaller leftward shift. Where explained appropriately, such an approach should be rewarded.

The effect of a collapse in commodity prices may also be to cause a fall in the prices of agricultural commodity exports from India. Given that demand is likely to be price-inelastic, a fall in price will result in a less than proportionate increase in quantity ceteris paribus, giving rise to a fall in export revenue. This will have the effect of lowering (X-M) and hence reducing AD, holding everything else unchanged. A relatively tight monetary stance has to do with the Reserve Bank of India (RBI) opting to raise interest rates or to keep interest rates at elevated levels, likely due to heightened inflationary expectations. This will have the effect of dampening private consumption and investment

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	spending **(2)**. Given that domestic demand is likely to be buoyed by robust growth in industrial and manufacturing activity, including higher household spending spurred by wage growth, the resultant effect may be a smaller magnitude of increase in AD, in which case, the increase in GPL via the multiplier effect will be reduced. **1 further mark** for *explaining* the combined effect of the factors on inflation. The combined effects of both AD and AS shifts on the GPL should be clearly explained in relation to how inflation is kept low **(1)**. Depending on the approach taken by candidates, this may be to explain that the increase in GPL has been moderated by either a fall in AS in combination with an increase in AD OR a lower resultant increase in AD and fall in AS, the magnitude of both shifts would otherwise have been more pronounced if not for the two factors. Explanation of the likely impact on AS of a collapse in commodity prices is necessary to gain full credit.	
2 (e)	**Extract 11 suggests that slowing growth in Singapore is due to a 'confluence of short-term cyclical headwinds, as well as longer-term structural issues'. Discuss the relative importance of cyclical and structural factors in causing growth to slow down.** *Question Analysis:* *The severity of the recession triggered by the 2008 financial crisis and the sluggishness of the subsequent recovery (including the slowdown in growth of economies relatively unaffected by the events) have raised questions about the relative weight of structural and cyclical factors that may impact the growth and employment in an economy. A small and open economy like Singapore is spared from neither. Cyclical factors have to do with the upturns and downturns of the economic cycle of expansion and contraction. While cyclical factors tend to be relatively short-lived and may be easily offset by an appropriate fiscal or monetary stance (e.g. fiscal and monetary stimulus during periods of recession), structural factors are more deep-seated and long-lived and are not easily overcome by such policies. The latter is commonly associated with the 'supply-side' of the economy, which determines a country's productive capacity (recall PPC and the vertical segment of the AS curve). These factors include infrastructure, quality institutions, workforce, level of education and training, labour and goods market efficiency, financial market development, extent of technological readiness, market size etc. Given Singapore's dependence on external demand for its exports, cyclical factors to do with an economic downturn in the economies of her major trading partners may cause export demand growth to slow and weigh on Singapore's economic growth. However if Singapore's market size (including foreign markets) is affected by a fall in trade volume due to China's rebalancing of its economy (transition towards domestic consumption away from investment as a source of growth will cause the overall level of imports to fall) or if Singapore embraced a growth model characterised by a shift towards innovation and technological utilisation, then such factors*	**9**

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	are structural in nature. The relative weight of the factors will then depend on the magnitude and duration of the cyclical and structural shocks, as well as, the ability of the government to provide an effective policy response to mitigate the effects (e.g. drag on growth and job creation). **Up to 1 mark** for quality use of an AD/AS diagram – correct labelling of axes, curves, equilibrium points, etc., and correct identification of the scenario – shift of AD and AS curves in the context of the Singapore economy. One possible diagram may be to illustrate a rightward shift in the AD curve moderated by a cyclical factor (e.g. fall in export growth) and a leftward shift in the AS curve due to a structural factor (e.g. increase in foreign worker levy), with a resultant increase in **Up to 5 marks** *explaining* each scenario, as follows: Slowing growth to do with a lower rate of increase in real national income. Cyclical headwinds have to do with the 'absence of a meaningful rebound in consumer confidence globally' that may explain the lack of a significant pick-up in consumer and investment spending as well as the slump in oil prices, among other possible factors. Firms and households in the economies of Singapore's major trading partners may hold back spending in the face of economic uncertainties and this translates to slower export growth for Singapore. Depressed prices of oil, largely a result of a slowdown in global growth, would also have caused a contraction of revenues for firms in oil and gas-related sectors in Singapore. This would make it difficult to sustain production and firms will be forced to cut back output and lay off workers. The net effect may be a smaller magnitude of increase in aggregate spending for Singapore, depending on how other components of AD may have changed. Structural factors include government policies (e.g. foreign worker levy hikes, incentives to promote innovation and enterprise) to undertake economic restructuring to shift to a growth model underpinned by innovation and technological utilisation, as well as issues to do with weak productivity growth, loss of competitiveness, rising inequality among businesses in adopting new technologies or exploiting technological developments, shrinking labour force etc. These may either add to short-term cost, result in the closure of less competitive firms or contribute to rising structural unemployment that will either cause AS to decrease or limit the expansion of productive capacity, including possible impacts on AD, the effect of which is to dampen growth. Any one factor each for cyclical and structural, if well-explained, is enough to gain full credit. An explicit link to a slowdown in growth is necessary to gain full credit.	

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L2	An answer that uses appropriate analysis to explain how cyclical and structural factors have caused Singapore's growth to slow down.	4-5
L1	An answer that merely describes how cyclical and structural factors have caused Singapore's growth to slow down.	1-3

In addition, **up to 3 further marks** for valid evaluative comment. This may be to focus on the magnitude and duration of the cyclical and structural shocks as well as the ability of the Singapore government to provide an effective policy response. While cyclical factors may ease, demand weaknesses in other countries may continue to be impacted by unforeseen events (e.g. political backlashes) that will likely prolong the already subdued global economic recovery. On the other hand, structural changes and developments taking place in the economy provide economic opportunities, apart from short-term disruptions. To the extent that firms are able to exploit them to their advantage and the government is able to ease the transition of the structurally unemployed to expanding sectors, the weight of structural issues may be less.

2(f) **12**

India has progressed towards a free-market economy that saw the government introduce policies that included a reduction of taxes and subsidies, removal of price controls and opening up domestic markets for foreign investment. The International Monetary Fund says India also needs active government intervention to increase infrastructure spending.

Assess the case for a greater reliance on the free market, rather than government intervention, to achieve economic growth and low unemployment.

Question Analysis:
Most of the countries in the world today are mixed economies, an economic system that is strongly based on free markets with varying degree of government intervention. A free-market economy relies on the price mechanism to coordinate the independent decision-making of countless consumers and producers and under competitive conditions, prices work as signals and incentives to determine resource allocation in achieving maximum social surplus. The pursuit of self-interest by economic agents gives rise to risk-taking, enterprise, innovation and investment, which leads to higher levels of output and possibly higher standards of living. It thus follows that, in progressing towards a free-market economy, governments will implement policies that encourage competition and remove impediments such as taxes & subsidies or price controls or wage legislation in both product and resource (labour) markets so as to allow competitive market forces to work freely to achieve greater efficiency in production (through innovation and exploiting technological gains), lower prices and improved quality, and a better allocation of resources, as well as

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	increased levels of output, or economic growth. A more competitive labour market will also improve the motivation for workers to work and incentives for firms to hire. Opening up domestic markets for foreign investment works on the same notion in that doing so will raise efficiency, facilitate the transfer of technology, skills and expertise that will allow for an expansion of a country's productive capacity. However free-market outcomes are not always positive. Issues to do with market failures, regional inequalities, income disparities among households and businesses abound. Government intervention, including the provision of infrastructure, investment in human capital, the provision of quality institutions (e.g. a well-developed banking sector, enforcement of property rights, legal recourse, transparency in information), the provision of a stable macroeconomic economy and the provision of a social safety net or income redistribution, may then be necessary to correct market deficiencies (such that the problems do not become serious enough to pose threats to an economy) and to create the conditions in which markets can function effectively. Of course government intervention can often be dogged with poor planning, excessive bureaucracy, and corruption. Assessing the case of a greater reliance on the role of free markets or government intervention may be to consider the stages of economic growth and development a country is in, prevailing economic conditions and particular needs or unique circumstances of a country. **Up to 2 marks** for quality use of an AD/AS diagram – correct labelling of axes, curves, equilibrium points, etc., and correct identification of the scenario – shift of AD and AS curves – in achieving economic growth and low unemployment. Appropriate references should be made to the economies of India and Singapore in discussing the relevance of free market policies and government intervention in achieving economic growth and low unemployment. Outline factors that may weigh on growth and unemployment in India and Singapore. Explanation of how free-market policies in the context of the Indian and Singapore economy may be able to achieve economic growth and low employment. This may be to explain the benefits of opening up domestic sectors for foreign investments and adopting a model of growth based on enterprise, innovation and technological adoption. In the case of India, it also has to do with the removal of price controls, including subsidies and taxes as well as paring down state-led investments. The effect of these may be to improve efficiency in resource allocation, long-term competitiveness and allow for an expansion of productive capacity. AD/AS diagram to illustrate Explanation of disadvantages and weaknesses of free-market policies that include income disparities, environmental externalities, as well as the lack of institutional and infrastructure support that may render such policies ineffective.	

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Explanation of the role of government intervention to do with infrastructure provision, investment in human capital, macroeconomic stabilisation, provision of a social safety net etc. Education and health have significant external benefits, thus calling for government intervention (such as direct provision) that increases the consumption of both. Education and health are major factors behind increases in productivity that contribute to economic growth. Where the private sector may not be able to provide for, governments may need to invest in human capital to address emerging skill gaps and to equip workers with relevant industry skills that are in demand. Infrastructure as a type of physical capital, includes water supplies, sanitation and sewerage, power, communication, transportation, roads, irrigation, and many others. All of these play a very important role in promoting economic growth, apart from a direct contribution to improved standards of living. Therefore, there is a strong role for governments in order to ensure the provision of the appropriate kinds of infrastructure, with the appropriate access by the population. The dire need for such access is clearly evident in the case of India, where the severe shortfall in infrastructure expenditure has prevented the country from reaping the benefits of a transition to a free-market economy. Macroeconomic stabilisation is also critical to the creation of a conducive and stable environment for consumption and investment spending. This may take the form of appropriate fiscal or monetary stances as well as exchange rate intervention. The Singapore government adopts an exchange-rate-centred monetary policy that allows for a gradual and modest appreciation of the domestic currency, which effectively allows the government to mitigate the onset of inflation pressures via AD and AS channels. This has helped to keep inflation rates relatively low and achieving price stability is fundamental to Singapore's reliance on exports and foreign investment as sources of growth. To counter the effects of rising income disparities and the resulting impact on growth, governments also have to intervene with the provision of a social safety net as well as the implementation of policies to redistribute income.

L2	An answer that uses appropriate analysis to explain the role of free-market policies and government intervention in achieving economic growth and low unemployment.	6-9
L1	An answer that merely describes the role of free-market policies and government intervention in achieving economic growth and low unemployment.	3-5
L1	An answer that demonstrates some knowledge of free market policies and government intervention.	1-2

In addition, **up to 3 further marks** for valid evaluative comment. This may be to focus on the stages of economic growth and development a country is in, prevailing economic conditions and particular needs or unique circumstances of a country.

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	It is a fact recognised by many countries that it would be a huge mistake to think that any one country can take a blanket approach in pursuing free-market policies or government intervention. The approach taken by a country should be tailored to its economic needs and circumstances. It is likely that less developed countries or low income economies like India stand to benefit more from policies that are more interventionist in nature, provided since these countries are more likely to suffer from a lack of well-established institutions and education or healthcare systems as well as infrastructure support. As the country progresses to the next stage of growth, the government can play a lesser role and give fuller reign to market forces.	

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EUNOIA JUNIOR COLLEGE
JC2 Preliminary Examination 2018
General Certificate of Education Advanced Level
Higher 1

Economics

8823/01

Paper 1 Case Studies

11 September 2018

3 hours

Additional Materials: Answer Paper

READ THESE INSTRUCTIONS FIRST

Write your name, civics group and question number on the work you hand in.
Write in dark blue or black pen on both sides of the paper.
Begin your answer to each question on a fresh sheet of paper.
Do not use staples, paper clips, highlighters, glue or correction fluid.

Answer **all** questions.

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

This document consists of **8** printed pages

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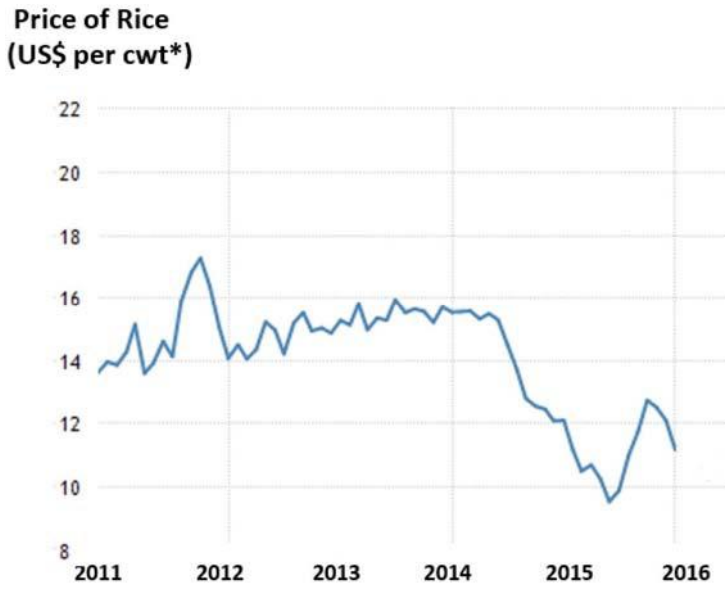
Question 1: Tackling Diabetes

Figure 1: World price of rice



* A hundredweight, Cwt, is a unit of measurement for weight used in certain commodities

Source: *www.tradingeconomics.com*, accessed 15.07.18

Extract 1: Global food prices drop to a five year low

Factors that are driving the sharp decline in international food prices include cheap oil that contributed to abundant global supplies of food in 2014, as well as prospects of a bumper crop for wheat, maize and rice in 2015. The agriculture and food sector continue to benefit from cheaper chemical fertilizer, lower fuel and transportation costs brought on by the previous year's oil price declines.

Between August 2014 and May 2015, wheat prices plunged by 18%, rice prices dropped by 14% and maize prices declined by 6%. However, the arrival of El Nino, the appreciation of the U.S. dollar and the recent increase in oil prices could drive up food prices in the coming months.

Adapted from *The World Bank*, 1 July 2015

Extract 2: Challenges of the global rice market

As rice is one of the staple grains for a large number of the world's population and to ensure food security, reduce poverty and help traditional farmers adapt to the effects of climate changes, profitable rice cultures must survive on less land, with less water and with less labour. Thus, the rice production system must be more efficient, environmental-friendly and more equitable.

Rice yield per stalk of plant has fallen as a result of the decline in investments made in productivity research since the early 1990s. On the other hand, the areas used for rice cultivation in some of the biggest rice producing countries in the world have been decreasing greatly because the land was re-purposed for other needs, such as urban expansion as well as biofuel production. Also, water resources have become scarcer, and water is vital for traditional rice cultivation methods. In addition, labour hands are more difficult to find because young farmers are more interested in finding jobs in other industry sectors that are better paid.

The challenges that the rice industry has to face are complex, and involve the creation of sustainable strategies that will primarily enable the production needed to cater to the growing demand for rice due to rapid population growth, especially in the areas where traditional cultivation technologies are

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intensively used. Such strategies should also ensure profitable productions to keep rice prices at an affordable level for a growing consumer market.

Adapted from *AgronoMag*, 2 October 2017

Extract 3: Curbing diabetes in Indonesia

Diabetes, along with other non-communicable diseases (NCDs), is the leading cause of death in Southeast Asia. As a developing country, Indonesia is facing a double burden of diseases. In 2014, approximately 71 percent of deaths were attributed to NCDs and 6 percent of the total were due to diabetes. Yet, most of the population is still not aware of the urgency of combatting this disease.

There are 2 key reasons for the lack of urgency. Firstly, people still strongly believe that diabetes is a genetic disease; hence, they embrace the diagnosis as part of inevitable heritage from their ancestors. Secondly, it is because we live in what public health experts call an obesogenic environment — an environment that promotes gaining weight and one that is not conducive to weight loss. Jakarta is a perfect example. We have all gone through the phase of making life goals to work out more and eat healthily. But many of us have failed. Staying outdoors is out of the question due to severe pollution, and sidewalks are crowded with vendors and using private vehicle is much more comfortable than sharing public transportation. These aspects beyond our personal choice that directly — or indirectly — affect our population's health are called social determinants of health.

In response to the growing problem of obesity and diabetes, the government said that it will be making efforts to reduce dependency on rice by promoting other sources of carbohydrates. Although Indonesia is the world's third-largest rice producer, the country usually needs to import rice from Vietnam or Thailand to maintain stable prices and meet a huge rice demand at home. "This food diversification program is part of our effort to reduce people's dependency on rice," said Agung Hendriadi, head of the Agriculture Ministry's Food Sovereignty Agency. Among the alternative local foods promoted by the government are yam, arrowroot, cassava, corn and sago. According to data by the Agricultural Ministry, Indonesia's rice consumption per capita is estimated at 124 kilograms this year, which is considerably higher than Malaysia (80 kg), Thailand (70 kg), Japan (50 kg) and South Korea (40 kg).

Adapted from *Indonesia Expat*, 26 October 2017

Extract 4: Mexico's sugar tax

Mexico has high rates of obesity – more than 70% of the population is overweight or obese – and sugar consumption. More than 70% of the added sugar in the diet comes from sugar-sweetened drinks. Coca-Cola is particularly popular and holds a place in the national culture.

Mexico's sugar tax appears to be having a significant impact for the second year running in changing the habits of a nation famous for its love of Coca-Cola, and will encourage countries troubled by obesity and contemplating a tax of their own.

An analysis of sugary-drink purchases, carried out by academics in Mexico and the United States, has found that the 5.5% drop in the first year after the tax was introduced was followed by a 9.7% decline in the second year, averaging 7.6% over the two-year period. The tax, which is just 1 peso (4p) per litre of sugary drink, had its biggest impact on the poorest households, where the decline in purchases was 18.8ml per person per day in 2014 and 29.3ml in 2015.

Health experts worldwide have been watching the progress of the Mexican tax closely because it could potentially lower the rates of obesity-related diseases and type 2 diabetes in a country with a population of more than 122 million. The Euromonitor International suggested that the Mexican tax may be too low to have the desired effect and that a higher tax introduced in Berkeley, California, has been a bigger success.

The taxes are a headache for US drinks manufacturers such as Coca-Cola and Pepsi that are struggling to diversify their businesses into healthier foods and drinks as they face declining

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consumption of their core products. The US beverage industry has lobbied heavily against the taxes, saying it would hurt jobs and that sugar taxes do not work.

Adapted from *The Guardian*, 22 February 2017

Questions

(a) **(i)** With reference to Figure 1, summarise how the world price of rice changed from 2011 to 2016. [2]

(ii) Using a demand and supply diagram, explain **two** possible reasons for your observation. [4]

(b) Extract 2 states that there was a re-purposing of land. Identify the choices available and the opportunity cost of such a decision. [2]

(c) Explain how a rise in the productivity levels of rice farming may affect resource allocation in the market for biofuels. [4]

(d) **(i)** With reference to Extract 3 and using an appropriate diagram, explain why the market for rice fails. [5]

(ii) Explain how the Indonesian government's food diversification programme mentioned in Extract 3 may impact the economy, and comment on the likely impact on its standard of living. [7]

(e) Analyse how Mexico's sugar tax would harm the US drinks manufacturers and employees, and discuss briefly whether it is inevitable that the US drinks manufacturers will be adversely affected. [9]

(f) Using evidence from the case study and/or your own knowledge, discuss whether the best course for Indonesia is to follow Mexico's policy of taxation in its push to discourage Indonesians from consuming rice. [12]

[Total: 45]

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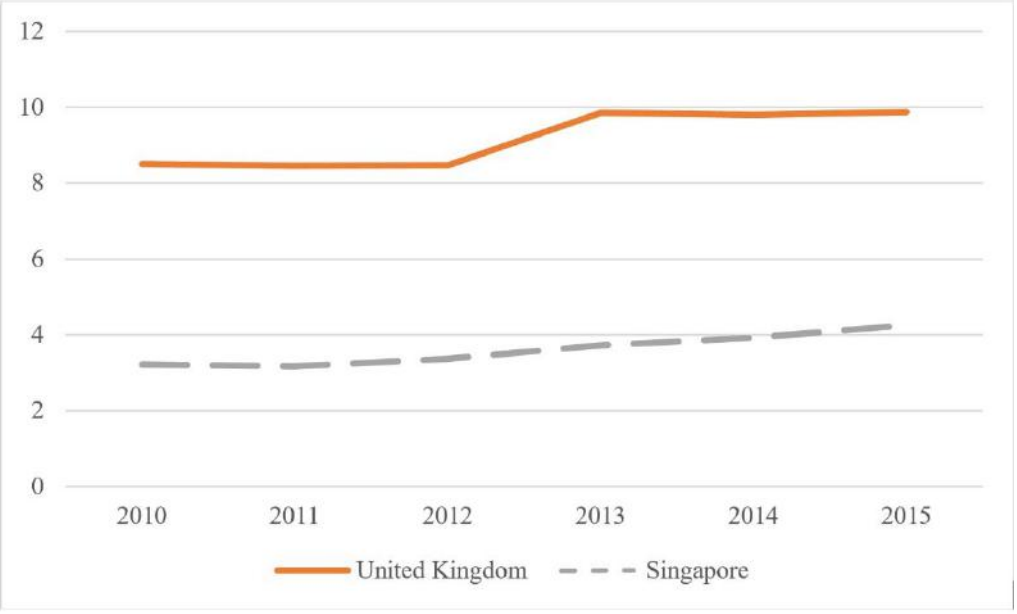
Question 2: Taking Care of the Young and Aged

Figure 2: Life Expectancy of Singapore and UK (in years)

	2010	2011	2012	2013	2014	2015	2016
Singapore	81.5	81.9	82.1	82.4	82.6	82.9	83.0
UK	80.4	80.9	80.9	81.0	81.3	81.0	81.0

Source: *Singstat* and *World Bank*, accessed 20.07.18

Figure 3: Healthcare expenditure (as % of GDP)



Source: *World Bank*, accessed 12.07.18

Table 1: UK nominal interest rate and inflation rate

	2012	2013	2014	2015	2016
Nominal interest rate (%)	0.5	0.5	0.5	0.5	0.5
Inflation rate (%)	3.5	3.0	1.9	0.0	0.3

Source: *www.tradingeconomics.com,* accessed 20.07.18

Extract 5: Young people's debt

Young people are building up debt and worrying about money in their first few years of adult life, but far too few are seeking advice when they fall behind. The report reveals that 18- to 24-year-olds are building up significant debts at a relatively early age and suffering widespread money worries, despite most trying to budget and actively manage their personal finances. It found that 37% are already in debt, owing an average of just under £3,000 which excludes any student loans or mortgages. Over half of adults under 25 report that they regularly worry about money, with 21% admitting they lose sleep as a result. There is now more reason to

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worry about ballooning debts given that inflationary pressures have eased in recent years, to bring real interest rates back to positive figures.

Adapted from *The Guardian*, 30 August 2016

Extract 6: Successful aging in Singapore

The Singapore government launched Active Aging, a collection of measures put together to enhance the quality of life of the elderly. These measures include extension of re-employment age to 67 years old, so that elderly can be gainfully employed and continue to contribute to the economy. In addition, the government also announced the Silver Support Scheme which supplements the income of the bottom 20-30% of Singaporean workers aged 65 and above. This will enhance the purchasing power of these elderly. Not to forget, there will be a series of improvement made to existing infrastructures to encompass senior-friendly features, including traffic lights with the ability to extend crossing duration for seniors.

Adapted from *Ministry of Health*, *Successful Aging Action Plan*, 2016

Extract 7: Aging Britain

The UK's aging population has triggered concerns over how the country will cope in the future, with greater demands on healthcare and pensions. This is because of the large number of people who were born in the 1960s – who are due to retire in the next 20 years. By 2039, the number of people aged 75 and over is projected to rise to 9.9 million. More than two-fifths of national health spending in the UK is devoted to people over 65. The data shows that an 85-year-old man costs the National Health Service (NHS) about seven times more on average than a man in his late 30s. Health spending per person steeply increases after the age of 50, with people aged 85 and over costing the NHS an average of £7,000 a year.

Adapted from *The Guardian*, 1 February 2016

Extract 8: Tackling youth unemployment in the UK

There has been good economic news on a number of fronts for the UK. GDP growth has held up well in the third quarter, despite the uncertainty created by the vote for Brexit. Services and consumer spending have underpinned the resilience of the UK economy and the retail spending growth remained strong this month. These positive economic developments will be particularly helpful to younger workers. Just five years ago, the number of unemployed under 25 years old in the UK was over a million, and the figure has since dropped to around 625,000. But despite this progress, 16-24 year-olds still make up nearly 40% of the UK's unemployment total. If Britain could reduce the number of unemployed youths or NEETs ("Not in Employment, Education or Training") to match Germany's rate of 10.1%, it would add 2.3% to GDP, worth £45 billion.

In other words, young people are three times more likely to be unemployed than the rest of the working population. This is not a new issue, nor one confined to the UK. Finding a first job and starting a career has always been a difficult process. Young people may have good qualifications, but they do not have the same track record and life skills as older people with years or decades of experience behind them. Youth unemployment is a big problem throughout the Western world. Two policy messages stand out from the research.

First, vocational education and training is of critical importance – a system where young workers benefit from classroom teaching to raise their skill levels while they are in the early

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phase of their careers. This approach works particularly well in Germany, and the UK has a long tradition of apprenticeships. The UK government is committed to ensuring 3 million new apprenticeships between 2015 and 2020 and the broader objective is to put vocational training and apprenticeships on a par with graduate qualifications. UK education and training became too heavily skewed towards university qualifications and new apprenticeships are now rebalancing the system towards work-based training.

A second policy theme is to make sure that employers are engaged with young people and schools, so there is more familiarity with the world of work throughout the education system. This can include work experience, career advice, mentoring and community youth initiatives supported by business. In the early stages of their education, young people need to see the positive opportunities available in the business world – particularly in the dynamic areas linked to new technologies.

As for the causes of youth unemployment, there are views that older workers are displacing young workers. However, this is not supported by the research. Economies which offer good opportunities to workers over 60 generally also perform well in terms of employment training opportunities for young people. These economies tend to have more flexible labour markets and a culture of training and development at all age levels.

Nor can we blame high immigration for youth unemployment, here in the UK or elsewhere. Countries such as Germany, US, Canada and Nordic Countries, have also experienced high immigration. Immigration creates economic growth and employment which can benefit younger workers. The key issue is to make sure they are equipped to meet the challenge.

Adapted from *The Telegraph*, 26 October 2016

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Questions

(a) Summarise the trends in life expectancy and healthcare expenditure between Singapore and the UK from 2010 to 2015. [2]

(b) **(i)** What evidence is there in the data that real interest rates were negative in the UK? [2]

(ii) Explain the effects of negative real interest rates in the UK on the debts of its youths. [2]

(c) Using the concept of production possibility curve, explain how raising re-employment age in Singapore allows the overcoming of its constraints, and comment on whether this measure will be appropriate. [7]

(d) **(i)** Identify and explain **two** possible relationships between fiscal position, transfer payment and inclusive growth. [4]

(ii) Explain how rising youth unemployment and aging population may affect a government's ability to achieve the objective of inclusive growth. [5]

(e) Explain the following statement using economic analysis:

"Immigration creates economic growth and employment which can benefit younger workers." (Extract 8) [4]

(f) "As for the causes of youth unemployment, there are views that older workers are displacing young workers" (Extract 8). Discuss the validity of this statement. [8]

(g) Using information provided and/or your own knowledge, assess the effectiveness of the policies in addressing youth unemployment in the UK. [11]

[Total: 45]

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2018 JC2 H1 Economics Preliminary Examination Economics Paper 1
Suggested Answers, Mark Schemes

Case Study Qn 1

(a) (i) **With reference to Figure 1, summarise how the world price of rice changed from 2011 to 2016.** [2]

The world price of rice generally fell [1] over the period. However, it showed a (less significant) rise from 2011 to 2014 [1].

(ii) **Using a demand and supply diagram, explain two possible reasons for your observation.** [4]

One supply factor [1]:

- From Extract 1, there were decreasing costs of production for inputs in rice production like chemical fertilisers, fuel and transport due to the decreasing price of oil which was used to produce these inputs.

OR

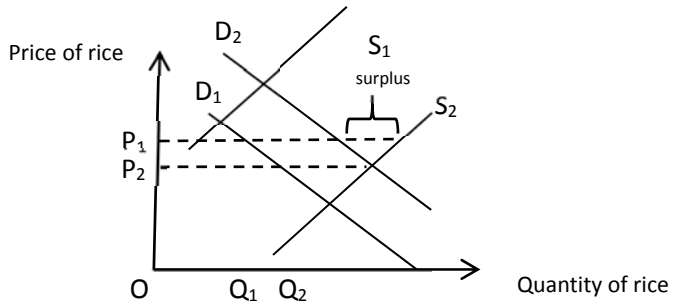
- There was good harvest for rice in 2015

Hence, the supply of rice increased significantly from 2015, causing the price of rice to fall sharply.

One demand factor [1]:

- From Extract 2, the demand for rice rose due to rapid population growth

Rise in ss > rise in dd → surplus → P falls [1] as shown in the diagram [1] below:



Acceptable answers include:

- the use of Extract 2 for supply falling (challenges faced by rice producers) and the increased demand from the population growth → shortage to explain the rise in price of rice for 2011-2014.
- The use of PED concept to explain the sharp fall in price of rice

Answer should not provide only 2 supply factors to explain the shortage/surplus.

(b) **Extract 2 states that there was a re-purposing of land. Identify the choices available and the opportunity cost of such a decision.** [2]

Choices are the urban expansion to grow the city and the land to be used to grow crops for biofuel production. [1] For opportunity cost, the benefits of the next best alternative sacrificed (eg. TR to producer) due to loss of rice output [1] must be specified.

(c) **Explain how a rise in the productivity levels of rice farming may affect resource allocation in the market for biofuels.** [4]

Rise in productivity means that with the same amount of inputs there will be higher output of rice. The supply of rice increases [1] causing the price of rice to fall [1], ceteris paribus i.e. no change in demand.

Rice farmers will face falling revenue since the demand for rice is likely to be price-inelastic (necessity) [1].

They will switch to growing other crops (competitive supply) which will provide higher revenue, for example, crops like corn for biofuels. Hence, more resources will move from rice production to the production of other crops for biofuels.[1]

Alternative answers are acceptable:

- As a result of the increased productivity in rice farming, the economy's production-possibility curve (PPC) shifts outwards. This meant it is now possible to increase rice production whilst more factor resources can be released into increased production of biofuels as well.
- Rice is also an input for biofuels. The fall in the price of rice will therefore mean a lower cost of production for biofuels using rice inputs. The demand for other crops for biofuels, e.g. corn, will face a fall in demand. Resources will be reallocated from the production of other crops into even higher rice production which is now more profitable for the biofuel producers.

(d) (i) **With reference to Extract 3 and using an appropriate diagram, explain why the market for rice fails.** [5]

According to Extract 3, the market for rice fails due to information failure (over-estimation of private benefit of consumption). Indonesians may underestimate the private costs of consuming rice as they are not be fully informed of the health risks of consuming rice such as developing diabetes. Extract 3 highlights that Indonesians generally think that diabetes is hereditary, rather than linked to dietary factors. [1] As a result, they underestimate the private costs of consuming rice. Because they do not fully appreciate the harmful effects (information failure) of rice, they will tend to over-demand rice ($D_{perceived} > D_{actual}$). [1]

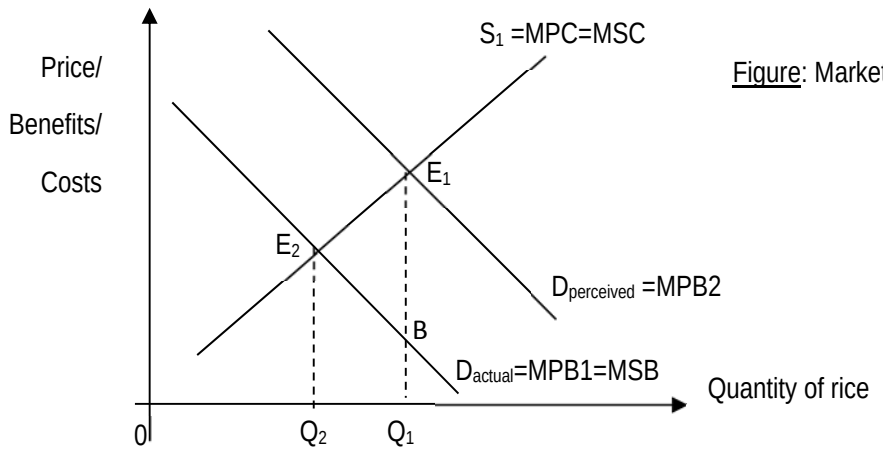


Figure: Market for rice [1]

If the consumers are aware of the true harm of consuming rice on themselves, the 'correct' level of demand, they would consume OQ_2, the socially efficient quantity of the good where MSB=MSC. However, due to the lack of information about how 'bad'

rice is, it results in individuals 'over-valuing' the product. Demand registered for rice is at a higher level of $D_{perceived}$ in the market. This leads to a level of production and consumption of OQ_1 that is above the socially efficient output level, OQ_2. [1] The overconsumption of rice by Q_2Q_1 incur a deadweight loss of E_1E_2B on society as the cost of consuming Q_1Q_2 amount ($E_1Q_1Q_2E_2$) exceeds the benefit that society enjoys ($BQ_1Q_2E_2$) [1]. The market has therefore failed to allocate resources efficiently such that society's welfare is not maximised.

[Market failure analysis based on rice as a demerit good is also accepted.]

(ii) **Explain how the Indonesian government's food diversification programme mentioned in Extract 3 may impact the economy, and comment on the likely impact on its standard of living.** [7]

Diversification program is about persuading citizens to switch from consuming rice to other local food [1]→ fall in DD for imported rice → rise in DD for local food alternatives which are substitutes for imported rice[1].

Many Indonesian households spend more on local food alternatives → Rise in Cd → Rise in AD → assuming that Indonesian economy is operating near full employment level of output →multiplied rise in real national income, rise in GPL. [1]. Firms hire more factors of production to produce more goods → higher employment of labour. [1]

<u>Comment [up to 3m]</u>

- Rise in real national income → increase in households' purchasing power → material SOL improves.
- Greater domestic production of alternative foodstuff → environmental pollution → Indonesians may develop health problems such as breathing issues → non-material SOL may worsen
- Employment rises → greater job security, less stress→ non-material SOL might improve
- The decreased rice consumption will lower the risks of diseases like diabetes and the material (fewer sick days and higher incomes) and non-material (lower healthcare costs) standards of living will increase.

Take a stand: Overall SOL is likely to improve assuming environmental pollution is not significant. [Alternative stand is also acceptable.]

(e) **Analyse how Mexico's sugar tax would harm US drinks manufacturers and employees, and discuss briefly whether it is inevitable that US drinks manufacturers will be adversely affected.** [9]

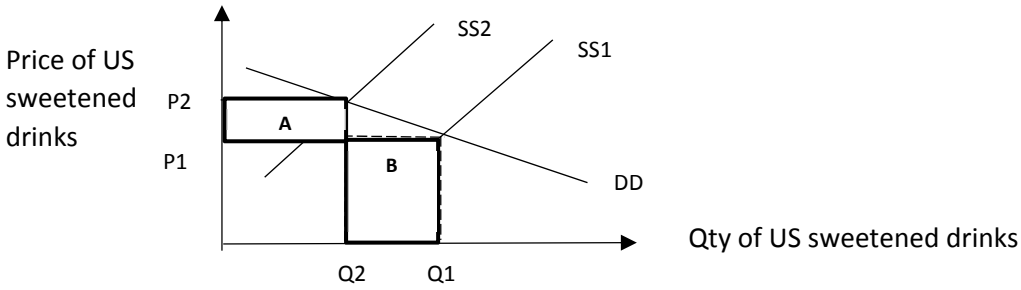
Content	Impact of a tax on firms' revenue and on jobs
Context	Consequences of a tax on firms and employees
Command	Assess + Discuss

'Harm' → US drinks manufacturers experience a fall in total revenue; workers in the US drinks industry may lose their jobs.

Mexico government imposes a sugar tax on sweetened drinks → rise in unit cop → fall in supply of US manufactured sweetened drinks from SS1 to SS2

→ shortage at initial price → rise in equilibrium price from P1 to P2, fall in equilibrium quantity from Q1 to Q2.

PED>1 due to avail of substitutes
→ a rise in price of sweetened soft drinks will lead to a more than proportionate fall in its quantity demand
→ total revenue gained due to a rise in price (Area A) < loss in total revenue due to a fall in quantity demanded (Area B)
→ overall, fall in total revenue earned by US drinks manufacturers.
Post-tax revenue will be even lower.



Fall in quantity demanded of sugar-sweetened drinks produced by US drinks manufacturers → Fall in demand for workers in US drinks industry → unemployment rises, wages earned by employed workers fall. Hence, the welfare of workers in the US drinks industry will be adversely affected. Extract 4 claims that the US beverage industry has lobbied heavily against the taxes, saying it would hurt jobs.

Discuss briefly:

US drinks manufacturers may not be adversely affected:

- Drinks manufacturers may diversify their businesses into healthier foods and drinks as highlighted in Extract 4
- Tax does not affect drinks manufacturers with no or little sugar content in their drinks; Such drinks manufacturers may experience a rise in TR as consumers switch from more expensive sugar-sweetened drinks to non/less sweet drinks

US drinks manufacturers may be adversely affected:

- Sales of sweetened drinks may be US drink manufacturers' core business
- Consumers may not like the taste of non/less sweet substitute drinks
- Diversification of drinks may require US drinks firms to incur higher R & D expenditure and thus costs

Take a stand: Whether it is inevitable that Mexico's sugar tax will adversely impact US drinks manufacturers depend on factors such as the success of the sales of its non/less sweet drinks and the ability of US drinks manufacturers to keep lower R & D costs.

	Knowledge, Application/ Understanding and Analysis
L2 (4-6m)	A well explained answer that explains the harmful impact of sugar tax on BOTH US drink manufacturers AND employees. Use of case study evidence is present.
L1 (1-3)	A descriptive answer that explains only the harmful impact of sugar tax on US drink manufacturers OR employees.

Discuss	Up to 3m to reach a reasoned judgement on whether it is inevitable that US drinks manufacturers and employees will be adversely affected.

(f) **Using evidence from the case study and/or your own knowledge, discuss whether the best course for Indonesia is to follow Mexico's policy of taxation in its push to discourage Indonesians from consuming rice.** [12]

Content	Micro policies to address excessive consumption of rice
Context	Government decision-making relating to choice of policies
Command	Discuss

Highlight aim of Indonesian government: To achieve allocative efficiency and equity in the rice market → helps to curb health problems such diabetes

Indonesia should follow Mexico's policy of taxation:

(1) **Explain how indirect tax corrects allocative inefficiency in market for rice**.

Indirect tax on rice → rise in unit cop → fall in supply of rice from S1 to S2 until Q2 is achieved → deadweight loss is eliminated → allocative efficiency in the market for rice is achieved.

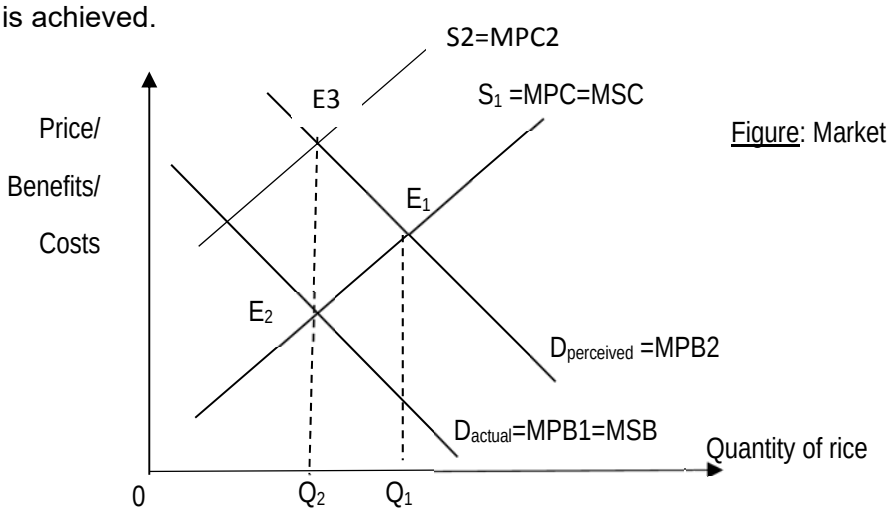


Figure: Market for rice

(2) Strengths of an indirect tax:

- Effective tool at reducing rice consumption of middle or lower income groups that forms a significant proportion of population in Indonesia, as in the case of Mexico (Extract 4)
- Internalises external cost in consumption → rations out those who are unable &/or unwilling to internalise the external cost through higher price
- Flexible method that changes incentive to consume in market → affects behaviour of consumers as in case of Mexico (Extract 4)
- Source of tax revenue for Indonesian government → greater ability to provide subsidies for healthcare or other merit goods to enhance society's welfare

Indonesia should not follow Mexico's policy of taxation:

(1) Limitations of an indirect tax:

- Government failure → overestimation of size of indirect tax → problem of over-taxation may lead to greater societal welfare loss
- Does not directly target at correcting info failure, obesogenic environment that is highlighted in Extract 3

- Demand for rice is price inelastic (i.e. rice is a necessity as indicated in Extract 3) → a tax may be ineffective as a rise in the price of rice leads to a less than proportionate fall in quantity demanded of rice.
- Higher prices of rice → less affordable → worsens problem of inequity

(2) Recommend alternative policy:

Root cause of problem seems to be information failure as highlighted in Extract 3 → Government should carry out educational campaigns that targets at correcting imperfect information

→ If successful, DD for rice falls as people adopt a healthier lifestyle by consuming less carbohydrates→ corrects problem of overconsumption of rice & thus allocative inefficiency in the rice market, reduced problem of inequity as the price of rice falls.

Evaluative conclusion:

Whether Indonesia should follow Mexico's policy of taxation in its push to discourage Indonesians from consuming rice may depend on severity of the market failure in the case of rice. If the market failure is severe (which may be evidenced by diabetes as the leading cause of death in Southeast Asia as highlighted in Extract 3), the Indonesian government may need to consider Mexico's policy of taxation to deter its citizens from consuming rice, especially if the current food diversification program is unsuccessful. However, as the nature of rice in Indonesia is likely to be different from that of sweetened drinks in Mexico, the indirect tax on rice needs to be significantly large for it to be effective at discouraging the quantity demanded of rice. Indonesian government should also complement the tax policy with other policies such as campaigns such as on educating the public on living a healthy lifestyle so as to effectively address the root cause of market failure.

	Knowledge, Application/ Understanding and Analysis
L3 (6-9)	An answer that explains why Indonesian government should AND should not follow Mexico's policy of taxation in its push to discourage Indonesians from consuming rice. Good use of case study evidence is present.
L2 (3-5)	A descriptive answer that may explain only why the Indonesian government should OR should not follow Mexico's policy of taxation in its push to discourage Indonesians from consuming rice. Little or no use of relevant case study evidence.
L1 (1-2)	A vague answer or listing of points on why Indonesian government should and/or should not follow Mexico's policy of taxation in its push to discourage Indonesians from consuming rice
	Evaluation
E2 (2-3)	Judgement with reasoned justification
E1 (1)	Judgment without reasoned justification

CSQ2 – Suggested Answers and Mark Scheme

(a) **Summarise the trends in life expectancy and healthcare expenditure between Singapore and the UK from 2010 to 2015.** [2]

Both healthcare expenditure and life expectancy **increased** for **both** countries. [1]

However, Singapore's life expectancy was **higher than** the UK's, despite spending a **smaller** proportion of GDP on healthcare. [1]

OR, Singapore's life expectancy **rose faster**, while healthcare expenditure as a percentage of GDP **rose slower** than the UK's. [1]

(b) (i) **What evidence is there in the data that real interest rates were negative in the UK?** [2]

Given that real interest rates is equal to nominal interest rates minus inflation rates (or, real interest rates is nominal interest rates which take into account inflation) [1], Table 1 suggests that real interest rates were negative from 2012 to 2014, since nominal interest rates were lower than inflation rates during the period [1].

(ii) **Explain the effects of negative real interest rates in the UK on the debts of its youths.** [2]

Interest rates represent **cost of borrowing for debtors**. [1]

With negative real interest rates, the **interest repayment in real terms falls**, hence eroding the real value (or opportunity costs) of debt over time. [1]

(c) **Using the concept of production possibility curve, explain how raising re-employment age in Singapore allows the overcoming of its constraints, and comment on whether this measure will be appropriate.** [7]

<u>[Total 4 marks] for explanation</u>:

PPC shows the maximum combinations of two goods and services a country can produce within its geographical boundary in a year, when all resources are fully and efficiently employed at current state of technology. This also represents the constraint arising from scarcity, as the economy would be unable to consume combinations of goods beyond its PPC. [1]

Raising the re-employment age allows elderly to remain in the workforce and **expand the amount of labour available** in the economy. [1] This would serve to

increase the economy's productive capacity (shifting the PPC outwards) assuming these elderly workers are perfectly substitutable in the production of either goods or services. [1] Therefore, **more goods and services could potentially be produced and consumed** by Singaporeans. [1]

[Up to 3 marks] for comment: *Candidates' comments should link back to the question on overcoming constraints.*

(Note that the below is non-exhaustive, and marks are awarded based on the presence of (i) a clear stand, and (ii) strong justifications for it.)

- This measure is appropriate in overcoming Singapore's constraints as it effectively increases the amount of labour available in the economy, in the context of ageing population.
- However, increasing re-employment age does not necessarily ensure jobs are secured for these elderly. In the event that the elderly are not able to secure employment e.g. due to skill mismatch, they would represent idle resources which suggests the economy might be consuming at a similar initial point within the PPC.
- Another possible limitation may be the nature of work available for the elderly. The wages offered may be meagre, and the elderly may be unwilling to re-enter the workforce. Hence, there must be policies such at the Silver Support Scheme for the bottom 20-30% of Singaporean workers aged 65 and above (Extract 6), to encourage participation in the labour force through wage supplement by the government.
- Also, there is a real limit to how much higher the re-employment age can go for someone to still be in a position to contribute meaningfully through work.
- Furthermore, the skillset of the elderly may have be lost over time. Hence, there will need to be necessary support for reskilling and upskilling for these elderly, such as through SkillsFuture initiatives on retraining.

(d) (i) Identify and explain two possible relationships between fiscal position, transfer payment and inclusive growth. [4]

Possible answers: *Candidates should (i) state the relationship, or describe how the entities are related, and (ii) explain the relationship.*

(Below are possible answers, but candidates are required to identify and explain two distinct relationships between two entities, to gain full credit. Alternatively, fully explaining how all three entities are related can also gain full credit.)

- Fiscal position and transfer payment share an inverse relationship. / An increase in transfer payment worsens the fiscal position. / A reduction in transfer payment improves the fiscal position. [1]

  An increase in transfer payment such as welfare benefits represents an increase in government expenditure and hence worsens the fiscal position (either increase in fiscal deficit, or decrease in fiscal surplus). [1] (Or vice versa).

- Fiscal position and transfer payment share a positive relationship. / An improvement in fiscal position can facilitate an increase in transfer payment. / A worsening fiscal position can lead to a reduction in transfer payment. [1]

Since fiscal position is measured by government revenue minus government expenditure, an improvement in fiscal position (either increase in fiscal surplus, or decrease in fiscal deficit) means an increase in government ability to fund transfer payments such as welfare benefits. [1] (Or vice versa).

- Transfer payment and inclusive growth share a direct relationship. / An increase in transfer payment promotes inclusive growth. [1]

  As economic growth takes place, the government collects more tax revenue (e.g. income tax revenue due to the progressive income tax system) which it can then use to finance more transfer payments for the lower income group. This ensures that the benefits of growth is enjoyed by the majority, thereby achieving inclusive growth. [1]

- Fiscal position, transfer payments and inclusive growth share a direct relationship. / An improvement in fiscal position facilitates an increase in transfer payments, which promotes inclusive growth. [2]

  Since fiscal position is measured by government revenue minus government expenditure, an improvement in fiscal position (either increase in fiscal surplus, or decrease in fiscal deficit) means an increase in government ability to fund transfer payments such as welfare benefits. As economic growth takes place, the government collects more tax revenue (e.g. income tax revenue due to the progressive income tax system) which it can then use to finance more transfer payments for the lower income group. This ensures that the benefits of growth is enjoyed by the majority, thereby achieving inclusive growth. [2]

(ii) Explain how rising youth unemployment and aging population may affect a government's ability to achieve the objective of inclusive growth.

[5]

<u>Define 'inclusive growth'</u>:
Inclusive growth refers to sustained economic growth with assurance that all sectors of the economy would be able to enjoy the benefits of the growth. [1]

<u>Explain how growth could be affected</u>:

- Rising youth unemployment worsen outlook on the economy as the young graduates are unable to secure a job. The high unemployment will erode average household income levels and generally lower the desire to consume big-ticket items. Hence, autonomous consumption falls leading to a fall in AD and real national income through multiplier effect. [2]
- OR, Aging population typically leads to a shrinking labour force as more workers retire. The smaller labour force will limit the productive capacity of the economy and result in a smaller expansion of LRAS. This would hamper future economic growth as any increase in AD may lead to demand-pull inflation instead of an increase in real national output. [2]

<u>Explain how distribution of income could be affected</u>:

- A reduction in economic growth will worsen the government's fiscal position, since less tax revenue will be collected in the form of income tax, and more government spending will need to occur to provide unemployment benefits. As such, this reduces the government ability to spend on income redistribution, such as on skills and training subsidies or wage subsidies to uplift the low-skilled low-wage workers. [2]

(e) **Explain the following statement using economic analysis:**

"Immigration creates economic growth and employment which can benefit younger workers." (Extract 8) [4]

Immigration increases the population size of the economy and stimulates consumption component of the AD. [1] This serves to increase AD and therefore real national income through the multiplier process. As such, the increase in real national income reflects actual growth. [1] Furthermore, the increase in supply of labour expands the productive capacity of the economy, causing LRAS to increase, thus resulting in potential growth. [1] As AD rises, the firms will experience an unplanned fall in inventory, which is a signal to step up production. In doing so, the firms may have to hire more labour (derived demand) and thus a fall in cyclical unemployment. This benefits the younger workers as more job opportunities will be made available. [1]

(Other reasons for an increase in AD, e.g. increase in I which leads to actual growth and creates employment opportunities are acceptable, as long as candidates could explain the link from immigration.)

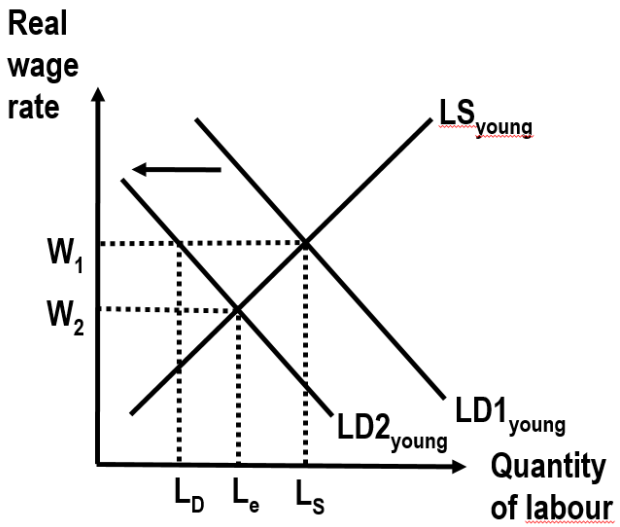
(f) **"As for the causes of youth unemployment, there are views that older workers are displacing young workers" (Extract 8). Discuss the validity of this statement.** [8]

Content	Causes of youth unemployment
Context	Youth unemployment in the UK
Command	Discuss + Evaluate

<u>Thesis</u>: ***Older workers displace young workers to bring about youth unemployment*** (use labour market analysis to explain case evidence)

- Older workers have relevant working experience, life skills and deeper skills and competencies (Ext. 8 Para 2) → more productive → more employable than young workers → increase in demand for older workers and fall in demand for young workers.
- In the youth labour market (Figure 1), fall in labour demand from $LD1_{young}$ to $LD2_{young}$ → surplus of labour (L_DL_S) at the original wage rate W_1, due to wage rigidity. Thus, youth unemployment results.

Figure 1: Fall in demand for young workers

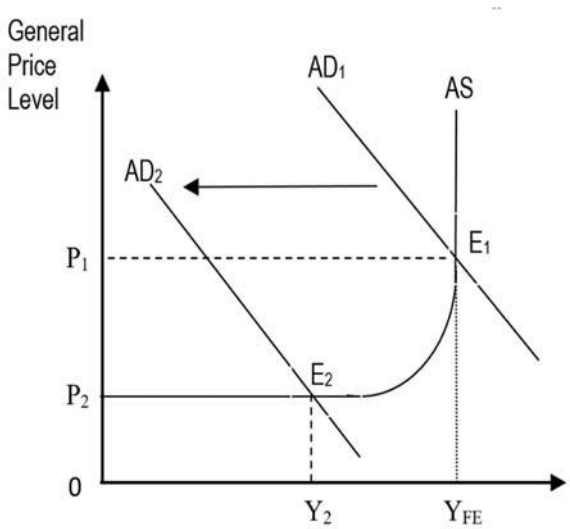


Anti-thesis: ***Other causes of youth unemployment***

i. Demand-deficient unemployment

- Fall in AD from AD_1 to AD_2 → unplanned increase in firms' stocks → firms reduce production → firms reduce demand for labour (since labour is a derived demand) → demand-deficient unemployment as represented by the output gap Y_2Y_{FE} in Figure 2.
- There is reason to believe that young workers in particular, will be laid off first during a fall in AD, since they are less valuable to the firms given their relative lack of work experience and skills. In contrast, Ext 8 Para 1 suggested that positive economic developments – in terms of GDP growth driven by greater services and consumer spending, were particularly helpful to younger workers in boosting their employment.

Figure 2: Demand-deficient unemployment



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ii. Frictional unemployment

- Labour market imperfections → workers ignorant of available job opportunities, while employers are not fully informed about what labour is available → lengthens the search time taken for someone in between jobs → unemployed for a period of time while they are searching for a new job → frictional unemployment.

- In particular, the youths may be unfamiliar with the world of work, the positive opportunities available particularly in the dynamic areas linked to new technologies (Ext 8 Para 4) → so it takes them relatively longer to find out about available job opportunities.

iii. Structural unemployment

- Youths could also be unemployed if they do not possess the necessary skills which are in demand in the economy. The result is a mismatch of skills (arising from labour immobility) of the unemployed and the existing job vacancies.
- For example, if an economy develops and moves up the value chain due to change in production techniques → expansion of 'sunrise' industries (e.g. medical tech) and contraction of 'sunset' industries (e.g. life sciences) → if youths were trained in the life sciences skills when in school, but the life science industry has demised by the time they graduated, these youths will not possess the right skills to take on the vacancies in the medical tech industry → structural unemployment.

Level	Descriptors	Marks
L2	For an answer that explains how older workers displace young workers to cause youth unemployment, **AND at least one other cause** of youth unemployment, using analysis and where necessary, a diagram. Case evidence should also be used for the highest mark.	4 - 6 m
L1	For an answer that explains how older workers displace young workers to cause youth unemployment, OR at least one other cause of youth unemployment. Alternatively, for an answer that considers BOTH perspectives but is vague and/or descriptive, lacking in economic rigour.	1 - 3 m

In addition, there are a **further 2 marks for evaluation** i.e. to articulate and justify whether older workers replacing young workers is cause of youth unemployment.

- Youth unemployment is **multi-causal**, and not only caused by the old displacing the young. The young has skills (e.g. creativity) which are valued by employers as well.
- What matters more is that the young possesses skills which are relevant to the workplace (while frictional unemployment is temporary and unlikely to be significant).
- Depending on the **nature and state of the economy,** demand-deficient unemployment may be more significant/severe than structural unemployment.

(g) Using information provided and/or your own knowledge, assess the effectiveness of the policies in addressing youth unemployment in the UK.

[11]

Content	Policies to address youth unemployment
Context	Youth unemployment in the UK
Command	Assess + Evaluate

[Students to choose 2 of the 3 policies below to analyse and assess. Their choice should comprise policy 1 / 2 + 3 / 4 – i.e. one demand-management and one supply-side policy in total].

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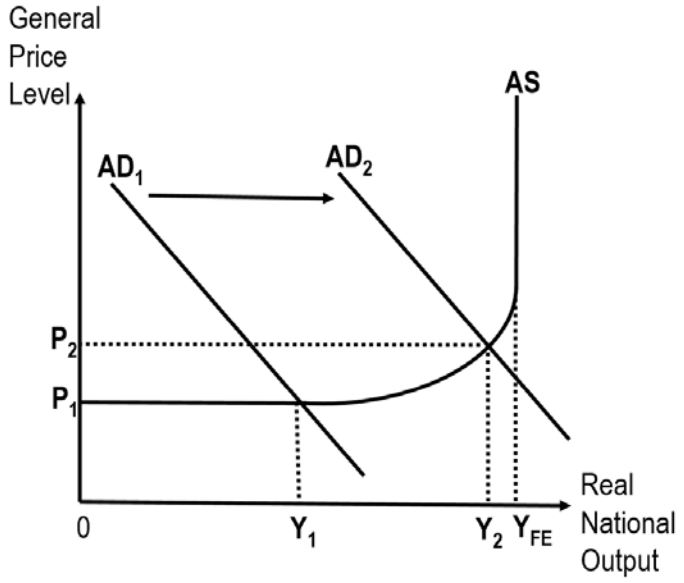
Policy 1: Expansionary FP to raise growth and create employment.

- Increase G, and/or reduce personal income tax and/or corporate income tax → increase in disposable income and/or increase in after-tax profits → increase in C and/or I → increase in AD from AD_1 to AD_2→ unplanned fall in firms' stocks → firms increase production → firms hire more labour since labour is a derived demand → narrowing of output gap from Y_1Y_{FE} to Y_2Y_{FE} in Figure 3.

Figure 3: Expansionary fiscal policy



- In hiring more labour, unemployed youths will become employed (Ext 8 Para 1: effects of increase in C on growth and lowering of no. of youth unemployed).

Policy limitations: *(non-exhaustive but the following outlines the key limitations based on contextual evidence)*

- Fiscal constraints limit the UK govt's ability to spend.
    - This is especially so in light of competing demands for increased govt spending, such as from the healthcare sector due to ageing population (Ext 7). Ageing population has resulted in a rise in govt spending and a fall in tax revenue (e.g. income tax revenue) as the elderly fall out of the workforce → worsening fiscal/budget position and possible fiscal/budget deficit.
    - Even if govt spending on the healthcare sector can generate growth and lower demand-deficient unemployment, it may not be the youths who become employed since they may not possess the right skills and knowledge to work in the healthcare sector where the job opportunities are generated.

- Uncertainties due to Brexit may limit the effectiveness of the policy.
    - Consumers do not increase C despite cuts in personal income tax raising their disposable income, as they would rather save for the rainy day in the event that the UK falls into a recession when Brexit is effected.
    - Firms do not increase I despite cuts in corporate income tax raising their after-tax profits, as they adopt a wait-and-see attitude before taking on long-term investments in the form of capital spending.

Policy 2: Expansionary MP to raise growth and create employment.

- Cuts in interest rate (i/r) → fall in cost of borrowing → consumers increase C as they purchase big-ticket items on credit, and firms increase I as previously unprofitable levels of investment become profitable → AD increases → *reduces demand-deficient unemployment in a similar fashion as expansionary FP does (see above and Figure 3).*

Policy limitations: *(non-exhaustive but the following outlines the key limitations based on the state of UK economy)*

- Uncertainties due to Brexit may limit the effectiveness of the policy.
    - Consumers and firms are unresponsive to the cuts in i/r due to poor confidence about the current and near-future state of the UK economy.

- Near-zero i/r limits the extent to which i/r can be cut to bring about the intended outcomes on employment.
    - The central bank has previously cut i/r repeatedly to boost the economy in the aftermath of the Great Financial Crisis. As recovery was slow and uncertain, expansionary MP has been used many times such that i/r is already low – with little room to cut it further to address youth unemployment.

Policy 3: Supply-side policy in the form of vocational education and training to address structural unemployment amongst youths

- The UK could re-emphasise the importance of apprenticeship to equip youths (during their schooling years and in the early phase of their careers) with the skills needed by the economy (Ext 8 Para 3) → increases their employability → increase supply of rightly-skilled youths → addresses mismatch between skills possessed by youths and job opportunities available → reduces structural unemployment.
- The UK government is committed to ensuring 3 million new apprenticeships between 2015 and 2020, so the large scale at which the policy is being rolled out may prove it effective.

Policy limitations: *(non-exhaustive but the following outlines the key limitations based on contextual evidence)*

- Response time lag may limit the effectiveness of the policy.
    - Long response time lag due to the need for mindset change amongst both youths and employers. Ext 8 Para 3 states the govt objective of putting vocational training and apprenticeships on a par with graduate qualifications. This signifies an entrenched mindset that graduate qualifications are more superior than vocational qualifications. If mindsets remain unchanged, the youths will not take up the vocational training opportunities, while employers will not be keen to hire vocationally-trained youths, both rendering the policy ineffective.

- Govt failure may limit the effectiveness of the policy.
    - The UK govt may lack complete info on the skills needed by the economy → vocational training and education may not be in the skills which the economy requires → mismatch of skills persists.

Policy 4: Supply-side policy to improving labour market info to address frictional unemployment amongst youth.

- Govt intervene by providing platforms for employers to be engaged with young people and schools, so there is more familiarity with the world of work throughout the education system. This can include work experience, career advice,

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mentoring and community youth initiatives supported by business. (Ext 8 Para 4) → ease information flows between youths and potential employers → reduce search time → reduce frictional unemployment.

Policy limitations:
- Effectiveness depends on employers' and students/prospective workers' attitudes and responsiveness.
    - Both students and employers must be receptive towards the use of the platforms created by the govt, which would otherwise be utilised.

Level	Descriptors	Marks
L3	For an answer that analyses **at least two policies (including one demand-management and one supply-side policy) and their limitations** in addressing youth unemployment, in the UK context. Use of relevant diagram(s) is present.	**6 - 8 m**
L2	For an answer that lacks scope (i.e. only one policy and its limitations, OR two policies without limitations); OR an answer that lacks depth (i.e. two policies and their limitations but not fully analysed).	**3 - 5 m**
L1	For an answer that is vague and/or descriptive, lacking in economic rigour.	**1 - 2 m**

In addition, there are a **further 3 marks for evaluation** i.e. making a stand on how effective policies adopted were, considering the following (again, non-exhaustive):
- ***Root causes.*** Ultimately, the effectiveness of the policies will depend on whether the right policy is being used for the right type of (and hence cause of) youth unemployment. Given the multi-causal nature of youth unemployment in the UK, a range of policies should be adopted in tandem in order to reduce youth unemployment.
- ***State of economy.*** Since growth in uncertain and confidence amongst consumers and firms is weak in the UK, the govt needs to push through with the expansionary FP/MP to bring about any intended outcomes in the ***short-run,*** and at the same time, commit to the ***long-run*** supply-side policy on vocational training and education to boost confidence.
- ***Other suggestions (to mitigate policy limitations).*** The govt will need to consider how to speed up the change in mindsets towards vocational training and education as it can be a key limitation on the effectiveness of the supply-side policy. This can be done through working more closely with the schools and labour unions to persuade them of the value of vocational training and education.

HWA CHONG INSTITUTION
C2 Preliminary Examination
Higher 1

CANDIDATE NAME		**CT GROUP**	**17**
CENTRE NUMBER		**INDEX NUMBER**	
TUTOR NAME			

ECONOMICS
Paper 1

8823/01
13 September 2018
3 hours

Additional Material: Answer Paper

READ THESE INSTRUCTIONS FIRST

Write your **name, civics group, centre and A level index numbers** clearly in the spaces at the top of this page and on every page you hand in.

Please indicate your **economics tutor's name** on the first page of your answer script for both questions.

You are required to submit your answer script for question 1 and question 2 separately.

Please answer question 2 on a new sheet of paper.

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 and tape.

Answer **ALL** questions.

At the end of the examination, fasten question 1 and question 2 answer scripts separately with the strings provided.

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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Section A

Answer **all** questions**.**

Question 1 **Water Woes**

Extract 1: Four billion people face severe water scarcity

A new research has revealed that at least two-thirds of the global population, over 4 billion people, live with severe water scarcity for at least one month every year. Besides, 500 million people live in places where water consumption is double the amount replenished by rain for the entire year, leaving them extremely vulnerable as underground water run down.

Small economies like Singapore is inevitably affected given the limited water resource. However, larger economies such as Thailand is also not spared by this crisis.

Source: *The Guardian*, 12 Feb 2016

Extract 2: Water price hike in Singapore

Water prices in Singapore will increase for the first time in 17 years. The government determined prices will go up by 30 percent in two phases. The first hike will be from July 1 in 2017, and the second from July 1 in 2018.

"Water prices were last revised in 2000, almost 20 years ago. We need to update our water prices to reflect the latest costs of water supply," Finance minister Mr Heng said in the 2017 Budget speech in Parliament.

The country gets water from four National Taps - NeWater, water from local catchment areas, desalination and imported water.

Linggiu Reservoir in Johor supplies about 60 percent of Singapore's water needs. With more unpredictable weather patterns, water levels at this reservoir have been falling and thus there is an urgent need to strengthen our local water sources. The price increase will go towards maintaining Singapore's water infrastructure, and more expensive sources of water such as desalination.

Singapore now uses 430 million gallons of water a day, with the domestic sector (households) accounting for 45 percent, and the non-domestic sector (businesses), the rest. Water demand is expected to more than double by 2060 in tandem with population and economic growth, and every additional drop of water will have to come from more expensive water sources. In addition, the cost of water transmission has increased as Singapore lays deeper pipes in an urbanised environment. Hence the increase in price will reflect the true cost of water.

But lower and middle-income households will get help to manage the increase in water prices. Households in one-room and two-room flats will be receiving U-Save utilities rebates of up to $380 for the year, an increase of $120 from $260. Three-room flat households will get an increase of $100 in U-Save utilities rebates, four-room flats an increase of $80 and five-room flats $60. Executive and multi-generational flat households will get $40 more. These increases are permanent and will cost an additional $71 million a year. After subsidies, 75 percent of HDB households should see an increase of less than $12 a month in their water bills. Households in one-room and two-room flats will not see any increase in their bills, Mr Heng said.

Source: *The Straits Times*, 20 February 2017

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Table 1: Singapore revised water price for households and industrial users

	Households (potable water[1])				Industrial Users (non-potable water[1])	
	Price ($/ m^3)					
	Phase 1: From 1 Jul 2017		Phase 2: From 1 Jul 2018		Phase 1: From 1 Jul 2017	Phase 2: From 1 Jul 2018
Monthly Water Usage	0 – 40m^3	> 40m^3	0 – 40m^3	> 40m^3		
Water Tariff (i.e. Price of water)	$1.19	$1.46	$1.21	$1.52	$0.66	$0.66
Water conservation tax	$0.42	$0.73	$0.61	$0.99	-	-
Waterborne Fee[2]	$0.78	$1.02	$0.92	$1.18	$0.78	$0.92
Total Price of water	$2.39	$3.21	$2.74	$3.69	$1.44	$1.58

1. Potable water is water of a quality suitable for drinking, cooking and personal bathing and non-potable water is water that is not of drinking quality.
2. The Waterborne Fee (WBF) goes towards meeting the cost of treating used water and maintaining the used water network.

Source: *www.pub.gov.sg*, accessed 13 Aug 2018

Extract 3: Billion-dollar dams are making water shortages and contributing more towards global warming, not solving them

The world has spent an estimated $2 trillion on dams in recent decades, with each dam costing more than $1.5 billion. Many nations see dams as an important way to fight climate change – dams are built to control floods, improve irrigation, alleviate water shortages and generate low-carbon hydroelectricity to replace power stations that burn fossil fuel. But recent findings by experts seem to suggest otherwise.

Almost a quarter of the global population experiences significant decreases in water availability through human interventions on rivers, says Ted Veldkamp at Vrije University in Amsterdam, the Netherlands. Veldkamp and her colleagues found a drastic reshuffling of water-scarcity hotspots over time, with mostly people upstream benefitting from the capture of river flows, but those downstream left high and dry.

Richard Taylor, CEO of the UK-based International Hydropower Association, which represents many dam builders, dismissed the findings. “The major driver of building a reservoir is to store fresh water so as to smooth the irregularity of natural flows, absorb floods and guarantee minimum flows during drought periods,” he says. “These fundamental services are exclusively downstream benefits.”

Besides, hydroelectric dams contribute more to global warming than previously estimated, according to a study published in BioScience. Researchers found that rotting vegetation in the water means that the dams emit about a billion tonnes of greenhouse gases every year. This represents 1.3% of total annual human-caused global emissions. When considered over a 100-year timescale, dams produce more methane than rice plantations and biomass burning, the study showed.

“Methane stays in the atmosphere for only around a decade, while CO2 stays several centuries, but over the course of 20 years methane contributes almost three times more to global warming than CO2, a relevant period for policymakers,” she added.

Source: *New Scientist*, 15 June 2017 and *The Guardian,* 14 November 2016

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Extract 4: Thailand's drought crisis in 2016

Thailand is facing its worst drought in 20 years. Parts of the country are so dry that roads lining empty canals have collapsed. National park officials have built ponds to sustain wildlife, while irrigation officials are pumping water from the dregs of a dam. Bangkok's administrators announced in March they would be cutting short the April's Songkran festival - which normally draws hundreds of thousands of tourists to one of the world's biggest water fights.

The agricultural sector is often the first to be affected by droughts as production declines, especially in rice crop. Thailand is one of the world's top producers of rice, exporting more than 10 million tonnes annually. As a result of the drought, the Thai government has lowered its forecast rice exports for this year by 2 million tonnes. The fall in agricultural production due to the drought will cause an approximately 20 billion baht loss in purchasing power among farmers.

The drought is expected to cut economic growth by 0.6 to 0.8 of a percentage point this year. And if the dry weather continues after mid-year, the drought will expand further, encroaching the industrial, and tourism sectors, as well as the supply of water for human consumption. The damage could reach 154 billion baht and this is bad news for the government whose finances are already in the red.

However, every cloud has a silver lining. So with the drought crisis comes water-related business opportunities. Businesses related to water management, electronics equipment and systems for water technology, as well as other water-related businesses will be in high demand in the near future. Moreover, farmers who can adapt their agricultural lands to meet changing water resource conditions can start new businesses through knowledge-sharing with other farmers as the consultant.

Source: Various

Questions

(a) With reference to Table 1,

(i) compare the change in total price of water for households and industrial users from phase 1 to phase 2. [2]

(ii) explain **two** reasons why total price of water is higher for households than industrial users. [4]

(b) Use a demand and supply diagram and relevant elasticity concepts to explain why price of water in Singapore would have risen sharply without government intervention. [6]

(c) Explain why subsidising water for low-income households through U-save rebates can be justified on the grounds of equity and comment on whether such rebates are indeed equitable. [7]

(d) **(i)** Explain why price mechanism fails to produce public goods such as dams. [6]

(ii) Discuss the factors that a government should consider when deciding to build a new dam. [8]

(e) With reference to case materials and/or your own relevant knowledge, discuss the impact of the water crisis on Thailand's standard of living. [12]

[Total: 45]

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Question 2: Economic Issues and Policies in Singapore

Extract 5: Housing market in Singapore affected by US Fed's policy

United States (US) employment rose more than expected for the second month in a row in July 2016 and wages picked up, bolstering expectations of faster economic growth, and raising the probability of a Federal Reserve (Fed) interest rate increase this year. Non-farm payrolls rose by 255,000 jobs after an upwardly revised 292,000 surge in June, with hiring broadly based across the sectors of the economy, the Labour Department said on Friday. In addition, 18,000 more jobs were created in May and June than previously reported. Economists polled by Reuters had forecast payrolls increasing 180,000 in July and the unemployment rate dipping one-tenth of a percentage point to 4.8 percent.

"The July jobs report was everything you could have asked for and more. Provided the strength in jobs is confirmed with other economic data, the Fed will have sufficient reason to hike rates this year," said Michelle Meyer, a senior economist at Bank of America Merrill Lynch in New York. Last month's strong jobs growth should reinforce the Fed's confidence in a labour market that officials view as at or near full employment. Fed Chair Janet Yellen has said the economy needs to create just under 100,000 jobs a month to keep up with population growth.

With the Fed widely expected to start hiking interest rates next month, interest rates in Singapore would likely to head higher as well. Higher borrowing cost of housing loans is likely to disincentivise households to buy property. Hence, this weakens the housing market in Singapore and dampens the construction activities.

Source: *CNBC News*, 23 November 2016 and *Reuters*, 4 August 2016

Extract 6: Singapore adopts 2008 crisis policy in anticipation of economic slowdown

Most countries, including the United States and China, adopt an interest rate policy where central banks raise or cut interest rates. Singapore is the only major economy in the world to use the Singapore dollar nominal effective exchange rate (S$NEER), where it is managed against a trade weighted basket of currencies of her major trade partners. The Monetary Authority of Singapore (MAS) would adjust the pace of S$NEER appreciation or depreciation by changing the slope, width and centre of a currency band. 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 goods are imported.

Since October 2012, the broad policy stance has been of a "modest and gradual appreciation" of the Sing dollar. In anticipation of an economic slowdown in 2016, MAS unexpectedly eased its monetary stance in April 2016, adopting a policy last used during the 2008 global financial crisis, as economic growth in the trade-dependent city state ground to a halt. The MAS moved to a neutral policy of zero percent appreciation in the exchange rate. This means that MAS has flattened the slope of the band it uses to guide the S$NEER against an undisclosed trading basket, reducing the rate of appreciation to zero percent. The market had not been expecting the MAS to take such a bearish stance in its April meeting.

The announcement came two days after the International Monetary Fund (IMF) warned of the risk of negative shocks to the global economy. As Asia's financial hub, Singapore is feeling the effects of the global downturn and China's weakening economy. Soon after the release of news on the shift of policy stance, the Sing dollar tumbled to $1.36 levels to the US dollar, a sharp depreciation (within the currency band) from Wednesday's $1.35 levels. A similar trend was also observed for Sing dollar against the Malaysian Ringgit.

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A monetary easing follows an expansionary budget announced by Finance Minister Heng Swee Keat, indicating how severe authorities view the slowdown as businesses shut and growth in bank loans contract. The government spending is expected to be $5 billion higher than in 2015 and the increases are mainly for public infrastructure projects in the healthcare, education, security and urban development sectors.

"It seems that Singapore is using both fiscal policy and the exchange rate to address the situation," said Weiwen Ng, an economist with Australia & New Zealand Banking. Singapore's services industry, which makes up about two-thirds of the economy, contracted in the first quarter from the previous three months, the first decline since the first quarter of 2015 although manufacturing and construction rebounded strongly in the first quarter. "The economy remains mired in an extended spell of deflation and steadily lower growth," said Andrew Wood, an economist with BMI Research in Singapore. The currency adjustment was needed because "Singapore's competitiveness has taken a hit," he said.

Source: Various

Table 2: Selected Indicators of Singapore

	3rd Qtr 2015	4th Qtr 2015	1st Qtr 2016	2nd Qtr 2016	3rd Qtr 2016
GDP quarter-on-quarter growth rate at 2010 prices, seasonally adjusted	6.2	2.0	0.1	0.2	-4.1*
CPI (base year = 2014)	99.4	99.1	98.9	98.7	99.0^
Changes in employment ('000)	12.6	16.1	13.0	4.2	NA
Exports (year-on-year % change)	-8.0	-5.7	-11.6	-4.7	-3.4^
Imports (year-on-year % change)	-9.1	-9.9	-7.4	-6.7	-6.7^

*Advance estimates for 3rd Quarter 2016
^After implementation of zero percent appreciation of Sing dollar in April 2016

Source: *Ministry of Trade and Industry Singapore* and *MAS Macroeconomic review,* Oct 2016

Figure 1: Crude oil price per barrel in USD

Source: *US Energy Information Administration*

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Questions

(a) **(i)** Explain why interest rates in Singapore would likely to head higher when the Fed raises interest rates. [3]

(ii) Use demand and supply analysis to explain how an increase in interest rate mentioned in Extract 5 might affect the total revenue of the housing market and comment whether it would have the same impact on the construction industry. [5]

(iii) Explain the likely impact of a rise in US interest rates on Singapore's economic growth in the short run. [4]

(b) In the light of strong employment data mentioned in Extract 5, to what extent would you agree that the Fed should raise interest rates? [6]

(c) The government spending is expected to be $5 billion higher than in 2015 and the increases are mainly for public infrastructure projects in the healthcare, education, security and urban development sectors (Extract 6).

(i) With reference to Table 2, what can you conclude about the fourth quarter GDP growth rate if Singapore were to slip into a technical recession in 2016? [2]

(ii) Explain **two** reasons why the Singapore government chooses to increase spending on merit goods such as healthcare. [4]

(iii) Explain how increased government spending on infrastructure would affect the economic growth and employment of Singapore and comment on whether this would lead to conflicts between government macroeconomic objectives. [9]

(d) Using case evidence and/or your own relevant knowledge, discuss whether MAS should adopt zero percent appreciation of the S$NEER in anticipation of an economic slowdown. [12]

[Total: 45]

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End of Paper

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	© New Scientists, "Billion dollar dams are making water shortages, not solving them", 15 June 2017
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	©The Straits Times, "MAS monetary policy shifts – what's the significance", 14 April 2016
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(a)	With reference to Table 1,		
	(i)	compare the <u>change</u> in total price of water for household and industrial users from phase 1 to 2. Total price of water for household and industrial users increase. However, the total price of water for household users increase at a higher percentage as compared to industrial users	[2]
	(ii)	explain **two** reasons why total price of water is higher for households than industrial users. 2m for each reason <u>Water conservation tax</u> is included in the price of water for household users but not industrial users This is to reduce the consumption of potable water by households to cut wastage. <u>*Higher* waterborne fee (WBF)</u> is imposed on households compared to industrial users. The Waterborne Fee goes towards meeting the cost of treating used water and maintaining the used water network. In this case, more treatment is required to treat water for household consumption.	[4]
(b)	Use a demand and supply diagram and relevant elasticity concepts to explain why price of water in Singapore would have risen sharply <u>without government intervention</u>. • Explain a reason for a fall in supply with evidence together with price inelastic demand (up to 3m) • Explain a reason for a rise in demand with evidence together with price inelastic supply (up to 3m) • *Note: First two points will be a total of 5m.* • Combined effect with use of diagram (well-labelled) (1m) The demand for water in Singapore expected to rise from D1 to D2 as shown in diagram (1) due to an increase in number of consumers. Extract 2 states that "water demand is expected to more than double by 2060 in tandem with population and economic growth". (elaborate based on 1 factor) The supply of water is price inelastic due to the long time period needed to develop new water sources (e.g. to construct a new desalination plant) (or some other reasonable & contextually appropriate PES factor). Increase in demand → increase in P more than proportionately compared to Q The supply of water in Singapore is falling due to supply shocks. Extract 1 states that water levels at the Linggiu Reservoir in Johor, which supplies about 60 per cent of Singapore's water needs, have been falling due to more unpredictable weather patterns. OR The supply of water in Singapore is falling due to higher unit cost of production. Extract 1 states that Singapore uses more expensive sources of water such as desalination to diversity its water sources in view of severe water scarcity, especially evident fron fall in water level in Linggiu Reservoir in Johor. Furthermore, the cost of water transmission has increased as Singapore lays deeper pipes in an urbanized environment which is more costly. The demand for water is price inelastic as it is a necessity for basic survival (or some other reasonable & contextually appropriate PED factor).		[6]

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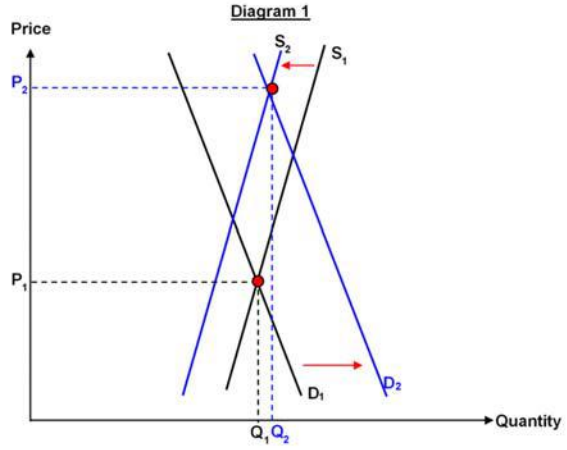
Decrease in SS → increase in P more than proportionately compared to Q

Combined analysis

Hence as shown in diagram 1 below, both factors reinforced each other and hence the market equilibrium price to increase sharply from P0 to P1.

Diagram 1



(c) Explain why subsidising water for low-income households through U-save rebates can be justified on the grounds of equity and comment on whether such rebates are indeed equitable. [7]

Explain (4m)

It can be justified on grounds of equity.

- Water is a basic good that should be made affordable even to low income households.
- However, in a free market, only those with the purchasing power/dollar votes will be able to have access/afford.
- Giving lump sum U-save rebates reduces the price of water and hence gives such households a basic level of purchasing power to ensure a basic level of consumption of water.
- From Extract 2, *"Households in one-room and two-room flats will not see any increase in their bills"* implies that they still will be able to enjoy their existing levels of water consumption after water price hikes, which does not affect them as rebates are provided.

L2 (3-4) Ability to explain how U-save rebates is justified on grounds of equity.
L1 (1-2) Brief explanation on equity (tends to be descriptive) without use of case evidence

Comment (3m):

However, such rebates may not be entirely equitable (may not achieve aim) as:

- The subsidies are based on type of housing rather than the more accurate measure of the household income level
- It assumes that the type of housing is a good estimate of income level
- The subsidies ignore the number of person per household.

Note: There is a need to show an attempt to provide judgement for full credit Some students may say that it is a normative issue. So there is no clear-cut answer on whether it is indeed equitable.

E2 (2-3) Shows ability to use case evidence to analyse that rebates are not entirely equitable
E1 (1) Listing of unsubstantiated point(s)

(d) (i) Explain why price mechanism fails to produce public goods such as dams. [6]

Explain dams are non-rivalrous and non-excludable in consumption (3m);
Based on the 2 characteristics, explain why price mechanism fails to produce dam (3m)

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	Dam is non-excludable in consumption. Once a dam is provided, there is no inexpensive or practical way to restrict the availability of a dam to only people who pay for their use since it is such a massive infrastructure. Dam is also non-rivalrous in consumption. The use of a dam by one person will not reduce the amount of dam (service such as storage of water) available to others. The benefit of dam can be shared jointly by everyone who happened to be in the vicinity that has such infrastructure. As a result of the characteristics of non-excludability, once a dam (public good) is provided, non-payers can free-ride on the good. Hence, no rational consumer motivated by self-interest will reveal his effective demand. As a result of non-rivalry, the marginal cost of providing a public good to an additional consumer or user is zero. Since the optimal or allocative efficient quantity to supply is where Price (P) = Marginal Cost (MC), the efficient price to charge for the use of public good should be zero. However, this means that no private firm in a free market can supply it profitably and hence the market fails to allocate resources to produce such goods. In conclusion, due to the twin characteristics associated with public goods, it is not possible for free markets to supply such goods profitably.	
(d) (ii)	Discuss the factors that a government should consider when deciding to build a new dam. A government's goal is to maximise social welfare as well as to achieve macroeconomic objectives. A government would consider the following when deciding to build a new dam: private and external benefit, private and external cost, constraints, unintended consequences Structure Option 1 Factor 1a: Private Benefit - Reason for use of dam o This refers to the benefits enjoyed by economic agents that are directly derived from the operation of the dam o For example, the dam may result in improved irrigation thus benefitting the famers in the surrounding region Factor 1b: External Benefit - Reason for use of dam o This refers to benefits enjoyed by 3rd parties i.e. people who indirectly benefit from the construction or operation of the dam o For example, when electricity is generated by the dam, the demand and hence production of electricity from other more polluting carbon sources is lowered, thus reducing global warming such that everyone else in the country benefit from less extreme weather conditions *Evidence: Many nations see dams as an important way to fight climate change – dams are built to control floods, improve irrigation, alleviate water shortages and generate low-carbon hydroelectricity to replace power stations that burn fossil fuel.* Factor 2: Private Cost - spending on such infrastructure o This refers to costs involved in the construction, operation and maintenance of the dam o Such cost would result in opportunity cost incurred in view of limited government budget (constraints) *Evidence: $2 trillion on dams in recent decades, with each dam costing more than $1.5 billion.* Factor 4: Unintended consequences – External cost → Negative externalities	[8]

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	○ External costs refer to cost suffered by 3rd parties i.e. people who are indirectly harmed from the construction or operation of the dam ○ For example, damming the river upstream may cause fishermen living downstream to suffer from lower water levels, reduced catch of fishes and hence lowered incomes *Evidence: Hydroelectric dams contribute more to global warming than previously estimated, according to a study published in BioScience. Researchers found that rotting vegetation in the water means that the dams emit about a billion tonnes of greenhouse gases every year* *a drastic reshuffling of water-scarcity hotspots over time, with mostly people upstream benefitting from the capture of river flows, but those downstream left high and dry.* Reasoned conclusion/judgement Will build a new dam if social benefits > social cost, govt has sufficient budget Severity of unintended consequences Depends on priority of the govt (whether it is a significant need for an additional dam) L2 4-6 At least two factors discussed. Balanced consideration of both cost and benefits. For 5m and above, there should be 3 factors considered. L1 1-3 At least one factor discussed. Shows some understanding of cost-benefit analysis, but its largely descriptive. Up to 2m for final judgement	
(e)	With reference to case materials and/or your own relevant knowledge, discuss the impact of the water crisis on Thailand's standard of living. Introduction: Explain what is meant by SOL – includes material and non-material SOL Issue and approach – discuss impact of water crisis on Thailand's standard of living Part 1: Explain impact on material SOL *Evidence: "agricultural sector is often the first to be affected by droughts as production declines, especially in rice crop. Most heavily affected crops this year is dry season rice (currently in harvesting season), over 3.4 million rai of which has already been grown throughout the country this year. The fall in agricultural production due to the drought will cause an approximately 20 billion baht loss in purchasing power among farmers, resulting in a more than 60 billion loss in the country's overall purchasing power."* *possible that the impact of the drought will expand further, encroaching the industrial, and tourism sectors, as well as the supply of water for human consumption.* *the drought is expected to cut economic growth by 0.6 to 0.8 of a percentage point this year, with predictions of an even more severe impact if the dry weather continues after mid-year* Explain how water crisis → affects X (agricultural, industrial, tourism) and possible I, C negatively But G may increase ➔ Likely to be fall in AD overall ➔ Slower/negative growth might be expected. ➔ Lowers national income and hence household income → lowers ability to consume goods and services ➔ Lowers material SOL	[12]

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However, not everyone are affected equally – only those in areas affected by drought. Farmers who can adapt their agricultural lands to meet changing water resource conditions may be less affected/not affected by droughts as they are able to negate/ minimise such effects. Their material SOL is not/less affected.

Furthermore, drought crisis comes water-related business opportunities. The higher demand for electronics equipment and systems for water technology, as well as other water-related businesses could increase their income → improve their material SOL instead.

In the long run, LRAS can also be negatively affected – dry lands + loss of investment (optional point) → reduces growth and hence material SOL for those who are affected by droughts. *Evidence: predictions of an even more severe impact if the dry weather continues after mid-year*

Part 2: Explain impact on non-material SOL

Evidence: The drought is expected to last until June, when the rainy season usually begins, costing the country about 119 billion baht. This is bad news for the government whose finances are already in the red. However, the damage could reach 154 billion baht if it continues until October.

May spend lesser on essentials that affects quality of live e.g. healthcare and education since there is opp cost of spending more on repair works affected by drought, building of ponds to sustain wildlife, possible subsidies to farmers, etc

Insufficient water for consumption → affects health as well

Patched lands and damaged roads → inconvenience to people affecting their quality of life

Conclusion – comment on overall impact (considering the extent)

Students can conclude that overall negative impact. But they can considered the extent SR/LR, different groups of people, how long the drought persists, effectiveness of govt intervention in the context of Thailand.

Marking descriptors
L3: 6-9 –

- Well-balanced and developed answer that covers both material and non-material SOL.
- There should be usage of economic concepts (AD/AS) AND usage of case evidence.
- Shows ability to discuss impact on different group of people

L2:3-5 – one sided answer (only on material OR non-material SOL) or weak development of analysis. It could be an answer that did not show good use of AD/AS analysis and/or insufficient link to standard of living

L1:1-2 – vague, descriptive or list-like answer

- EV:1-3 for valid evaluative comment. For maximum marks, there should be a thoughtful consideration of most of the issues that are relevant before reaching a considered judgement.

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(a)	**(i)**	Explain why interest rates in Singapore would likely to head higher when the Fed raises interest rates.	[3]
	SG has free capital mobility (i.e. open to capital flows) [1] OR Given Singapore's **trade dependence** (for both imports and exports), exchange rate has a **stronger effect** on Singapore's **macroeconomic aims** than interest rates. Hence, by choosing to manage its exchange rate, this means that it is impossible for MAS to also control interest rates / SG will be interest rate taker [1] Therefore interest rates in Singapore generally follow the interest rates of big economies like the US. When US i/r increase, SG i/r increase [1]		
	(ii)	Use demand and supply analysis to explain how an increase in interest rate mentioned in Extract 5 might affect the total revenue of the housing market and comment whether it has the same impact on the construction industry.	[5]
	<u>Explain [3m]</u> Link higher i/r to more expensive bank loans to a fall in DD for housing (1m) Lower DD causes both P and Q to fall (1m) TR which is PxQ will also fall (1m) <u>Comment [2m]</u> Fall in equilibrium quantity of housing as explained above would imply a fall in the output for a construction firm, ceteris paribus. (Demand for construction services is a derived demand) This implies a fall in the demand for construction services → Fall in P & Q → Fall in revenue. [1] But if other sources of revenue such as from commercial building can offset the fall in TR from (residential) housing, TR may not fall (1m)		
	(iii)	Explain the likely impact of a rise in US interest rates on Singapore's economic growth in the short run.	[4]
	<u>Explain how AD of SG is affected [3]</u> Rise in i/r in US → Fall in AD → Negative growth (in theory) or Slower growth (with reference to case study context) in US Explain how negative growth/slower growth in US will lead to a fall/slower increase in demand for SG's exports c.p → Fall in AD OR Since SG is an i/r taker → i/r in SG will rise. Explain how higher i/r in SG will lead to a fall in autonomous C & I (with reference to MEI) → Fall in AD <u>Explain impact on economic growth of SG [1]</u> Fall or Smaller increase in AD in SG → Fall in actual output or slower actual growth in SG OR Fall in C & I → Fall in AD in SG → Fall in actual output in SG		
(b)	In the light of strong employment data mentioned in Extract 5, to what extent would you agree that the Fed should raise interest rates?		[6]
	<u>Yes</u> – More jobs were created in May and June than previously reported and the economists had forecast an increase in the number of new jobs in July and a fall in unemployment rate → The US is likely to be approaching full employment based on the employment data → The AD could be very near		

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		to Yf (very small output gap) and there is lack of excess capacity → Raise i/r to prevent high demand-pull inflation [3] *"The July jobs report was everything you could have asked for and more. Provided the strength in jobs is confirmed with other economic data, the Federal Reserve (Fed) will have sufficient reason to hike rates this year,"* <u>No</u> – The jobs created are mainly for the nonfarm sectors but the farming industry could still face a high unemployment → The employment data is not sufficient to confirm that the economy is approaching full employment. E.g.inflation figures and inflation targets→ Need to gather other economic data to confirm this → Should not raise i/r now as more information is required to ascertain that the U.S. economy is near to or already at full employment level of output. [2] OR with the price of oil falling as seen in Figure 1, SRAS may be decreasing in the future if the trend persists that may offset the demand-pull inflation. OR Make a stand. [1]	
(c)		The government spending is expected to be $5 billion higher than in 2015 and the increases are mainly for public infrastructure projects in the healthcare, education, security and urban development sectors (Extract 6).	
	(i)	With reference to Table 2, what can you conclude about the fourth quarter GDP growth rate if Singapore were to slip into a technical recession in 2016? Negative growth rate [1] This is because a country is deemed to be in technical recession if there is negative economic growth for 2 consecutive quarters. [1]	[2]
	(ii)	Explain **two** reasons why the Singapore government chooses to increase spending on merit goods such as healthcare. Government usually spend in the form of subsidies for merit goods, that is, goods deemed by the government as socially desirable but underconsumed when left to the free market. Positive Externalities of Healthcare [2] • External benefits are benefits accrued by the third parties *(such as a pool of healthy and productive workforce for the economy)* and hence it results in a divergence between private and social benefits with SMB > PMB • Explain Qm is at PMB=PMC and Qs is at SMB=SMC leading to underconsumption of healthcare Imperfect Information for Healthcare [2] • In the context of healthcare, consumers may not be very well informed of the actual benefits of healthcare (such as vaccination) hence there is a gap between PMBactual and PMBperceived. • Qm at PMBperceived=PMC is lesser than Qm' at PMBactual=PMC → underconsumption	[4]
	(iii)	Explain how increased government spending on infrastructure would affect the economic growth and employment of Singapore and comment on whether this would lead to conflicts between government macroeconomic objectives. <u>Explain the effect on economic growth and employment [5]</u> Increase in G by $5 billion → Increase in autonomous expenditure in the economy via discretionary fiscal policy →Increase in AD in the short-run [1] Increase in AD → Increase real GDP via the multiplier process → Actual economic growth [1]	[9]

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		Infrastructure development in healthcare, education and urban development → Better quality of resources such as a more productive workforce and better infrastructure that facilitates transportation of goods [1] Increase in potential output in the long-run → Potential growth [1] Increase in output would increase the demand for labour since the demand for labour is a derived demand → Higher employment or lowers cyclical unemployment [1] <u>Comment on the conflicts between government objectives [4]</u> Conflict #1 - Growth vs Price Stability Increase in AD would raise general price level → Demand-pull inflation If the increase in AD is very large and it shifts along the vertical portion of the AS, it would cause very high inflation → Overheating in the short run *"The economy remains mired in an extended spell of deflation and steadily lower growth"* But the Singapore economy is likely to have excess capacity so the inflation is likely to be mild → No overheating In the long run, AS increases (infrastructure development) → Reduce the upward pressure on general price level → This further ascertain that the economy would not have high inflation rate → No overheating *Recommended Conflict #2 - Growth vs favourable BOT*. Provided a one-sided comment on two possible conflicts – 1-3m Provided a two-sided comment on two possible conflicts – 4m	
(d)		Using case evidence and/or your own relevant knowledge, discuss whether MAS should adopt zero percent appreciation of the S$NEER in anticipation of an economic slowdown. <u>Introduction</u> If the Singapore economy anticipates an economic slowdown, coupled with deflation, or the threat of imported inflation from a weaker Singdollar is reduced, the MAS may adopt a neutral policy of zero per cent appreciation in the exchange rate (used in 2008). The means that MAS would reduce the slope (or flatten the slope) of its policy band that guides the local currency against an undisclosed trading basket, in effect slowing the pace of the Singdollar's appreciation against her trading partners. <u>Thesis – MAS should adopt zero percent appreciation of S$NEER in anticipation of economic slowdown</u> Table 2 shows declining growth rate from 3rd quarter 2015 to 3rd quarter 2016 with a negative growth rate recorded in the 3rd quarter 2016. Changes in employment although positive, have fallen from 3rd quarter 2015 to 2nd quarter 2016. Within the same period, export revenue has fallen. Above data suggest that Singapore's economy is slowing down. *"The Singapore dollar tumbled to $1.36 levels to the US dollar, a sharp depreciation (within the currency band) from Wednesday's $1.35 levels. Same trend was observed for Malaysian Ringgit."* Zero percent appreciation of S$NEER could allow Singdollar to weaken/depreciate against foreign currencies of her trading partners. This will improve export price competitiveness and increase (X-M) hence AD, achieving economic growth and increase employment. Explain how depreciation of Singdollar increases export revenue and lowers import expenditure in terms of home currency (Singdollar), using PEDx and PEDm, hence increase AD. *Note to marker: Not essential to apply PEDx if students are able to explain price of exports is unchanged in domestic currency. But it can help to explain the extent of fall in demand of X.* Theoretically, there could be a risk of imported inflation but this risk is lessened as such policy stance is adopted when the threat of imported inflation has been reduced. Table 2 shows that general price level has been falling (or inflation rate is negative). Extract 6 also mentioned that the Singapore economy experienced "extended spell of deflation". Hence boosting AD will prevent further deflation. . <u>Anti-Thesis – MAS should not adopt zero percent appreciation of S$NEER as there is threat of inflation economy is not yet in recession</u>	[12]

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	Inflation threat is still present. With reference to Figure 1, despite a general fall in oil price from 2012 to 2016, there is sign of increment in oil prices in the beginning of 2016. Explain how gradual and modest appreciation of S$NEER can manage import price push inflation (increase SRAS) and demand pull inflation (lower AD). The data for 4th quarter 2016 GDP growth is not yet released. The Singapore economy may have a positive growth rate in the 4th quarter and hence there may be no recession. Moreover government can use expansionary fiscal policy to boost economic growth while maintaining gradual and modest appreciation <u>Conclusion</u> MAS would require more information such as the reason for the fall in GDP. If the MAS is certain that the world economy is going to experience negative growth, such as the 2008 global financial crisis, then adopting a zero appreciation is deemed appropriate to prevent Singapore's economy from a recession. If not, such policy should not be adopted as it may lead to higher inflation in Singapore. As there is sufficient data to suggest that there is a likelihood of recession in Singapore, such as those shown in Table 2, MAS should adopt zero appreciation policy. The policy has mitigated the slowdown in Singapore's economy as the 2016 3rd quarter export growth rate has improved from the previous quarter. If the export growth rate continues to improve, the GDP growth rate in the 4th quarter of 2016 would also improve. <u>Level Marking</u> L3: 6-9 Provided a good analysis of the zero percent appreciation of S$NEER. There is a two-sided discussion. L2: 3-5 Provided a one-sided discussion of the zero percent appreciation of S$NEER. OR Provided a two-sided discussion of the zero percent appreciation of S$NEER but there are major errors spotted, L1: 1-2 There is an attempt to explain the zero percent appreciation of S$NEER. EV: 2-3 Provided a good judgement on whether MAS should adopt the zero percent appreciation of S$NEER with reference to relevant information from case material. EV: 1 Provided a general comment.	

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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.

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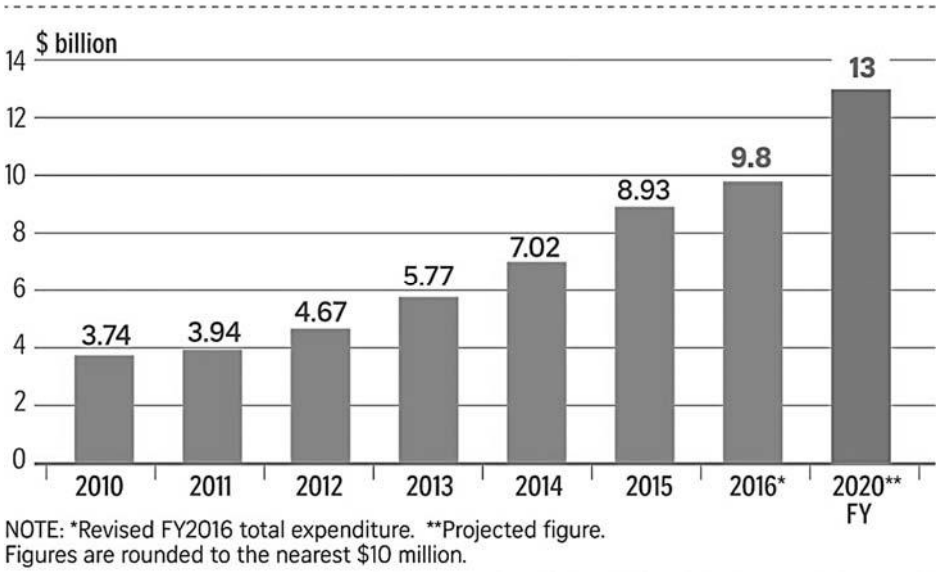
This document consists of **8** printed pages.
Answer **all** questions

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.

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"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

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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]

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Total : [45 marks]

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

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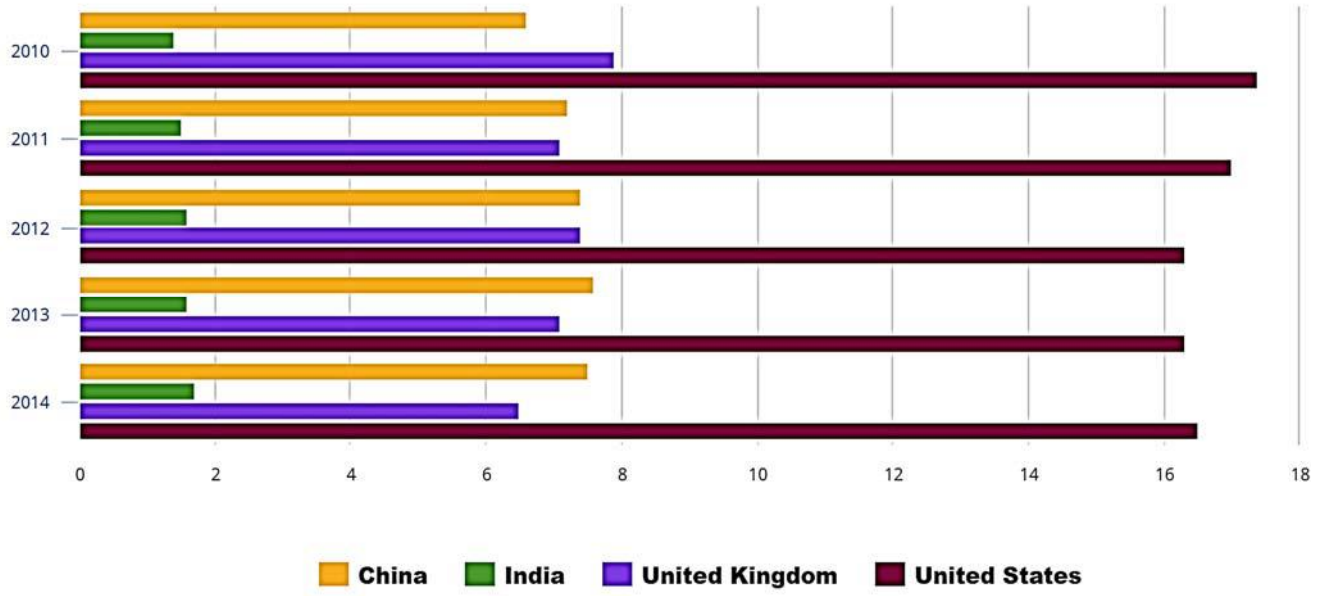
Figure 2: Annual CO_2 Emissions per capita (Metric tons)



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

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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.

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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 base 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]

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- End of Paper –

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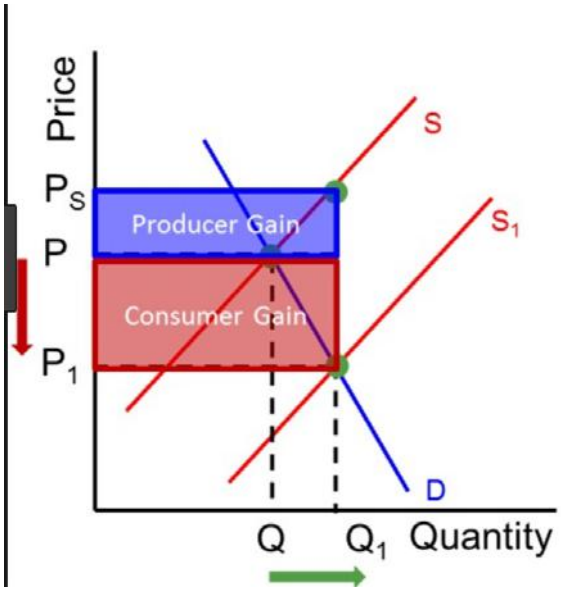
Suggested Answers Question 1

(a)	**(i)**	Using Figure 1, describe the trend in annual healthcare spending in Singapore government. [1] Increase in government spending **<u>Comments</u>** Well done by most students.	**[1]**
	(ii)	Using a diagram, explain whether the consumers or the producers benefited more from the increased subsidies in healthcare. [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  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. 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.	**[5]**

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		Comments 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.	
(b)	What is the main characteristic of a normative economic statement? Identify one example of such a statement from Extract 1. [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." **Comments** Random answers by some candidates, some just left it blank.		**[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. [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. **Comments** Some simply identified one component and one shift. Did not make use of the diagram to analyse the impact on healthcare spending.		**[6]**
(d)	With reference to Extract 2, using a diagram, explain the opportunity cost incurred when the government decides to increase spending in healthcare. - 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] **Comments** There were a handful of incomplete diagrams, many did not make use of the diagram to relate and explain the opportunity cost.		**[4]**

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(e)	Using relevant diagram(s), explain two possible reasons for the above government intervention in the market for healthcare. [4] Presence of externality - 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 Qm lesser than Qs - Deadweight loss leading to market failure therefore requires government intervention [4] Imperfect information - 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 Qm lesser than Qs - Deadweight loss leading to market failure therefore requires government intervention **<u>Comments</u>** Confusion between externality and imperfect information. Some students mixed up both analysis and could not differentiate them even in the diagrams. 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. 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. This is a theoretical question about the market failure in healthcare.	**[8]**

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(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. [3] Explain how the subsidy improves efficiency - 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 Qm to Qs - Reduced the deadweight loss and improve allocative efficiency [4] Comment on why government implements the co- payment system <u>[2] Explaining the problem with the subsidy which might lead to an over consumption</u> - 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. <u>[2] Commenting on how the co-payment solves the problem solves the issue</u> - Co- payment reduces the MPB of the consumers - Reduce over consumption of healthcare - Reduces the excessive subsidy that the government needs to pay OR <u>[2] Relating to the problems of the over subsidy</u> - 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. **<u>Comments</u>** 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. 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.	**[7]**

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(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. ***Increase in healthcare spending will always improve the non- material standards of living.*** 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. 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. 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. ***Increase in healthcare spending will always improve the material standards of living.*** 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. 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. 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. 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	**[12]**

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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 benefiters 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]

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Question 2 Suggested Answer

(a)	**(i)**	**Explain what is meant by real GDP per capita.** Average output of the economy **per person** measured in **a base year prices/ after adjusted for inflation.**	[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 base on the data given.** 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. 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.** 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. **<u>Comments on validity of conclusion on MSOL</u>** 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. 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. 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 CO_2 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.	[7]

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		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. **<u>Comments on validity of conclusion on NMSOL</u>** 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. 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. **1m** for correct understanding of living standards **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. **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.	
(b)	**Using Extract 6, explain why commodity exporters, are particularly hit hard as oil prices fall.** Demand for commodities are price inelastic [1] P oil falls❼ less than proportionate increase in Qd of oil [1] Total revenue of commodity exporters falls [1], hence are particularly hit.		[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.** Fall in pound❼ depreciation [1]❼ Rise in price of imported factor inputs in pounds [1]❼ SRAS falls from $SRAS_0$ to $SRAS_1$ [1]❼ GPL increases from P0 to P1 [1] 1m for well-labelled accurately drawn diagram		[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]

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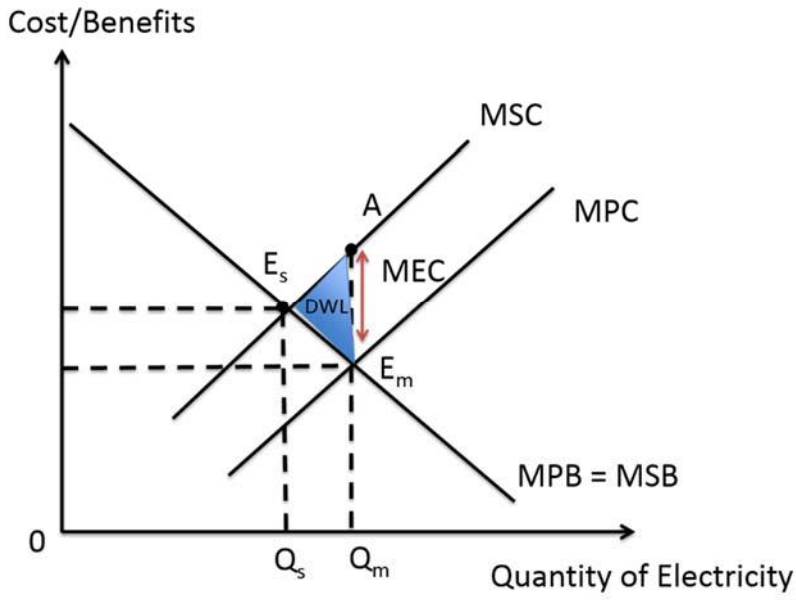
1) Consideration on conflict between economic growth and inflation. Raising interest rates (CMP) will reduce C and I ➐ reduce demand pull inflation but may compromise on actual growth as AD falls. [2m]

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 Em where the equilibrium quantity is at Qm, where MPC =MPB.**

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	However, allocative efficiency occurs at the socially optimal equilibrium **where MSB=MSC, such that the socially optimal quantity is at Qs.** This is because when MSB<MSC, there is a nett decrease in social welfare from additional production of electricity. Since Qm is **more than** Qs, 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 QsQm 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. [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	
(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.** 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. Firstly, rise in temperature slows investments. This reduces AD in countries and as AD falls from AD0 to AD1, RNY falls from Yo to Y1, 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. 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 SRAS0 to SRAS1, with RNY falling from Y0 to Y1 and GPL increasing from P0 to P1, 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. 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. 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	[8]

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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 ❼ encourage C and I and cost of borrowing is kept low❼ firms' expected profitability increases where consumers' opportunity cost to spending falls ❼ rise in AD❼ 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

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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 Qs 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]

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JURONG JUNIOR COLLEGE
JC2 PRELIMINARY EXAMINATION 2018

ECONOMICS

Higher 1 **8823/01**

Paper 1 **27 August 2018**

3 hours

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 an HB pencil for any diagrams, graphs or rough working.
Do not use staples, paper clips, highlighters, glue or correction fluid.

Answer **all** questions.

Begin each case study question on a fresh sheet of writing paper.
Attempt case study questions in ascending order of question sequence and indicate questions attempted clearly on answer sheet.

Fill in the necessary information on the cover sheet.

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

This document consists of **7** printed pages.

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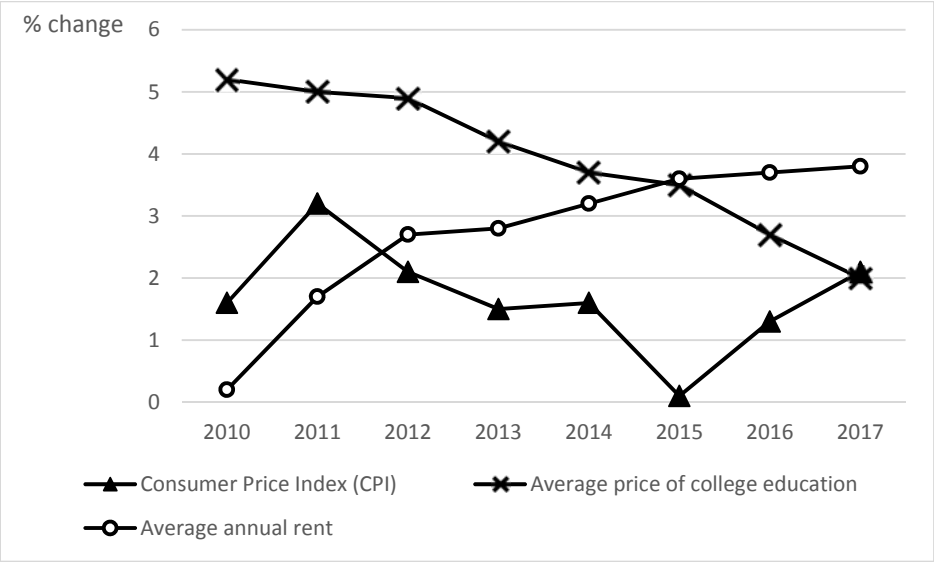
Answer **all** questions.

Question 1

Living and Studying in the United States (US)

Figure 1: Changes in the Prices of Selected Goods and Services in the US



Note: College refers to university in the US
Source: Statista, accessed July 2018

Extract 1: Rising rents make housing unaffordable

California's high housing costs have pushed many tenants to the edge of affordability. Even if they have steady work, the cost of putting a roof over their heads demands a staggering share of income. One reason rents have risen steadily in California is a lack of apartment construction relative to job and population growth. Those who are less well-off have to make tough decisions: move to a cheaper area or cut back on cellphone services, restaurant outings and other basic necessities.

Source: *Los Angeles Times*, December 2017

Extract 2: Rent control does more harm than good

California voters will decide in November whether to give cities new freedom to expand the use of rent control (a maximum price on rental units). The rent control battle comes as California continues to face a housing affordability crisis. Six of the nation's 11 most expensive rental markets are in the state, and rents have increased by 40% in the last three years. These prices affect low-income residents the most: 1.7 million California families pay more than half their income on rent. Rent control, tenants' groups thus argue, is necessary to insulate people from price hikes and allow them to stay in their neighborhoods.

But rent control is not without its woes, causing housing shortages that reduce the number of low-income people who can live in a city. It also disincentivises landlords from upgrading their rental units, resulting in entire neighbourhoods running the risk of becoming decayed and abandoned. Finally, landlords facing lower returns from rental units often convert them into housing units for sale, leading to fewer rental units in the rental market.

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Another solution that has been surfaced to tackle the problem of rising rents includes giving households tax rebates or welfare payments to offset rent hikes. The money for the system would come from taxes on landlords, which would effectively spread the cost among all tenants and landowners instead of laying the burden on the vulnerable few.

Source: *Bloomberg*, January 2018 and *Los Angeles Times*, June 2018

Extract 3: Colleges reduce tuition fees while online courses see higher enrolment

US college tuition fees are growing at the slowest pace in decades, following a nearly 400% rise over the past three decades that fueled middle class anxieties and a surge in student debt. In the last three decades, higher education was one of the economy's most unstoppable growth sectors, with the number of two- and four-year colleges increasing by 33% over the period. However, this looks set to change in the next few years. Due to changes in population demographics, the number of new high-school graduates grew 18% in the early 2000s, but only 2% in 2017. The slowing growth in the number of domestic college-ready students has thus far been offset by growth in the number of foreign students seeking to study in US colleges. The number of Chinese college students in the US ballooned from 67 000 in 2006 to more than 350 000 today due to an emerging Chinese middle class willing to pay full price for a foreign education.

Still, college remains a daunting expense for many households. A Federal Reserve survey released in May showed 37% of Americans age 30 and younger who had not attended college said it was too expensive. As a result, some profit-driven colleges have started offering discounts on college tuition fees in a bid to attract students.

With traditional university programs getting more expensive and competitive, there has been a boom in the number of alternative degree programmes that are taking advantage of the internet and more flexible teaching and learning formats to fill the gap in the higher education market. Based on data from more than 4 700 colleges and universities, more than 6.3 million students in the US embarked on an online degree in 2016, a 5.6% increase from the previous year.

Source: *Wall Street Journal*, July 2017 and US News, January 2018

Extract 4: Is college worth it?

A recent list of top colleges in the Chronicle of Higher Education provides vivid evidence that higher education is the ticket to economic mobility – according to the Bureau of Labour Statistics, median annual earnings for Americans without a degree amounts to $35 256 while the unemployment rate for the same population is 8%. In contrast, Americans with a degree have a median annual income of $59 124 and 2.8% unemployment.

However, the full value of college education goes well beyond dollars and cents. College prepares students to succeed with not only the vocational skills to earn a good living but with the curiosity, adaptability and inclination to respond effectively to the changes and challenges they will face throughout their lives. These benefits extend beyond the college graduates themselves – cities with more college graduates offer higher wages to non-college graduates, all else being equal. And better-educated workers create and develop productive industries; that productivity in turn creates more good jobs for the rest. Ultimately, higher education in New York is a driving force – an economic engine of opportunity for businesses, students, employers and graduates who stay and work in the city, with New York's higher education institutions contributing an estimated $7.5 billion to New York in 2012.

Source: *Crain's New York Business*, December 2017

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Extract 5: Are higher education subsidies necessary?

The US Department of Education spends tens of billions of dollars a year on subsidies for higher education. The bulk of the spending goes to student aid, with the balance going to educational institutions. Supporters of larger government subsidies to higher education often argue that higher education would be under-provided in the absence of government intervention. But higher education subsidies may not be necessary, and should in fact be reduced. Most people already have a strong incentive to invest in their own higher education even if the government does not subsidise it because it will lead to higher earnings for themselves. As a result, the subsidies disproportionately benefit people who are expected to earn higher future incomes as a result of their advanced educations.

By cutting federal subsidies, tuition fees and related costs would be restrained as students shopped around for the best deals. In turn, that would force schools to reduce their bloated costs. In recent years, while student groups and college officials have criticised supposed funding cuts, colleges and universities have been in the midst of a building boom, while administrative staffing has grown rapidly.

Source: *Downsizing the Federal Government*, November 2015

Questions

(a) Figure 1 shows that the average price of college education is increasing at a decreasing rate. However, the Consumer Price Index does not follow the same pattern. Suggest why this is possible. [2]

(b) Extract 1 states "Those who are less well-off have to make tough decisions: move to a cheaper area or cut back on cellphone services, restaurant outings and other basic necessities."

Explain the above statement using the concepts of scarcity, choice and opportunity cost. [3]

(c) Discuss whether the imposition of rent control is ultimately beneficial to society. [8]

(d) With reference to Extract 3, explain why "some profit-driven colleges have started offering discounts on college tuition fees". [2]

(e) Assess whether demand or supply factors account more for why the average price of college education only increased marginally in 2017. [8]

(f) Comment on whether the online courses offered by higher education providers should be considered as public goods. [4]

(g) Using evidence from the data, explain the determinants of a rational prospective student's decision on whether to participate in college education. [6]

(h) "Supporters of larger government subsidies to higher education often argue that higher education would be under-provided in the absence of government intervention. But higher education subsidies may not be necessary, and should in fact be reduced."

Using evidence from the case study and/or your own knowledge, discuss whether the US government should increase or decrease subsidies to higher education. [12]

[Total: 45]

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Question 2

Economics challenges in the United Kingdom (UK)

Table 1: Selected Macroeconomic Indicators in the UK from 2013 to 2016

	2013	2014	2015	2016
Real GDP growth (annual %)	2.1	3.1	2.3	1.9
GDP per capita at PPP (in USD)	37 398	38 251	38 839	39 309
Unemployment Rate (annual %)	7.5	6.1	5.3	4.8
Inflation rate (annual %)	2.6	1.5	0.1	0.6
Life expectancy (years)	81.0	81.3	80.9	80.9
Gini Coefficient	0.36	0.36	0.36	0.35
Government Deficit (% of GDP)	-5.4	-5.4	-4.3	-2.9

Source: The World Bank Data and OECD Data, accessed 18 July 2018

Extract 6: The productivity challenge to the UK economy

Labour productivity measures the output per man-hour. In all major economies, the low productivity continues to perplex economists and policymakers as the output per hour is significantly lower than it would have been. For the UK, this issue is critical as productivity is no higher now than it was just before the 2008 financial crisis.

Productivity stagnation since the crisis has been concentrated in a large number of industries such as finance, telecommunications, energy and management consulting.

Lack of research and development spending mirrors the low productivity of the UK, compared to France and Germany. According to figures from the World Bank, the UK spent 1.7% of GDP on research and development in 2014. Meanwhile Germany is up at 2.8%, a rise from 2.1% in 1996 and France is at 2.2%. With limited innovation and inefficient methods of production, the UK will not be able to keep pace with the rest of the world. Secondly, companies are facing serious consequences as they have failed to tackle digital skills deficiencies within their workforce that were hampering productivity and increasing staff workloads.

Source: various

Extract 7: UK poor productivity figures show challenge for government

A spokeswoman for the Department for Business, Innovation and Skills said the government was committed to delivering a return to productivity growth which is the route to raising living standards for everyone in the UK. The government developments set out in the productivity plan will deliver a change that will increase both short and long-term investment, capital and innovation.

In July 2015, the Business Secretary, Sajid Javid, announced a mix of deregulation policies involving making state-owned monopolies face up to competition and increased government spending on housing, universities, transport and finance in an effort to address UK's poor productivity performance.

Source: *The Guardian*, 10 July 2017

[Turn over

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Extract 8: Income inequality in the UK

For the two years of the recession in 2008 to 2010, inequality fell in the UK. One reason was many top earners saw their incomes slashed as businesses cut costs in difficult economic times. However, more recent evidence suggests income inequality has again started to rise with the UK Gini coefficient increasing to an all-time high of 0.41.

This was not a new phenomenon. The government had spoken for many years about helping particular groups, including those experiencing multiple disadvantages, and some progress has been made. £150 billion was spent on tax credits from 2004 to 2010, much of which was targeted at families with children. These tax credits are tax incentives which allow low income families to subtract the amount of the credit they have accrued from the total they have to pay for the taxes. It may also be a credit granted in recognition of taxes already paid or, as in the UK, a form of state support. However, projections recently published by the Institute for Fiscal Studies suggest that, despite this considerable spending, several of the income targets were likely to be missed.

The Government believed that this reinforced the need to tackle the root causes of poverty and provide support beyond the welfare support system, for example by helping those in work to lift themselves out of poverty. Ensuring the minimum wage will help people not only lift themselves out of poverty but also support them to progress and move away from the poverty line. In March 2015, the government announced that the hourly adult rate of National Minimum Wage would rise by 20 pence, from £6.50 to £6.70 (3%).

Source: BBC Education, *Social inequality in the United Kingdom* and www.gov.uk/government/policies/poverty-and-social-justice, accessed 18 July 2018

Extract 9: Why is the UK inflation at a four-year high?

Inflation hit the highest level in four years during April 2017, beating forecasts and likely ending a two-year period of real wage growth, according to figures published by the Office for National Statistics.

Energy providers increased prices while retailers started to pass along higher import costs. “The contribution of electricity and natural gas prices to inflation rose by 0.07 percentage points as two suppliers hiked prices.” he said.

What does this all mean for interest rates? The month’s rise in price levels underlined the challenge facing the Bank of England, which must decide how to respond to rising inflation. The rate of inflation is now above its 2.65 per cent forecast for the entirety of the second quarter of 2017. The Bank could raise interest rates to head off inflation, but that could mean choking off any meagre income growth.

Source: *Financial Times*, 19 May 2017

Extract 10: UK budget deficit jumps to £6.8b, what now?

UK budget deficit jumped to £6.8b despite austerity measures. It jumped up 43 per cent compared with the same month last year, the Office for National Statistics (ONS) said on Friday. With the deficit widening, there are worries of the accumulation of debts which would have an adverse effect on the UK economy due to the debt repayments in future years to come. So should austerity measures continue?

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It has been argued that the cutting of government expenditure and raising taxes in the UK in the recent years to reduce their deficit have made consumers more reluctant to spend and many businesses delaying their investment projects.

Source: *The Independent* and *The Guardian*, 2012

Questions

(a) With reference to Table 1,

(i) explain the meaning of 'GDP per capita at purchasing power parity'. [3]

(ii) explain whether the data provided are sufficient to assess changes in the standard of living in the UK over the period. [7]

(b) With reference to Extract 6, explain the possible causes of low productivity in the UK. [4]

(c) Using a Production Possibility Curve (PPC) diagram, explain how increased government spending on housing, universities, transport and finance can lead to economic growth in the UK. [5]

(d) Explain and comment on how the policies mentioned in Extract 8 can reduce income inequality in the UK. [6]

(e) Assess whether interest rate policy to reduce inflation in the UK will always be successful. [8]

(f) Using case evidence and/or your own knowledge, discuss the view that the UK government should prioritise achieving higher economic growth rather than to solve fiscal deficit. [12]

[Total: 45]

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JURONG JUNIOR COLLEGE

2018 JC2 ECONOMICS 8823 (H1)

PRELIMINARY EXAMINATION

ANSWER BOOKLET

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Prelim Answers for Paper 1 CSQ1

Questions

(a) Figure 1 shows that the average price of college education is increasing at a decreasing rate. However, the Consumer Price Index does not follow the same pattern. Suggest why this is possible.
[2]

- The Consumer Price Index (CPI) is a measure of the weighted average of prices of a basket of consumer goods and services that **includes more than just the average price of college education.** [1]
- The CPI may not have followed the same pattern as the trend in average price of college education as the **prices of some of the other goods in the basket would have changed at a different rate**. [1]

(b) Extract 2 states "Those who are less well-off have to make tough decisions: move to a cheaper area or cut back on cellphone services, restaurant outings and other basic necessities."

Explain the above statement using the concepts of scarcity, choice and opportunity cost. [3]

- Scarcity arises due to unlimited wants and limited resources.
- Those who are less well-off have more limited resources in the form of a smaller budget constraint. They have multiple wants including continuing to live in the same area, cellphone services, restaurant outings and other more necessary items. [1]
- Given the rise in rent mentioned in Extract 2, those who are less well-off will have to choose between continuing to live in the same area and maintaining their spending on other goods and services. [1]
- Thus, their opportunity cost of choosing to continue living in the same area after rents have gone up is the spending on other goods that is foregone. [1]

(c) Discuss whether the imposition of rent control is ultimately beneficial to society. [8]

Introduction

- Rent control refer to a price ceiling on rents, which is the highest permissible rent that landlords can legally charge.
- In order for rent control to be effective, they must be set below the equilibrium price of rented accommodation.
- The imposition of rent control seeks to ensure affordable accommodation for those belonging to the lower income group.

Explain how rent control (price ceiling) works

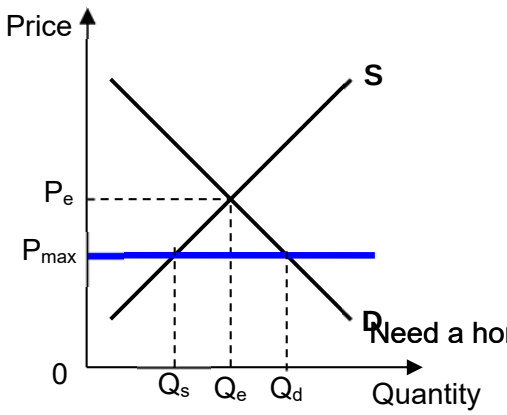

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Figure 1: Imposition of rent controls

- Figure 1 illustrates the effects of the imposition of rent control. Without government intervention, the equilibrium price of rented accommodation would be at 0Pe and the equilibrium quantity at 0Qe.
- When the government imposes rent control by fixing the price below the equilibrium level, say at 0Pmax, producers produce at a lower quantity, 0Qs, while consumers are willing and able to purchase a much larger quantity, 0Qd. Due to the excess demand at 0Pmax, a shortage of QsQd results.

Thesis: Rent controls are beneficial to those who benefit from lower rents

- Consumers (0Qs) who are able to enjoy the good at the lower price of 0Pmax are better off.
- May be beneficial for equity reasons, to allow low-income households to have access to a basic necessity such as shelter

Anti-Thesis: Rent controls are harmful to the following agents:

Landlords

- Producers are also worse off, because they now sell less of the good, and at a lower per unit price of 0Pmax, resulting in a fall in revenue from OPeEQe to OPmaxAQs. Assuming ceteris paribus condition (i.e. no change in costs), this results in lower profits.

Consumers

- In addition, some consumers (QsQe) are **worse off** because they are not able to consume the good even if they were both willing and able to pay a higher price of P_e
- **Unintended consequence which poses a cost to consumers**: Furthermore, given the shortage, landlords also lose the incentive to maintain their properties knowing that demand will outstrip supply due to the artificial ceiling on rent. As a result, consumers who rent are ultimately harmed as the houses they rent will be of lower quality, having fallen into disrepair.
- **Unintended consequence**: With lower rental revenue, landlords are incentivised to convert rental units into housing units for sale as this would generate more revenue for them. This would further reduce the supply of rental units and worsen the shortage further. This reduces the availability of rental units, forcing consumers to move elsewhere.

Government

- Furthermore, governments may face a rise in administrative costs due to the need to mediate an increase in conflicts between landlords and tenants arising from rent control disputes.
- They may also incur costs should they need to manage riots and social problems stemming from high rents.

Conclusion

Stand

- Ultimately, rent controls distort the market and cause are deadweight loss to society. Overall, they are harmful to most agents in society.

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Criteria of evaluation: Root cause of high rents + use of better alternative policies

- Rent controls do not solve root cause of the high rents, which is due to demand for accommodation outstripping supply. In order to solve the problem in the long term, the government may need to subsidise the construction of more public housing in order to increase the supply of accommodation. This would eliminate the shortage and reduce rents accordingly.

Level	Knowledge, Application, Understanding, and Analysis	Marks
L2	Well-developed analysis of how rent control would be beneficial to some consumers but would pose a cost to other consumers, landlords and the government. Different stakeholders are considered.	4 – 6
L1	Descriptive answer of the benefits and costs that rent control would pose to society.	1 – 3
E	Reasoned conclusion and judgment that critically evaluates whether rent control is able to tackle the root cause of the unaffordability of rental units in California	1 – 2

(d) With reference to Extract 3, explain why "some profit-driven colleges have started offering discounts on tuition". [2]

- Demand for college education is price elastic (PED > 1) as college tuition constitutes a large proportion of an individual's income. This causes potential students to be very sensitive to price changes. Thus, some colleges have lowered the price of college education by offering discounts, knowing that there would be a more than proportionate increase in quantity demanded for college education, leading to a rise in revenue [1]
- Assuming costs remain constant, the rise in total revenue would increase profits for the profit-driven colleges. [1]

(e) Assess whether demand or supply factors account more for why the average price of college education only increased marginally in 2017. [8]

Introduction

- Overall, college tuition between 2010 and 2017 increased at a decreasing rate.
- This is due to the rise in demand being greater than the rise in supply of college education.

Demand factors

- **Changes in population demographics**: Due to changing population demographics, the number of new high-school graduates in the US (i.e. potential college students) has only increased by 2% from 2010 to 2017 as compared to an increase of 18% in the early 2000s (Extract 3). Given the slight increase in potential college students domestically, there would be a slight rise in demand for college education.

- **Influx of foreign students**: In addition, as China's economy continues to grow, income levels rise, thereby increasing the affordability of US college education, which is a normal good, for Chinese families. Thus, there is a rise in demand of Chinese students seeking a US college education (Extract 3). Given that the number of Chinese college students

increased by more than 5 times since 2006, it could be argued that there is a significant rise in demand for college education.

- Overall, there would be an increase in demand for college education.

Supply factors

- **Rise in number of colleges**: With more colleges being established, there would naturally be a rise in supply of college education as more courses are offered.

- **Rise in number of online degree courses being offered**: Furthermore, there has been a rise in the number of online degree courses that are being offered by universities (Extract 4). This is because the Internet has lowered the cost of production and provided a new medium for universities seeking to offer cheaper options for potential students.

- Overall, there would be an increase in supply of college education.

Conclusion

Weigh the demand & supply factors

- As college tuition continued to increase, albeit at a decreasing rate, we can expect that the rise in demand outweighed the rise in supply.
- At present, the rise in demand for US college education by Chinese students is significant as China's economic boom in the past few years has significantly increased the purchasing power of Chinese families. Given the competitiveness of China's national examinations and the immense difficulty in entering one of China's few prestigious universities, more students are likely to seek greener pastures in the US. Furthermore, as the world becomes more globalised and English becomes the world's preferred lingua franca for business dealings, Chinese demand for US college education may rise due to the English-speaking opportunities such a college education would present.
- In contrast, the rise in number of universities may be insignificant due to the market already becoming too saturated to the point that some colleges facing steep competition have offered discounts on college tuition in a bid to attract potential students. Furthermore, it would take time before employers and potential students start to accept online degree courses as a viable alternative to a traditional degree since the reputation of these online courses would take some time before becoming established.

Changes over time

- Over time, changing US population demographics could mean that the fall in domestic demand for US college education would eventually outweigh the rise in foreign demand. Once that happens, there would be an overall fall in demand for college education, which, together with the rise in number of universities and growing popularity of online courses as students become more used to learning in a non-traditional setting, would mean falling college tuition prices in the long term.

Level	Knowledge, Application, Understanding, and Analysis	Marks
L2	Well-developed answer that analyses the demand and supply factors that have led to the marginal rise in increase in price of college education in 2017.	4 – 6

L1	Descriptive answer of the demand and supply factors that are responsible for the rise in price of college education in 2017.	1 – 3
E	Reasoned conclusion and judgment that critically evaluates whether demand or supply factors are mainly responsible for the marginal rise in price of college education.	1 – 2

(f) Comment on whether the online courses offered by higher education providers should be considered as public goods. [4]

- Public goods are goods that are BOTH non-rival and non-excludable in nature.
- Online courses offered by higher education providers should NOT be considered public goods. Even though they are non-rival, they are also excludable in nature.

Non-rival

- Online courses are non-rival in nature as one student's participation in the online course (e.g. viewing of lecture materials / attempting of tutorial questions online) **does not diminish the amount available for consumption to another student**.

Excludable

- However, it is possible for higher education providers to exclude others from having access to the online courses if they do not pay for the course.
- This is because the providers could password-protect their materials to restrict access to paying consumers. Furthermore, they would only generate an original diploma for paying consumers as recognition for the qualifications they have attained.

2m for non-rival, 2m for excludable

[Note: No marks if students write: "They are not public goods because they are not provided by the government."]

(g) Using evidence from the data, explain the determinants of a rational prospective student's decision on whether to participate in college education. [6]

A rational prospective student would consider the constraints, benefits, costs, and information available when deciding on whether to participate in college education. After considering the constraints that would hinder her from participating in college education, the prospective student who is rational would maximise her utility by weighing the benefits against the costs. In order to do so, she would have to consider what information she has and whether that information is accurate and reliable.

Constraints

- **Budget constraint**: Prospective students would have to consider whether they and/or their family have sufficient income/savings to pay for college education in the first place. Given the "sharp rise in tuition" in the past few decades (Extract 3), prospective students, especially those from "lower and middle income groups" (Extract 3) may not be able to participate in college education given their budget constraints unless they are able to obtain some form of financial aid such as scholarships. Alternatively, prospective students

would have to consider whether they are able to overcome her budget constraint by taking out student loans. This would in turn depend on the ease of borrowing.

- **Ability constraint**: Prospective students would have to consider if they would be constrained by their high school grades. If their high school grades and SAT scores do not meet the requirements of certain colleges, they may choose to avoid applying to those colleges since they do not qualify.

Benefits

- **Tangible benefits**: Prospective students would consider the economic benefits of participating in a college education, which include the present value of higher future earnings as well as higher chances of employability (Extract 5).

- **Intangible benefits**: Furthermore, they would consider the more intangible benefits of participating in a college education such as gaining curiosity, adaptability and a rise in their ability to respond to challenges. They would also gain from having a larger social network of friends.

Costs

- **Tangible costs**: Prospective students would have to consider how much the college education would cost them in actual monetary terms. Aside from college tuition, this amount would include other costs such as the costs of renting accommodation, textbook costs, etc. If prospective students fund their college education by taking out student loans, they would need to include the interest on the loan as part of the costs as well.

- **Intangible costs**: Prospective students would have to consider intangible costs such as long distance separation from their family and loved ones (if they pursue a college education in a different state) as well as higher anxiety that would stem from looming debt repayments if they were to take out student loans to fund their college education.

- **Opportunity costs**: They would also have to consider their opportunity cost, which is the next best alternative foregone. This could include the job experience and extra income they would have earned had they chosen to start working instead of participating in a college education.

Information

- Prospective students will need to consider if they have accurate information on the benefits and costs of participating in college education. If there is great uncertainty as to future earnings as well as future employability, rational prospective students would reconsider if the value they have assigned to the benefits are too high. They may assign a lower value if they believe there is a high probability that future earnings and employability may not be as high as initially believed.

- Prospective students would also need accurate information on the courses that various colleges are able to offer and whether these courses suit their needs. Furthermore, they would need information on the entry requirements of these colleges so that they can anticipate if they would be constrained by their grades.

If the rational prospective student is not held back by constraints, and the sum of the benefits outweighs the sum of the costs, and assuming this student has accurate information, she will proceed to participate in college education.

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[2m for each determinant, cap at 5m if students do not mention weighing of benefits and costs]

(h) "Supporters of larger government subsidies to higher education often argue that higher education would be underprovided in the absence of government intervention. But higher education subsidies may not be necessary, and should in fact be reduced."

Using evidence from the case study and/or your own knowledge, discuss whether the US government should increase or decrease subsidies to higher education. [12]

Thesis

<u>The US government should increase subsidies to higher education if it finds that the MEB or extent of imperfect knowledge is larger than initially estimated (i.e. higher education is still underconsumed)</u>

- Higher education is a merit good. This is because it generates positive externalities for society in the form of higher work productivity as well as job creation for others (Extract 5). In addition, individuals often underestimate the private benefits of higher education, thinking that future job earnings are lower than they actually are or failing to consider the intangible benefits that would accrue to them. (Extract 5)
- If the marginal external benefit (MEB) or the extent of imperfect knowledge is larger than was initially estimated, then the US government's subsidies (MPC_0 to MPC_1 to higher education would have reduced market failure to some extent, but not completely. In order to eliminate the deadweight loss and achieve allocative efficiency, the US government would have to increase subsidies to MPC_2. Consumption of higher education would thus be at the quantity where MPC_2 = MPB, i.e. at the socially-optimal level of Q_s. Thus, market failure is corrected.

<u>The US government should increase subsidies to higher education for equity reasons</u>

- Higher education could be viewed by many as a key driver of social and economic mobility. With a college degree, those in the lower and middle income groups could earn higher wages and face better employment prospects (Extract 4), thus allowing them to break out of the poverty cycle. However, Extract 3 mentions that many in the lower to middle income groups have found higher education unaffordable due to rising college tuition in recent decades. As a result, they have been priced out of the market for college education.
- Thus, the government should increase subsidies to higher education in order to lower the price of higher education and make it more affordable for lower to middle income groups.

<u>The US government should increase subsidies to higher education in order to promote economic growth</u>

- With subsidies to higher education, the US government would promote the consumption of higher education, thus increasing the quality of the labour force. This would attract investment (Extract 5), leading to a rise in AD, thus achieving actual growth. Furthermore, the rise in quality of the labour force would increase the country's productive capacity, thus increasing AS in the long run, and achieving potential growth.

Anti-thesis

The US government should reduce subsidies to higher education since the MPB of consuming college education is already high. The MPB is also close to the MSB due to the small MEB.

- According to Extract 6, most individuals already have a strong incentive to spend on higher education as it leads to significant economic benefits for themselves (Extract 5). This suggests that the MPB of consuming higher education is high.
- Furthermore, it could be argued that the extent of MEB is small. Although there are large external benefits for primary and secondary school education, because people who are literate and numerate are able to learn new skills a lot quicker and be more productive for the economy, the extent of external benefits for university education are smaller. For example, the consumption of university courses in which one learns vectors in the 4th dimension does not contribute in a concrete way to the economy; most of the benefits of consuming higher education are thus accrued to the one consuming higher education rather than to third parties.
- Thus the US government should thus avoid over-subsidising higher education by reducing subsidies to higher education since the external benefits associated with consuming higher education are small, with current levels of consumption already close to the socially optimal level.

The US government's subsidies to higher education may in fact worsen income inequity

- Those who undergo university education and who graduate with a college education ultimately benefit from higher wages and greater employability. However, the subsidies to higher education are funded by taxes on the entire working population, including blue collar workers who may not have attended university. As a result, subsidies to higher education redistribute the already lower income from blue collar workers to white collar workers who already earn significantly more.

The US government's subsidies to higher education breed complacency and inefficiency amongst higher education providers

- The US government should reduce subsidies to higher education in order to reduce the extent of certain unintended consequences. With subsidies, the profit margins of higher education providers are protected by the higher education subsidies, leading them to become complacent and inefficient instead of finding ways and means to reduce costs (Extract 6: "bloated costs")
- Providing subsidies to higher education providers would not necessarily have resulted in lower prices for students if universities chose to line the purses of their faculty members instead of passing down the cost savings to their students. This led to many in lower and middle income groups to view university education as too costly (Extract 5).

Conclusion

Falling college tuition in subsequent years

- Based on data from Figure 1, if the trend in average prices of college education continues, we could expect college tuition to fall in the coming years.
- In the long term, as online courses and distance learning proliferate the higher education landscape, the price of college education will fall further.
- This would mean that there is less reason for the US government to increase higher education subsidies on equity grounds.

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Selective provision of subsidies to higher education may be necessary if the US intends to undergo restructuring of economy

- However, if the US government intends to spearhead economic restructuring and develop industries that are high value-added and knowledge-intensive, it may choose to selectively subsidise universities that offer courses that would equip future workers with the knowledge and skills needed for the digital revolution. This would increase the supply of such courses, thus allowing future workers to gain the skills for industries on the rise.

Constraints faced by the government

- The above arguments in favour of increasing subsidies would be meaningless if the US government is currently in significant debt. As a result, it may be constrained by its lack of fiscal reserves, which would hinder it from increasing subsidies in the first place. According to Figure 2, the US' debt to GDP ratio is on the rise, which could severely curtail its ability to provide more subsidies to college education.

Level	Knowledge, Application, Understanding, and Analysis	Marks
L3	Well-developed explanation of both the reasons why the US government should increase and decrease subsidies to higher education.	6 – 9
L2	A one-sided explanation of the reasons why the US government should increase and/or decrease subsidies to higher education.	3 – 5
L1	Vague, descriptive or list-like answer of the reasons why the US government should increase or decrease subsidies to higher education.	1 – 2
E	Reasoned conclusion and judgment that evaluates whether the US government should ultimately increase or decrease subsidies to higher education based on relevant evaluation criteria.	1 – 3

[Total: 45]

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Prelim Answers for Paper 1 CSQ2

(a) With reference to Table 1,
(i) explain the meaning of 'GDP per capita at purchasing power parity'. [3]

GDP per capita refers to the total money value of all final goods and services produced within a country's geographical boundary during a given period of time, adjusted for changes in population [2].

Purchasing power parity (PPP) compares different countries' currencies through a "basket of goods" approach. According to this concept, two currencies are in equilibrium or at par when a basket of goods (taking into account the exchange rate) is priced the same in both countries. [1]

(ii) explain whether the data provided are sufficient to assess changes in the standard of living in the UK over the period. [7]

Standard of living (SOL) refers to the material and non-material well-being of the people. It comprises of the quantitative and qualitative aspects of living. Changes in quantitative SOL can be assessed by real GDP growth while changes in non-material SOL can be assessed by qualitative indicators such Gini coefficient, number of leisure hours, pollution index, quality and accessibility to healthcare and education etc.

<u>Data provided are sufficient to assess changes in the SOL in the UK</u>

Real GDP growth measures the economic output adjusted for price changes. The data shows that it is positive from 2013 to 2016, showing that there could be an increase in the income levels, causing an increasing in purchasing power in buying goods and services. Unemployment rate is a measure of the prevalence of unemployment and it is calculated as a percentage by dividing the number of unemployed individuals by all individuals currently in the labour force. The data shows that the unemployment rate is decreasing indicating that more people are employed with income, hence giving them the ability to buy more goods and services. Both data provided are sufficient to show that the standard of living in the UK quantitatively has improved over the period.

Life expectancy is defined as the average number of years that a new born could expect to live if he or she were to pass through life subject to the age-specific mortality rates of a given period. From the data provided, life expectancy worsened slightly from 81 to 80.9 years to indicate that the average number of years expected to live declined. This data shows that the qualitatively standard of living might have worsened but only to a small extent. Gini coefficient measures of inequality of a distribution in the UK. The data however remained constant, indicating that standard of living may not have changed.

<u>Data provided are not sufficient to assess changes in the SOL in the UK</u>

With real GDP growth, it indicates that the UK economy is producing more goods and services available to its people. Thus the material well-being of the people has been increasing from 2013 to 2016. However, a better measure would be to take into account the effect of the size of the population and arrive at real GDP per capita.

Other qualitative indicators such as pollution index to measure the air quality of the UK as well as amount of working hours to reflect if people are working more than the spending leisure hours.

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Human Development Index (HDI) measures the social and economic development levels of countries. It is a composite statistic of life expectancy, education, and per capita income indicators. A country that scores a higher HDI when the lifespan is higher, the education level is higher, and the GDP per capita is higher. The measurement of economic welfare are needed to make a better gauge as to whether standard of living in the UK has improved over time.

Up to 4 marks for valid explanation of how the data provided in Table 1 are sufficient to show that the UK standard of living has changed. For the full 4 marks, an answer should link both quantitative and qualitative standard of living.

Up to 3 further marks for valid and relevant comment. This should involve in expressing a degree of uncertainty as to whether the data provided is sufficient in assessing standard of living in the UK.

(b) With reference to Extract 6, explain the possible causes of low productivity in the UK. [4]

In Extract 6, it mentioned that the UK government is not spending enough on research and development and it is depressing the UK productivity growth. When investments on research and development falls, it will limit innovation and method of production, resulting in the output per man hour falls. [2]

Digital skills shortage (Extract 6) has led to occupational immobility as there were barriers to the mobility of labour between different sectors of the economy leading to these workers remaining unemployed, or being used in ways that are not efficient. This will lead to a fall in output per man hour falls as the unskilled workers were unable to use the new technology efficiently. [2]

(c) Using a Production Possibility Curve (PPC) diagram, explain how increased government spending on housing, universities, transport and finance can lead to economic growth in the UK. [5]

Production Possibility Curve (PPC) shows the maximum amount of two goods or services which the economy can produce with a given quantity and quality of resources, assuming a particular state of technology.

As the government has contributed to the developments of housing and transport, it will contribute to an increase in production in these sectors, hence increasing employment. This represents a greater utilisation of the country's labour resource. Hence, the UK will move from a point within the PPC (Point A) to a point closer to the PPC (Point B).

In addition, an increase in government expenditure in housing, university skills and transport in the UK will lead to an increase in quantity of capital stock, improvement in the quality of labour as well as improvement in the state of technology. These factors lead to an outward shift of the PPC from PPC1 to PPC2 as shown in Figure 1 below.

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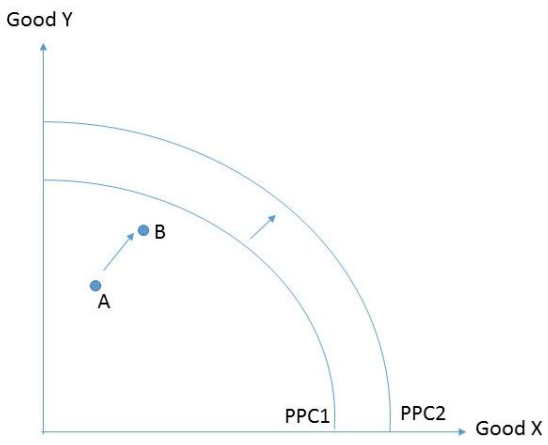

Figure 1

1 mark for the definition of the Production Possibility Curve.

Up to 2 further marks for each explanation of a movement within the PPC and a shift of the PPC outwards, with a diagram.

(d) Explain and comment on how the policies mentioned in Extract 8 can reduce income inequality in the UK. [6]

Tax credits are tax incentives which allow low income families to subtract the amount of the credit they have accrued from the total they have to pay for the taxes. (Extract 8) and these incentives will help them to cope with rising cost of living. They would then be able to increase their affordability on goods such as housing and healthcare. These ensures that that the lower and middle income group will have equal access to both housing and healthcare, reducing income inequality.

The policies require sufficient government budget to support them. The rise in expenditure to achieve inclusive growth may result in opportunity cost of government funds in areas which are essential for economic growth.

When the UK government imposes a price floor in the case of minimum wage legislation by fixing the wage above the equilibrium level, there is a higher quantity of labour supplied because labour is attracted by the higher wages. With low income workers enjoying higher wages, this will increase their purchasing power to consume–goods and hence reducing income inequality.

While firms are only willing and able to demand of the labour services offered it leads to a surplus of labour, leaving some unemployed. Hence, in the case of minimum wage legislation, there are winners and losers as well. The workers who continued to be employed and received the higher wage are better off. However, some of the workers who were previously willing to work at the lower wage, but have now lost their jobs, are hence worse off.

Up to 3 marks each for explain the policies and its limitations as a comment.

(e) Assess whether interest rate policy to reduce inflation in the UK will always be successful. [8]

Interest rate policy to reduce inflation in the UK will always be successful

Bank of England can implement contractionary monetary policy by raising interest rates to head off inflation.

Higher interest rates increase the opportunity cost of consumption and also help keep cost of borrowing high for consumers who purchase durable goods or big-ticketed items, discouraging consumption. At the same time, higher cost of borrowing also causes projects that were previously profitable at the margin to become unprofitable, and this discourages investment by firms. Thus a fall in consumption and investment would reduce AD. This results in production levels to fall as firms employ fewer factor inputs. As AD falls, AD shifts leftwards from AD1 to AD2, resulting in a fall in national income from Y1 to Y2 and lower the general price level from P1 to P2, thus reducing inflation in the country as shown in Figure 2.

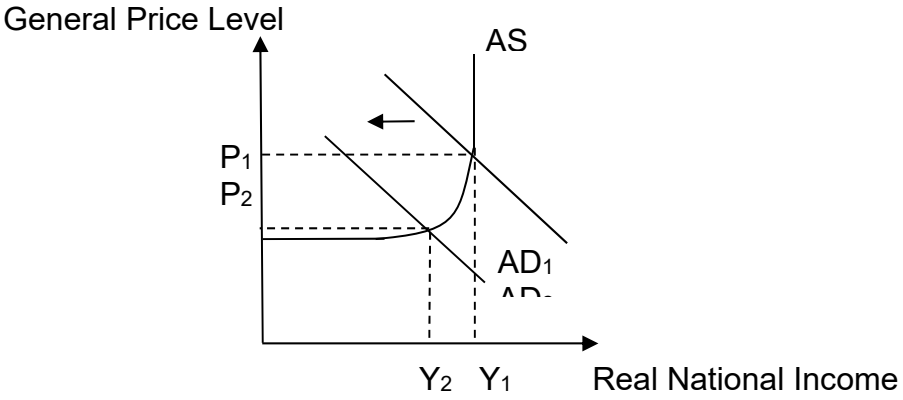

Figure 2

Interest rate policy to reduce inflation in the UK will not always be successful

The current state of the UK economy will affect the effectiveness of the monetary policy. Higher interest rates will not always deter households and firms from spending due to the strong confidence of consumer and businessmen during a boom time and hence AD may not fall.

The effectiveness of monetary policy depends on how responsive investment is to interest rate changes. Monetary policy is more effective if the marginal efficiency of investment (MEI) curve tends to be interest elastic. MEI curve is more interest elastic if interest rate is the main determinant of investment. Therefore, the extent of the decrease in investment in the UK depends on how responsive investment is to interest rate changes.

Evaluation

Whether interest rate policy is always successful for a country depends on the nature and openness of the economy. Usually economies may choose interest rate policy if they have sizeable domestic economy.

However, much also depends on the root cause of inflation in a country. Implementing contractionary monetary policy would not be able to solve the root cause of the inflation as the inflation in the UK is due to cost push factors and demand pull. Therefore, other policies are also needed to help combat cost push inflation. For example, supply-side policy or exchange rate policy may help to reduce the UK reliance on imports or to obtain cheaper alternatives.

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Thu, these policies may be used to complement monetary policy in combating inflation successfully.

Mark Scheme		
L2	For a well-developed answer that explains the success of interest rate policy to reduce inflation and its limitations.	4 - 6
L1	For an descriptive answer or that is one-sided.	1 – 3
E	Reasoned assessment (evaluation). Overall judgement that is well supported by application of relevant economic concepts.	1 – 2

(f) Using case evidence and/or your own knowledge, discuss the view that the UK government should prioritise achieving higher economic growth rather than to solve fiscal deficit. [12]

According to Table 1, the UK is suffering from a slowing growth and budget deficit. Slowing growth refers to slowing positive economic growth and public sector deficit refers to government expenditure being higher than tax revenue. It is crucial for the government to prioritise in order for the economy to recover and prevent any possible deterioration in the standard of living.

<u>The UK government should prioritise achieving higher economic growth</u>

Higher economic growth experienced by the UK will increase the confidence of both the UK producers and consumers. While the latter expects higher income and better job prospects, the former would be more optimistic about future demand for their goods and services as consumers raise their spending in anticipation of higher future incomes.

With the benefits reaped by higher economic growth, the UK will be able to stay competitive, by attracting influx of foreign direct investments into their economy. The development of new industries like services and R&D has also created a range of good employment opportunities for the people in the UK.

It will also improve the UK government budget deficit as more tax revenue can be collected from individuals whose rising incomes fall into higher income tax brackets. The UK producers who tend to earn higher profits will have to pay more corporate taxes as well. This allows the UK government to increase budget spending to help lower income inequality. Besides, the UK government can continue to spend on improving infrastructural development that includes improving the country's transportation and communication network to increase its productivity.

<u>The UK government should prioritise reducing a fiscal deficit</u>

This would have an adverse effect on the UK economy due to the debt repayments in future years, which would pose a burden for future generations. In addition, an increased government borrowing may cause a decrease in the size of the private sector. The UK government may borrow by selling bonds to the private sector. Therefore, if the private sector (banks/private individuals) buy government bonds, they have less money to invest in private sector projects. If there is crowding out, government borrowing will not cause higher aggregate demand and this is undesirable to the economy.

Thus the UK government should prioritise reducing her fiscal deficit especially when the fiscal deficits have been persistent in the past. It is supported in Extract 10 that public spending as a share of GDP peaked in 2010 at 45.1 per cent and is forecast to be 39.6 per cent.

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The UK government should prioritise achieving higher economic growth rather than reduce a fiscal deficit because

In Extract 10, it mentioned that the UK government's austerity measures has been unsuccessful in solving the widening deficit in the recent years. Moreover, these measures have made consumers more reluctant to spend and many businesses delaying their investment projects, worsening the economic growth in the UK.

Economic growth is beneficial to a larger extent as mentioned earlier that it will improve the UK government budget deficit when more tax revenue are collected from individuals whose rising incomes fall into higher income tax brackets. As seen in Table 1, the budget deficit is improving and the magnitude is less severe.

Furthermore, a budget deficit position itself may imply that that there are lower taxes and increased government spending. This will increase AD and this may cause higher real GDP and inflation in the UK. The UK government may also run a budget deficit to finance infrastructure investment. This could include building new roads, railways, and more housing and improved telecommunications. This public sector investment can help increase long-run productive capacity and enable a higher rate of economic growth. If growth does improve, then the borrowing can pay for itself, hence a government should prioritise higher economic growth rather than a budget deficit.

Mark Scheme		
L3	For a well-developed answer that explains the benefits of higher economic growth and the consequences of a widening budget deficit.	6 – 9
L2	For an under-developed answer that explains the benefits of higher economic growth or the consequences of a widening budget deficit.	3 – 5
L1	A vague, descriptive or list-like answer.	1 – 2
E	Reasoned assessment (evaluation). Overall judgement that is well supported by application of relevant economic concepts.	1 – 3

[Total: 45]

Class	Adm No

Candidate Name: _____

H

millennia institute

2018 End-of-Year Exams
Pre-University 2

H1 ECONOMICS **8823/01**

Paper 1 **10 September 2018**

3 Hours

Additional Materials: Answer Paper

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 question 1 & 2 **separately**.
The number of marks is given in brackets [ ] at the end of each question or part question.

This question paper consists of 9 printed pages and 1 blank page.

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[Turn over

Answer **all** questions.

Question 1: Gambling

Extract 1: Gambling Addiction, A Double Edged Sword?

Gambling addiction can best be described as the compulsion to gamble or place bets despite this behaviour having a negative impact on the gambler's life. Financial rewards associated with winning is an obvious benefit. However, psychologists suggest that gamblers also enjoy the thrill associated with not knowing in advance whether they will win or lose when they place their bets. Their research shows that the "rush" from narrowly losing a bet was nearly as high as the pleasure gained from winning.

However, when debts begin to climb and other negative consequences start piling up, those who are addicted to gambling cannot resist the overwhelming urge to place another bet. The repeated action of gambling has been found to actually cause changes in the addict's brain similar to that seen in the brain of someone addicted to drugs or alcohol. Once this occurs, professional treatment is usually the only way to overcome the obsessive need that accompanies gambling addiction.

Financial consequences such as loss of money and assets, as well as high levels of unmanageable debt, are the most obvious effects of gambling addiction. Without treatment, those suffering from gambling addiction may find themselves selling off major assets including cars and homes, borrowing money from loan sharks, and even stealing money from friends, relatives, the workplace or anywhere else they can.

Lying goes hand in hand with problem gambling as the addict attempts to hide their addiction from those close to them. This dishonesty can cause serious strain on relationships, shattering the trust built between loved ones. Work or school obligations often suffer, as a problem gambler may neglect these responsibilities in favour of feeding their gambling addiction.

Source: www.thecabinsingapore.com.sg [Accessed 03 Aug, 2018]

Extract 2: Gambling in the UK

Gambling has become a big business in Britain, as illustrated by the fact that during the year from April 2016 to March 2017, British households spent nearly £73 billion on it even as betting charges are rising. Once the costs were subtracted, UK betting firms generated profits of £13.9 billion and employed over a 106,000 employees. Over the last six years the amount spent on gambling has been rising rapidly while gambling companies' profits have been steadily increasing. Most of the growth can be attributed to the rising popularity of remote betting. During the period 2001 to 2016 revenues generated from this segment alone had increased by over 400%. This sector is expected to continue to grow strongly although not at the high rates seen in its earlier phase.

Source: www.gamblingcommission.gov.uk [Accessed 03 Aug 2018]

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Table 1: The different segments of the market in gambling in the UK

Total Revenue (£, million)

Type	Apr 11 - Mar 12	Apr 12 - Mar 13	Apr 13 - Mar 14	Apr 14 - Mar 15	Apr 15 - Mar 16	Apr 16 - Mar 17
Non-remote	4,964.09	5,219.62	5,340.38	5,492.94	5,432.21	5,655.41
Remote*	710.19	932.61	1,134.66	2,239.00	4,251.82	4,716.16

**Remote segment refers to gambling activities such as online betting and online casinos where the physical presence of the customer is not required.*

Source: www.gamblingcommission.gov.uk [Accessed 03 Aug 2018]

Extract 3: Gambling becomes easily accessible

In recent years gambling in the UK has become more convenient. A large segment of the population, especially the young are text-savvy and comfortable going online. The development of mobile gambling apps and online access means customers do not have to leave their homes to gamble. In addition, Tony Blair's decision to deregulate the gambling industry in 2004 made it easier for bookmakers to advertise on the television and radio. The deregulation of the gambling industry also enabled betting shops to install more betting machines, a move that the Daily Mail, a national newspaper, has been highly critical of.

Betting firms have spent nearly half a billion pounds on TV advertisements since 2012. Companies offering sports betting, bingo, online casino games and poker spent £118.5m on TV spots in 2015, compared with £81.2m in 2012, according to the figures compiled by media analysts Nielsen. The 46% rise in annual spending over the period means the industry has shelled out a combined £456m since 2012. The bookmakers have succeeded in convincing sports fans that watching sport and betting on sport should be bought and consumed together.

Source: The Guardian [15 July 2016]

Extract 4: Gambling addiction under control

The pathological and problem gambling rate among Singaporeans and permanent residents was 0.9 per cent in the 2017 survey by the National Council on Problem Gambling. It inched up from 0.7 per cent in the 2014 survey, but the change is not statistically significant, the council's spokesman said. The survey is done every three years to find out the extent and pattern of gambling here. Pathological gambling is more serious than problem gambling.

In fact, the gambling addiction rates have been falling since the first survey was done in 2005. While the 0.9 per cent prevalence rate is small, it still translates into a sizeable number of people who could be hard-core gamblers, given that the study is nationally representative of the population. In the 2017 Population Statistics report, there were about 3.1 million Singaporeans and permanent residents aged 20 and older. So 0.9 per cent of that works out to about 28,000 gambling addicts here.

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A Ministry of Social and Family Development (MSF) spokesman pointed out that the Government has put in place a slew of social safeguards to prevent Singaporeans from getting hooked, such as the $100 daily entry levy to enter a casino. He also said that fewer Singaporeans are going to the casinos as the novelty has worn off, without giving more details.

Those who counsel hard-core gamblers, such as Mr Billy Lee of Blessed Grace Social Services, expressed surprise at the falling prevalence rate over the years, given that they are seeing more addicts seek help in the past few years. They pointed out that many addicts may not be truthful when answering survey questions, hence that could affect the findings. Others noted that the council has done a lot to raise awareness of problem gambling and extend aid to those affected, which could have brought the addiction rates down.

Meanwhile, the council has upped the number of centres offering help to problem gamblers from two to six and has also started a new e-counselling service in July last year, where people can get counselled anonymously over the phone or the Internet. Its National Problem Gambling Helpline received close to 20,000 calls and webchats for help last year.

Source: The Straits Times, Singapore, 28 Mar 2018

Extract 5: Las Vegas's economy is on the brink of a boom.

After a decade of pain and recovery, no place is better poised to boom than Las Vegas in 2018. Unemployment rate today is 4.7% compared to 13.7% in 2009. Jobs are coming back in the construction industry, with big pending projects like the Raiders stadium, Resorts World Las Vegas, the Las Vegas Convention Centre expansion and renovation, as well as new home construction. Other sectors like tourism, healthcare, hospitality and transportation continued to add employees to the payroll.

With respect to population, Las Vegas is now designated as the fastest-growing major metropolitan area in the United States. The number of residents is at an all-time high with half of new arrivals being retirees who were described as "a key gaming demographic" for the casinos.

At the end of November 2017, the number of unsold housing units for sale had fallen 30 percent over the past year, representing less than two months of supply. Prices have responded sharply, with Las Vegas joining Seattle as the only two metros in the US with home prices growing by double digits over the past year.

Housing isn't the only cyclical industry that drives the Las Vegas economy: Tourism plays a big role as well. Las Vegas was on pace for record convention attendance in 2017, which should grow further in a strong 2018 economic environment. This might be why after a quiet decade, big casinos are starting to rumble and make land acquisitions for future development. A return to even a modest casino development cycle would only add fuel to Las Vegas's economic expansion.

Sources: Various.

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Questions

(a) (i) Define price elasticity of demand. [1]

(ii) What can you conclude from the evidence in Extract 1 about the likely value of price elasticity of demand for gambling? [2]

(iii) With reference to Extract 2 and the aid of a diagram, explain how the increase in betting charges accounts for the change in the UK's household expenditure on gambling. [4]

(b) Compare the trends between the non-remote and remote gambling revenues in the UK from April 2011 to March 2017. [2]

(c) With reference to Extracts 2 and 3, account for the growth of the gambling industry in the UK and comment whether the change in supply is likely to be more important than the change in demand in explaining the growth. [7]

(d) With the aid of a diagram and the use of the concept of price elasticity of supply, explain how the economic recovery in Las Vegas had caused housing prices to grow "by double digits". [5]

(e) Discuss the extent to which the gambling industry has improved the standard of living in the Las Vegas. [8]

(f) (i) Explain what is meant by negative externalities. [2]

(ii) Explain why gamblers have underestimated their private cost. [2]

(iii) With reference to the UK as well as Singapore, assess whether the actions of the two governments have corrected or worsened market failure in gambling in the two countries. [12]

[Total: 45 marks]

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Question 2: Economic Challenges in India and Japan

Table 2: Some economic statistics for India from 2013 to 2017

	2013	2014	2015	2016	2017
Budget position (billion rupees)	–5.03	–5.11	–5.35	–5.37	–5.91
Real GDP growth (annual %)	6.39	7.41	8.15	7.11	6.62
Inflation rate (annual %)	10.91	6.65	4.91	4.94	–
Unemployment rate (%)	3.46	3.41	3.49	3.51	3.52

Source: World Bank Group and Trading Economics, accessed on 11 August 2018

Table 3: Some economic statistics for Japan from 2013 to 2017

	2013	2014	2015	2016	2017
Budget position (billion yen)	–39.25	–28.26	–25.54	–24.23	–24.59
Real GDP growth (annual %)	2.00	0.37	1.35	0.94	1.71
Inflation rate (annual %)	0.35	2.76	0.79	-0.12	0.50
Unemployment rate (%)	4.03	3.58	3.33	3.13	–

Source: World Bank Group and Trading Economics, accessed on 11 August 2018

Extract 6: Reasons why Indian economy is poised to grow faster in 2018

The Indian economy is poised to grow faster than expected in the year 2018, against the backdrop of rising trade protectionism, increasing crude oil prices and volatile market conditions Deloitte Voice of Asia report said.

There is high optimism in domestic demand in the form of consumption and revival in small-scale business activities. Moreover, India's jump on World Bank's Ease of Doing Business Index is helping build optimism in India's story and is consequently attracting more investors to the country.

There is also a lot of focus on infrastructural development. The government in the Budget 2018 allocated a massive amount to infrastructure. "India has taken steps to collaborate with international partners to speed up the process of infrastructure building," the report said.

In addition, the global economy has turned a corner, with demand rising robustly since late-2016 and it is likely to accelerate further. More than 75% of the world economy is now enjoying an upswing, with forecasts anticipating global growth to rise to 3.7% in 2018, from 3.2% in 2016. As the global economy is in its heights after recovering from the shocks of 2008 crisis, India should take the benefit of this opportunity. India's ability to stave off the economic gales was helped by the fact that it is much less dependent than most countries on global flows of trade and capital.

Source: Financial Express, 14 March 2018

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Extract 7: India's unemployment crisis

India's economy has a lot going for it: it's already huge, and still growing relatively fast, at 7.2%, surpassing even China's 6.8%. But the positive narrative could lose momentum, and start the beginning of a solid downward trend. To put it simply, India's economic growth has been largely jobless. The unemployment rate in India hit its highest level in 16 months in March 2018 at 6.23%. There's an accumulated shortage of around 80 million jobs, but the number of jobs created in the financial year 2018 is an estimated 600,000.

India's manufacturing sector has been sluggish for a long time now. India's labour laws are restrictive, imposing all kinds of red tape on factories of more than 100 workers, which discourages businesses from thinking big. There is also the problem of poor infrastructure. While efforts are on to create productive, well-paying, formal jobs, truth is structural changes have occurred. Traditional jobs have disappeared and are not coming back. As the fourth industrial revolution advances, new skills requirements will further challenge its youth.

Emphasising job creation is one of the country's most urgent priorities. Indian GDP needs to grow at 10% to be able to produce enough jobs for the 12 million people joining its workforce every year.

Another concern for India, amid rapid economic progress, is high economic inequality resulting in uneven distribution of wealth. The gap has been widening – the richest 1% of Indians now hold 73% of the country's total wealth, according to Oxfam India. And according to economists Thomas Piketty and Lucas Chancel, the top 1% of earners pocketed nearly a third of all the extra income generated by economic growth between 1980 and 2014.

Former Indian Prime Minister Manmohan Singh said while economic growth remains a high priority for the country, there is a growing concern that the commitment to ensuring that disparities and inequality do not grow is weakening.

Source: Forbes, 3 May 2018

Extract 8: India gets its first interest rate hike in 4 years

India's central bank has hiked interest rates from 6% to 6.25% for the first time in over four years amid worries over rising prices.

The bank cited a recent spike in oil prices as one of the main factors in its decision. Crude oil crossed $80 a barrel last month before falling back a little to trade at just over $75 on Wednesday. Rising oil prices has sparked concerns that inflation could take the edge off India's robust economic growth.

Overall inflation rose from 3.9% to 4.2% between March and April 2018. An economist predicts that stronger growth and rising inflation could result in further interest rate rises in the months to come.

Source: CNNMoney, 6 June 2018

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Extract 9: Bank of Japan maintains its negative interest rates

Bank of Japan (BOJ) maintained its ultra-loose monetary policy and kept its interest rate at minus 0.1 percent, a move adopted in 2016. Negative interest rate is a policy when banks do not get paid an interest for parking their money with the central bank. Instead they are charged themselves and have to pay the central bank for depositing the money. This penalises the banks for hoarding their cash, thereby giving them the incentive to loan the money out.

The continued fiscal stimulus has helped the economy expand moderately. However, BOJ also maintained its cautious assessment on prospects for hitting its elusive 2 percent inflation target. "Consumer price growth is in a range of 0.5 to 1 percent in July 2018," the BOJ said. That was a slightly bleaker view than in April where central bank said inflation was moving around 1 percent. Japan's weak inflation data raise fears over deflation.

BOJ suggested a range of factors that could contribute to the weak inflation data, including deeply entrenched attitudes cause by deflation and low growth, meaning households and firms do not expect wages and price to increase. Another reason could be the productivity-targeted measures and more women entering the workforce. These measures mute inflation.

Source: CNBC, 14 June 2018 and The Telegraph 31 July 2018

Extract 10: Japan must proceed with unpopular sales tax hike

Japan must proceed with a sales tax hike scheduled for 2019 to put its fiscal house in order and cover the rising social welfare costs of a rapidly aging society The consumption tax is similar to the value-added tax or goods and services tax implemented in other countries.

The remark by Fumio Kishida, who oversees the Liberal Democratic Party's policy-setting, comes amid lingering calls from politicians to postpone for a third time the unpopular sales tax increase to 10 percent from 8 percent. Japan's government has twice delayed a plan to raise the sales tax to 10 percent from 8 percent, after an earlier hike from 5 percent hurt growth.

"It's an imminent task" for Japan to make its social welfare system more sustainable and improve its fiscal health, Kishida told reporters. "Japan must ensure it proceeds steadily with the scheduled sales tax hike so it can meet the government's goal of balancing the budget in the fiscal year ending in March 2021, he said. Japan's public debt is at twice the size of its economy, and is the biggest among advanced economies.

Source: Reuters, 5 September 2017

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Questions

(a) Describe the trend in India's budget position from 2013 to 2017. [2]

(b) Explain how higher growth rates in India would affect its budget position. [2]

(c) Explain the factors that would allow India to achieve sustainable growth in 2018. [4]

(d) (i) Identify the relationship between Japan's GDP and general price level from 2013 and 2017 shown in Table 3. [1]

(ii) With help of a diagram, account for the above relationship despite "the productivity targeted measures and more women entering the workforce" mentioned in Extract 9. [6]

(e) Japan and India have adopted different monetary policy approaches.

(i) Explain one possible reason why Japan is fearful of deflation. [2]

(ii) Explain how India's monetary policy can help to ease its inflation problem and comment on the suitability of her approach. [7]

(f) Discuss whether Japan should proceed with the imposition of the sales tax hike. [8]

(g) In light of the macroeconomic problems that India is facing, assess the possible effects of a depreciation of its currency on its macroeconomic performance. [12]

[Total: 45 marks]

- End of Paper -

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EYE H1 Micro CS Suggested Answers

(a) (i)	**Define price elasticity of demand.**	**[1]**

Price elasticity of demand (PED) is a measure to show the responsiveness, of the quantity demanded of a good or service to a change in its price, ceteris paribus. ***[1]*** *PED gives the percentage change in quantity demanded in response to a one percent change in price.*

Markers' Comment

(ii)	**What can you conclude from the evidence in Extract 1 about the likely value of the price elasticity of demand of gambling?**	**[2]**

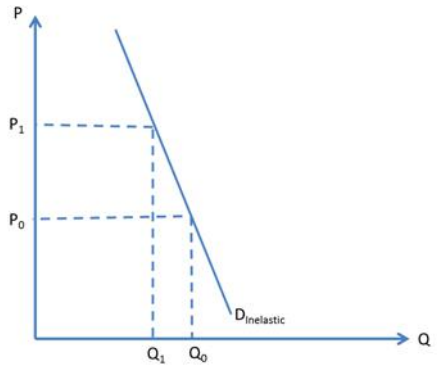
Extract 1 suggests that gambling is highly addictive and successful advertising reinforces such behaviour. ***[1]*** *Therefore, the demand should be highly inelastic and |PED| < 1.* ***[1]***

Markers' Comment

(iii)	**With reference to Extract 2 and the aid of a diagram, explain how the increase in betting charges accounts for the change in the UK's household expenditure on gambling.**	**[4]**

It is already established that PED is highly inelastic (from a(ii)). Extract 2 concludes that "the amount spent on gambling has been rising rapidly", "even as the betting charges (prices) are rising." Given the elasticity we expect a less than proportionate fall in quantity demanded when prices rise. ***[1]*** *In these circumstances, the household expenditure / total revenue of the firms (P X Q) will increase.* ***[1]***

Diagram and reference to diagram (see below). ***[2]***



With reference to the diagram above, the increase in betting charges from P0 to P1 caused a less than proportionate decrease in quantity demanded from Q0 to Q1. This caused the total expenditure on betting to increase from P0 X Q0 to P1 X Q1.

Markers' Comment

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(b)	**Compare the trends between the non-remote and remote gambling revenues in the UK from April 2011 to March 2017.**	**[2]**

Comparing general trend: Both trends increased. ***[1]***

Comparing other aspects: Remote gambling increased at a faster rate ***or*** *non-remote gambling was always higher.* ***[1]***

Markers' Comment

(c)	**With reference to Extracts 2 and 3, account for the growth of the gambling industry in the UK and comment whether the change in supply is likely to be more important than the change in demand in explaining the growth.**	**[7]**

Explain ***[4m]***

DD factor *- ↑ in no. of consumers → more people are text-savvy and comfortable going online → DD increases → DD shifts right;* ***or*** *change in taste & preferences due to successful advertising → DD increases → DD shifts right.*

SS factor *- more betting machines, casinos, use of technology to develop mobile gaming apps to allow online access → SS increases → SS shifts right.*

*[**2** marks for each DD & SS factor]*

Comment ***[3m]****:*

Students should make a judgement on whether demand or supply shifts more. While both demand and supply have been rising, from the extracts we may conclude that the demand factor may be stronger due to the highly addictive nature of gambling and the aggressive advertising expenditure committed by the industry.

On the other hand, extract 2 suggests that there may be limits to growth as the remote segment becomes saturated. Also, gambling remains a regulated industry. These could have a limiting effect on supply. Take a stand.

Markers' Comment

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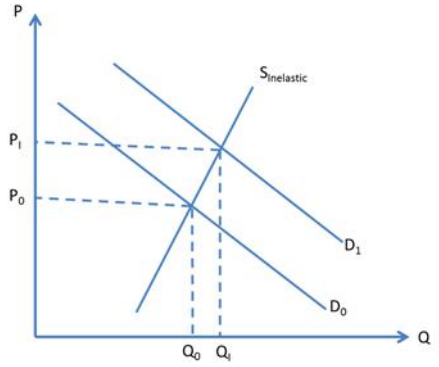
(d)	**Using the concept of price elasticity of supply and a diagram, explain how the economic recovery in Las Vegas caused housing prices to grow "by double digits."**	**[5]**

An economic recovery in Las Vegas would suggest that income levels in that area is likely to increase due to greater economic activity. Given rising income, demand for normal goods such as housing will increase, shifting demand to the right. ***[1]***

Extract 5 also provides evidence that "the number of housing units available for sale has fallen 30% over the past year." This suggests quite clearly that the price elasticity of supply is highly inelastic (|PES| < 1) due to low stocks. ***[1]***

With demand shifting to the right, because of the price inelastic supply, the increase in price is likely to be large ("double digits"). ***[1]***

Diagram and reference to diagram (see below). ***[2]***



With reference to the diagram above, the increase in demand for housing caused a large increase in the price of housing from P0 to P1.

<u>Markers' Comment</u>

(e)	**Discuss the extent to which the gambling industry has improved the standards of living in Las Vegas.**	**[8]**

<u>Introduction: Define and explain standards of living (SOL), and the background of Las Vegas.</u>

SOL measures the quality of life in a country. Both quantitative (material) as well as qualitative (non-material) aspects need to be considered in order to draw a conclusion. Material SOL includes the ability of consumers to consume goods and services while non-material SOL includes other intangible aspects. Indicators of SOL include real GDP per capita (for material SOL), and health, education and environmental indicators (for non-material SOL).

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Las Vegas, a city in the US state of Nevada has an economy that is centred on gambling and its revival has nothing to do with deregulation unlike the UK. The general and gradual recovery of the US economy since the Financial Crisis may be the trigger that contributes to Vegas' growth. The improved condition of the national economy has given a boost to the many States including Nevada and Washington. Greater economic opportunities and warmer weather may be attracting more people into cities like Las Vegas and Seattle giving many of its industries including gambling a lift.

Thesis: *The gambling industry has improved the standards of living in Las Vegas.*

As gambling is a dominant industry in the city it would have contributed significantly to the Las Vegas's growth. For example, the building of casinos ("Resorts World Las Vegas", "big casinos are starting to rumble and make land acquisitions") is a form of investment that increases AD, which then causes and increase in NY. This contributes towards improving g SOL by increasing the real GDP per capita. The increase in AD also creates jobs in industries such as construction, healthcare, hospitality and transportation as these are mentioned in extract 5. We can conclude that as a result of unemployment being lowered by 9% over the years the material welfare of many Vegas residents has increased.

The gambling industry has also attracted new arrivals – retirees who are "a key gaming demographic". These retirees could also be the catalyst that contributes to the material welfare in Vegas. The consumption of gambling by these new arrivals also contributes to consumption and adds to the increase in AD, further increasing NY and boosting material SOL.

Anti-thesis: *The gambling industry has not improved the standards of living in Las Vegas.*

However, the Vegas revival may only be partially attributed to the gambling as sectors such as housing, health and transportation are positively contributing ("tourism, healthcare, … continued to add employees to the payroll")..

Furthermore, while material welfare may have been raised it is very unlikely that non-material welfare would have gone up. This is due to the fact that gambling is an activity associated with market failure. Gambling generates negative externalities due to external costs thereby driving up social costs. Problem triggers associated with this industry such as organised crimes, petty crimes and domestic violence will likely rise. The information failure associated with gambling being a demerit may contribute negatively to individual welfare causing them to underestimate true costs. Health costs and counselling costs may deprive gamblers and their family's material and non-material benefits. An additional concern could be the retirees who love to gamble. If gambling consumes them instead of keeping them amused and occupied they could become and additional burden to society. In total, non-material welfare of the Las Vegas residents may suffer and impact SOL negatively.

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Evaluation:

In conclusion, gambling likely improved the material SOL of Las Vegas and but worsen the non-material SOL. However, it should be noted that we do not have sufficient information to be conclusive about the rise in material welfare. We do not have comprehensive GDP figures nor other useful information such as inflation data. We also do not have sufficient statistics to be conclusive about the fall in non-material living standards in Las Vegas due to the gambling industry. No information about crime rates and other social costs are presented. Therefore, more information would need to be collected and analysed before determining whether the improvement in material SOL outweighs the worsening of the non-material SOL.

Marks scheme

Level	Descriptor	Marks
L2	A thorough answer that examines both side of the argument and presents evidence from the case material. Both material and non-material aspects of standards of living are considered while the discussion focusses on Las Vegas.	4-6
L1	An incomplete or one-sided presentation. Lacking reference to case material.	1-3
E2	Substantiated judgement that highlights the difficulty in offering clear conclusions.	2
E1	Superficial evaluation and unsubstantiated judgement.	1

<u>Markers' Comment</u>

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(f) (i)	**Explain what is meant by negative externalities.**	**[2]**

Explain negative impacts on unrelated third party due to consumption or production of a good or service. These translate to marginal external costs (MEC) which creates a divergence between private and social costs. ***[1]*** *Illustrate with an example from the extracts.* ***[1]***

Markers' Comment

Majority of the students ignored the mark allocation and therefore did not give example to illustrate negative externalities. While most of the students were able to define the term correct, there were a few who gave incomplete or imprecise definition and others ended up explaining demerit goods.

(ii)	**Explain why gamblers have underestimated their private cost.**	**[2]**

The perceived costs of an economic activity are much lesser than the actual costs realised due to either a lack of information or misunderstanding the consequences of their actions. ***[1]*** *Illustrate with an example from the extracts.* ***[1]***

Markers' Comment

Many of the students have misconception that the imperfect information happens as the consumers or producers lack information on the external cost. Though they were not penalised for this, i.e. one mark has given if they mention that gamblers have imperfect information, they had difficulties providing an illustration. Students must recognise that imperfect information happens when the consumers or producers lack information on the hidden cost, i.e. long-term cost or unintended cost.

(iii)	**With reference to the UK as well as Singapore, assess whether the actions of the two governments have corrected or worsened market failure in gambling in the two countries.**	**[12]**

Introduction: Explain how gambling causes market failure due to negative externalities and imperfect information

Define and explain fully the concept of market failure. Identify the sources of market failure in the context of gambling. Students should illustrate the case of negative externality in consumption as well as gambling being a demerit good. Third party costs should be explained and illustrated with examples. Information failure resulting in overestimating the benefits and underestimating costs should be examined. The resulting failure of the market to predict the correct equilibrium and the consequence of this failure in terms of overconsumption of gambling as a good as well as the dead weight loss incurred by society should be elaborated. Diagram. Suggest briefly, some possible policy prescriptions. Taxes, regulation, education etc.

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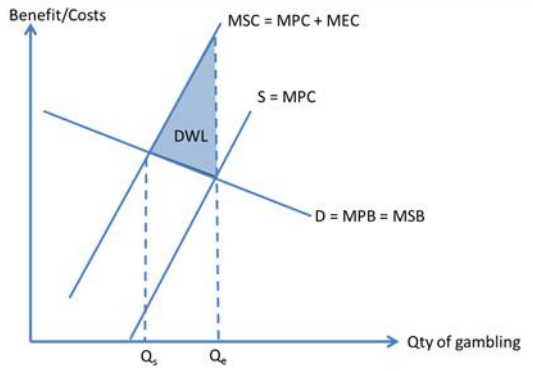

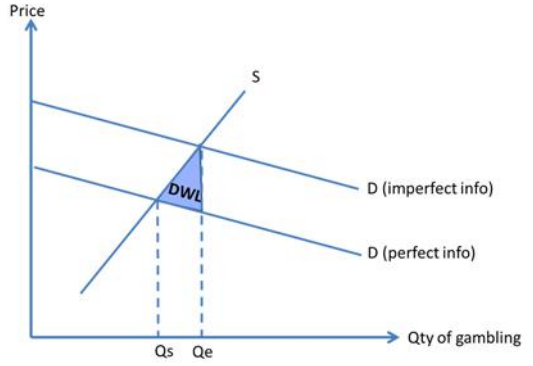

<u>Identify the actions taken by the two governments</u>

The UK pursued deregulation allowing freer access of the market to firms providing gambling services. More facilities and easier convenient were the outcomes. Besides, the firms were able to manipulate and mould consumer behaviour through advertising.

Singapore, on the other hand, made use of regulation as well as education in its attempt to correct possible problems. Taxes were imposed on residents while counselling was made available through both government and private channels to help would-be addicts.

<u>Thesis: Government actions corrected market failure</u>

The action of the Singapore government helped to correct the market failure present (extract 4). The $100 daily entrance levy imposed on all Singaporeans has helped locals internalise the external costs of consuming gambling and has become a successful deterrent. As the novelty of casinos wears off, the number of locals entering the casinos has tapered off, thus effectively reducing the consumption of this service.

The counselling and education offered to gamblers have "raised greater awareness" and has "brought the addiction rates down." Thus, the information failure that is inherent in gambling has been corrected to a certain extent. The over-consumption has been reduced allowing the market to consume closer to the socially acceptable equilibrium with significant reduction in the dead weight loss.

<u>Evaluation of Sg government's intervention</u>

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However, Sg government's actions may not have corrected market failure. It should be noted that the $100 daily entrance levy may be an ineffective deterrent especially to the above average income earners and high-rollers. Low income gamblers who find the levy costly may still resort to illegal gambling or go "overseas" (Malaysia or hitting international waters on board cruise ships) to gamble. Also, the fact that we still have about 28000 hard-core gamblers in Singapore is a concern and questions the effectiveness of the policies.

Anti-thesis: Government actions worsened market failure

It can be argued that the action of the UK in deregulating the gambling industry would have worsened the market failure (extract 2 & 3). As a result of greater and easier access to gambling, more people in the UK are into gambling, as evidenced by higher expenditure by British households. This is happening despite the increase in betting charges. The blatant advertising and moulding of consumer behaviour as shown in extract 3 worsens the market failure as hard-core addiction will most likely rise. The use of technology to make gambling more "convenient" also suggests that market failure will worsen in the UK. Overall, Qe > Qs, and there is still over-consumption and over-production leading to higher social costs and dead weight loss to society.

Evaluation of UK government's intervention:

However, it is possible that the UK government's actions did not worsen the market failure. For the UK, the case study material does not provide any statistics about hard-core addiction, social costs, crime rates etc. making judgement difficult. The fact that the Daily Mail "is highly critical" of some of the gambling industry's action does raise concern that problems may exist.

Conclusion: Judgement as to who has better control over gambling. Suggestion of further actions needed by the different governments to consolidate.

Marks scheme

Level	Descriptor	Marks
L3	A thorough answer that assesses the actions of both governments and presents evidence from the case material.	6-9
L2	An incomplete or one-sided presentation. Lacking reference to case material and / or ignoring one of the countries.	3-5
L1	Largely incomplete, irrelevant and incorrect explanations besides lacking reference to case materials.	1-2
E2	Supported judgment based on reasonable argument or evidence.	2-3
E1	Superficial evaluation and unsubstantiated judgement.	1

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Markers' Comment

Apparently, many students did not have enough time to complete this question.

This question has quite poorly attempted with almost all ended up at L2 with minimal evaluation marks given.

Majority of the students did not explain why the market failure occurs in the first place. As such, these students have weak explanation on how the market has been corrected or worsened.

For those who managed to how the market failed, many only had one-sided answer where they only discussed about either tax or education would work to correct the market. Many did not identify the action taken by the UK government which is deregulation.

For those who presented two-sided answer which correctly identify the respective actions by the SG and UK government, many lacked use of economic concepts to analyse how the policies work, deterring them from reaching the L3 score.

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Question 2: Economic Challenges in India and Japan Suggested Answers

(a) Describe the trend in India's budget position from 2013 to 2017.

India's budget position is in deficit **[1]** from 2013 to 2017. India's budget deficit has been **worsening [1]** from 2013 to 2017.

(b) Explain how higher growth rates in India would affect its budget position. [2]

Higher growth rates in India means that national income increases. This means that there is an increase in personal income tax collected. In addition, higher growth rates mean that profits earned are higher, resulting in an increase in corporate tax collected. Since budget position = T – G, an increase in T would improve the budget position.

OR

Higher growth rates in India means that national income increases. The increase in production of goods and services means more factors of production including labour are employed. The fall in unemployment means that the government has to pay out lesser unemployment benefits. Since budget position = T – G, a decrease in G would improve the budget position.

1m – explain how T increases or G falls

1m – state that India's budget position will improve

(c) Explain the factors that would allow India to achieve sustainable growth in 2018. [4]

<u>Actual growth **[2]**</u>

Extract 6 "high optimism in domestic demand" means that domestic demand is projected to increase. Hence, firms are willing to invest. This causes investment to increase. Since AD = C + I + G + (X-M), AD increases, which results in actual growth.

OR

Extract 6 "India's jump on World Bank's Ease of Doing Business Index" improves business confidence in India. This causes investment to increase which increases AD since AD = C + I + G + (X-M). This results in actual growth.

OR

Extract 6 "government allocated a massive amount to infrastructure". Higher government expenditure in 2018 causes AD to increase, since AD = C + I + G + (X-M). This results in actual growth.

OR

Extract 6 "more than 75% of the world economy is enjoying an upswing". Increase in worldwide income means that worldwide purchasing power has increased. Thus, consumers worldwide will consume more goods and services, including imports. Thus, demand for India's exports will increase. Since AD = C + I + G + (X-M), AD increases and resulting in actual growth.

<u>Potential growth **[2]**</u>

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Increase in investment/increase in government expenditure on infrastructure causes the quantity of capital to increase. This increases productive capacity, causing LRAS to increase, resulting in potential growth.

(d)(i) Identify the relationship between Japan's GDP and general price level from 2013 to 2017 shown in Table 3. [1]

- Real GDP growth rates are all positive → GDP increasing
- Inflation rates all positive (except for 2016) → generally GPL increase
- Direct/positive relationship between Japan's GDP and GPL from 2013 to 2017. **[1]**

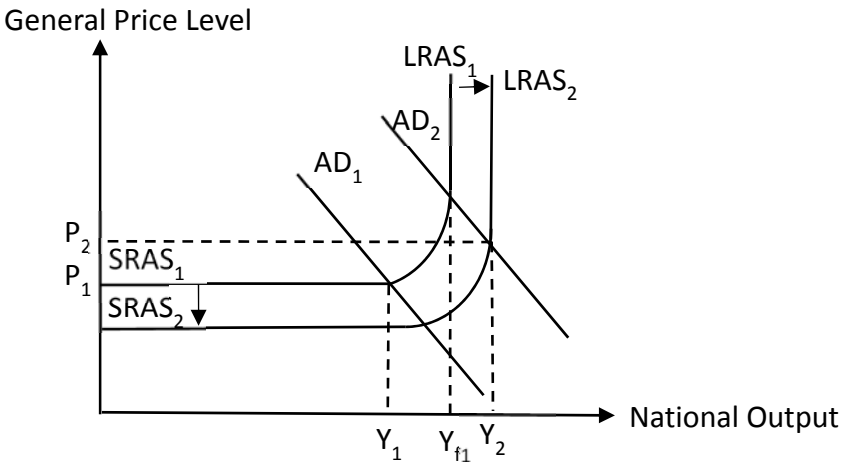
(d)(ii) With help of a diagram, account for the above relationship despite "the productivity targeted measures and more women entering the workforce" mentioned in Extract 9. [6]

Productivity targeted measures results in lower unit cost of production. In addition, more women entering the workforce increases the supply of labour, resulting in a fall in wages. This also reduces unit cost of production. As a result, SRAS increases and shift downwards from SRAS1 to SRAS2.

Higher productivity and greater number of labour increases Japan's productive capacity. This causes LRAS to shift rightwards from LRAS1 to LRAS2.

The increase in SRAS and LRAS would cause GPL to fall and national output to increase.

However, the fiscal stimulus put in place means there is higher government spending. This increases AD, resulting in a rightward shift of AD from AD1 to AD2.



Since the increase in AD outweighs the increase in AS, GPL increases from P1 to P2 and national output increases from Y1 to Y2. This accounts for the above relationship.

3m – explain SRAS and LRAS increase (either max 2m)

1m – explain AD increase

1m – diagram

1m – recognise that AD increase have to outweigh the increase in AS for GPL and national output to increase. Increase in AD > AS has to be shown in diagram.

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(e) Japan and India have adopted different monetary policy approaches.

(e)(i) Explain one possible reason why Japan is fearful of deflation. [2]

Deflation means that prices are falling. If consumers expect prices to fall, they will postpone consumption, leading to a fall in AD and a fall in actual growth which will worsen material standard of living.

Accept deflation worsens business confidence which worsens growth

1m if answer did not link to macro goal or SOL

(e)(ii) Explain how India's monetary policy can help to ease its inflation problem and comment on the suitability of her approach. [7]

Explain how India's monetary policy works **[4]**

India has adopted a contractionary monetary policy by increasing interest rates **[1]**. An increase in interest rate increases cost of borrowing**.** This causes a fall in demand for big ticket items, resulting in a fall in C **[1].** In addition, the profitability of investment falls, causing a fall in I **[1].** Since AD = C + I + G + (X-M), AD falls, resulting in a fall in demand pull inflation which eases inflationary pressures. **[1 – fall in demand pull inflation/GPL]**

Comment on suitability of approach **[3]**

Root cause of inflation

India's monetary policy may not be appropriate. India is experiencing inflation due to rising oil prices. As India imports oil and oil is a factor of production, this increases the unit cost of production, causing a fall in SRAS which results in cost push inflation. The contractionary monetary policy aims to correct demand pull inflation, which does not target the root cause of the inflation.

OR Conflict with other macroeconomic growth

Even though India's monetary policy helps to ease inflationary pressures, it might conflict with other macroeconomic goals. A fall in AD means that national output falls. Since firms produce lesser goods and services, lesser factors of production including labour would be employed. This increases demand-deficient unemployment which worsens India's unemployment crisis as mentioned in Extract 7.

(f) Discuss whether Japan should proceed with the imposition of the sales tax hike. [9]

Introduction

Whether Japan should proceed with the imposition of the sales tax hike depends on whether the sales tax hike generate a net benefit or net cost.

Thesis: Japan should proceed i.e. benefits of sales tax hike

Extract 10 "public debt is twice the size of its economy". The sales tax allows Japan to earn higher tax revenue. This helps to reduce its debt burden and helps to improve its budget position. This would improve business confidence, attracting I which causes AD to increase,

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allowing Japan to attain actual growth. This higher quantity of capital also allows Japan to attain higher potential growth.

The higher tax revenue collected allows Japan to spend on "social welfare costs" associated with a rapidly aging society. For example, government can spend more on healthcare or build more elderly friendly infrastructure. This improves the quality of life and hence, non-material standard of living of the elderly.

Anti-thesis: Japan should not proceed i.e. costs of sales tax hike

Sales tax would increase firms' cost of production. This causes SRAS to fall, which will worsen actual growth. In addition, the higher cost of production will lead to cost push inflation.

The lower growth would cause national income to fall. The fall in purchasing power means that Japanese citizens consume lesser goods and services. This causes a fall in material standard of living.

The higher prices of goods and services would worsen inequity. As sales tax is a regressive tax, the higher prices of goods and services would take up a larger proportion of the income for the lower income households. As a result, the lower income households would consume lesser goods and services, worsening their material standard of living.

Evaluation: overall net benefits or net cost

In the short run, Japan would incur the cost of lower actual growth. However, the long run benefit of an improved fiscal position will outweigh the short term cost. Thus, Japan should proceed with the sales tax hike while adopting complementary policies to alleviate the negative effects in the short run. For example, targeted subsidies can be provided to low income households for necessities to minimise the worsening of the SOL.

Level	Descriptor	Marks
L2	Well-developed explanation of the benefits **and** costs of proceeding with imposition of sales tax hike.	4 – 6
L1	Under-developed explanation of the benefits and costs of proceeding with imposition of sales tax hike. **OR** Well-developed explanation of the benefits **or** costs of proceeding with imposition of sales tax hike.	1 – 3
E	Supported judgement based on reasonable argument or evidence. Evaluation should focus on whether Japan should proceed with the imposition of a sales tax hike.	1 – 3

(g) In light of the macroeconomic problems that India is facing, assess the possible effects of a depreciation of its currency on its macroeconomic performance. [12]

Introduction

Depreciation occurs when the external value of the currency falls. India is facing macroeconomic problems of high unemployment (Extract 7 "India's economic growth has been largely jobless") and inflation (Extract 8).

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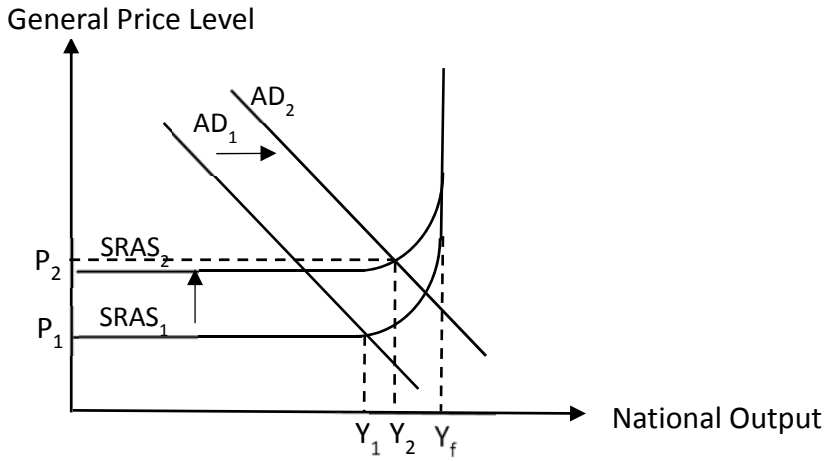
Explain how depreciation works

Price of exports in foreign currency falls while price of imports in domestic currency increases. Quantity demanded for exports by foreigners increases while quantity demanded of imports by locals fall as locals switch to the cheaper domestically produced goods and services. Thus, (X-M) increases, causing AD to increase and shift rightwards from AD1 to AD2.

However, the higher prices of imports mean that the price of imported raw materials increases. This increases the unit cost of production, causing SRAS to fall. SRAS shift upwards from SRAS1 to SRAS2.



Positive effects of depreciation on India's macroeconomic performance

Depreciation would positively impact India's macroeconomic performance.

Assuming increase AD is greater than the fall in SRAS, national output increases from Y1 to Y2. This results in actual growth.

In addition, the increase in production of goods and services means firms need to employ more factors of production including labour. This reduces demand-deficient unemployment in India.

Negative effects of depreciation on India's macroeconomic performance

However, deprecation also has negative effects on India's macroeconomic performance.

Depreciation causes both demand pull and cost push inflation. GPL increases from P0 to P1, which worsens India's inflation problem. Given that India is an oil importing country, depreciation of India currency would cause price of imported oil to rise further, worsening cost push inflation in India.

In addition, depreciation might not help India lower its unemployment rate. From extract 6, India is less dependent on global flows of trade. This means that (X-M) would increase to a small extent. Hence, a small number of jobs are created, which is insufficient for India's huge economy. Extract 7 states that "Indian GDP needs to grow at 10% to produce enough jobs".

Depreciation does not help to address structural unemployment that India is facing. From extract 7 "Traditional jobs have disappeared and are not coming back ... new skills requirements will further challenge its youth". Even though more jobs are created, if Indian citizens are not equipped with the skills that these new job requires, structural unemployment

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will still persist. Thus, depreciation does not help to correct structural unemployment as it does not address the mismatch of skills.

Depreciation would also worsen the income inequality issue in India. The higher national income earned would go to the rich, which increases the material SOL for the rich to a large extent and not the poor. This worsens income inequality which worsens inequity.

Evaluation: Does depreciation worsen or improves India's macroeconomic performance

Overall, depreciation has a greater negative impact on India's macroeconomic performance.

The current economic situation in India is that India is achieving sustainable growth while facing the problems of high unemployment and inflation. Even though depreciation helps India achieve further actual growth, it will worsen inflationary pressures in India. Higher inflationary pressures would deter investments as it is difficult for firms to project their expected revenue and cost from investing. This would worsen India's growth in the long run.

In addition, the jobs created might not address the high unemployment in India as it only corrects demand deficient unemployment, not structural unemployment.

Overall, depreciation would worsen India's macroeconomic performance. This causes standard of living in India to worsen, especially for the poor.

Level	Descriptor	Marks
L3	Well-developed explanations of both the positive **and** negative effects of a depreciation of India's currency on its macroeconomic performance. Answer should **consider** the macroeconomic problems that India is facing. No reference to the case: max 6m	6 – 9
L2	Under-developed explanations of both the positive **and** negative effects of a depreciation of India's currency on its macroeconomic performance. Answer **did not consider** the macroeconomic problems that India is facing. **OR** Well-developed answer on both the positive **or** negative effects of a depreciation of India's currency on its macroeconomic performance. Answer should **consider** the macroeconomic problems that India is facing.	3 – 5
L1	Answer is mostly irrelevant. Only a few valid points. Lacks economic reasoning.	1 – 2
E2	Supported judgment based on reasonable argument or evidence. Evaluation should focus on whether depreciation of currency has a net positive or negative effect on India's macroeconomic performance.	2 – 3
E1	Unsupported judgement.	1

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MERIDIAN JUNIOR COLLEGE
JC2 PRELIMINARY EXAMINATION 2018

H1 Economics **8823/01**

Paper 1 **10 September 2018**

3 hours

Additional Materials: Writing Paper

READ THESE INSTRUCTIONS FIRST

Do not open this booklet until you are told to do so.

Write your name, class and register number in the spaces at the top of the answer sheets.
Write in dark blue or black pen.
You may use an HB pencil for any diagrams or graphs.
Do not use staples, paper clips, highlighters, glue or correction fluid.

Answer **all** questions.

Begin Case Study Question 2 on a fresh sheet of paper.
At the end of the examination, fasten all your work securely to the cover sheet with the string provided.
The number of marks is given in brackets [ ] at the end of each question or part question.

[Turn Over]

This document consists of **9** printed pages and **2** cover sheets.

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Answer **all** the questions.

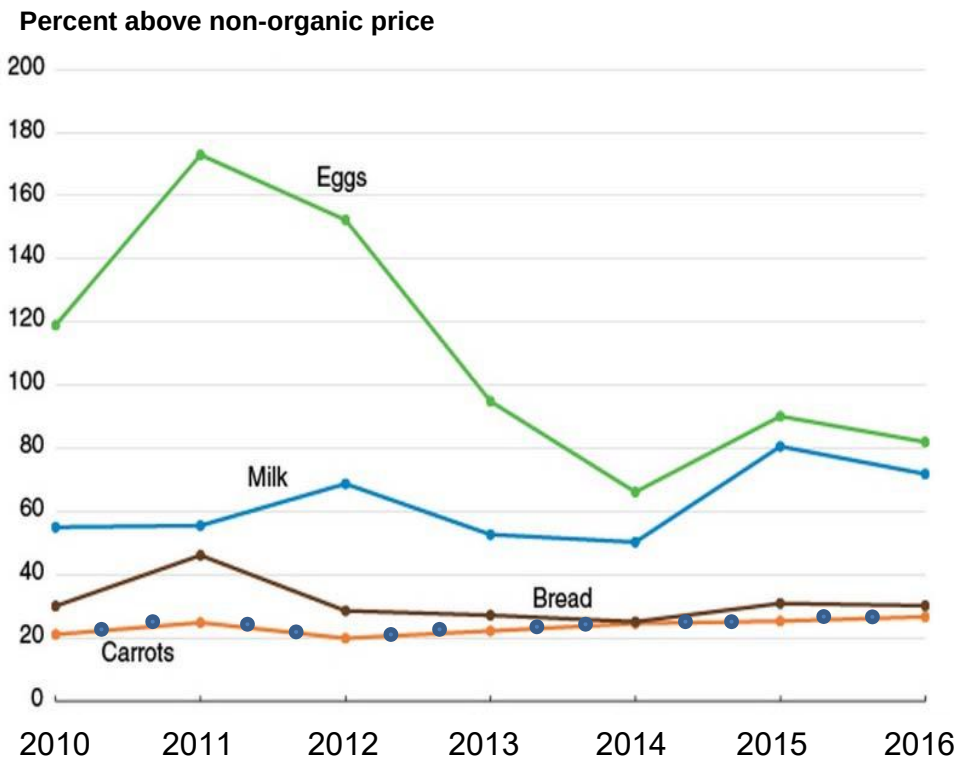
Question 1: Healthy Eating

Extract 1: The shifting economics of organic food

Anyone who's set foot in a supermarket or farmers' market in the past decade has noticed that organic food is considerably pricier than conventional food. But this "organic premium" — the difference between the two — can vary widely from product to product. And in some cases, the gap is actually shrinking quite dramatically.

So what's going on here? Start with the fact that any food certified as "organic" has to meet certain standards laid out by the United States Department of Agriculture (USDA). Organic farms are prohibited from using synthetic pesticides, petroleum-based fertilizers, bio solids fertilizer (made from sewage sludge), irradiation, preservatives and genetic engineering. Organic processed food has to go through certified organic plants though organic canned processed food are not required to omit preservatives. In addition, any animal products labelled organic have to come from animals that were fed organic feed and never given antibiotics or growth hormones. In practice, these rules can encompass a wide variety of farmers and methods. But by and large, the restrictions tend to increase costs and delay production. The difference in price tends to be lowest for things like spinach or apples.

Figure 1: Percent above non-organic price of selected organic food



Source: USDA, Economic Research Service 2016 Nielsen Homescan data

The difference in price is higher for processed food like organic canned spinach, and highest for animal products. What's really interesting, though, is how this premium is changing over time. Some organic products are getting cheaper. Others, not so much. For crops like spinach or coffee, the organic option typically costs more because farmers have to spend more on weed and pest control. But as a 2012 paper from the National Sustainable Agriculture Information Service explains, this situation has changed over time. Early on, organic produce farmers simply paid more for non-synthetic herbicides and insecticides. More recently, many organic farmers have been switching practices — harnessing techniques like integrated pest management and making better use of insect predators.

For milk or eggs to be certified as organic, farmers have to use feed for their animals (like corn and soy) that's grown organically. Organic feed has often been in short supply, particularly in recent years, as it's been far more lucrative for farmers to grow conventional feed.

Source: Vox, June 2016

Extract 2: Is organic food healthier?

Singapore Nutrition and Dietetics Association (SNDA) accredited dietitian Jaclyn Reutens said: "Organic food has become so popular because they claim that no pesticides, hormones and fertilisers are used. It sounds great because nobody would want to consume these chemicals."

Mrs Celeste Viviers, a registered dietitian and owner of nutrition and wellness consultancy Nutrilicious, said that there is little research to show that the nutritional value of organic food is significantly higher than regular food. "It is not proven that organic food is more nutritious than conventional food even though there are less pesticides and chemicals," she said. Mrs Viviers believes that the Internet and increase in spending power of Singaporeans are one of the reasons behind the increase in demand for organic food.

If organic food is really healthier as retailers and producers claim it to be, does it mean that only the rich in Singapore can afford the healthier lifestyle?

Adapted from The Straits Times, February 2016

Extract 3: Subsidies for diabetes screening

Ministry of Health, Singapore (MOH) and Health Promotion Board, Singapore (HPB) earlier announced the launch of the Diabetes Risk Assessment (DRA) tool and the enhanced Screen for Life (SFL) subsidies on 1 September 2017.

There is a need for early detection and appropriate intervention to prevent or delay the onset of diabetes and related complications. This would also help Singaporeans to realise the consequences of their diet which is becoming unhealthier over the years mainly due to high sugar content and unhealthy fats. Under the enhanced SFL screening, all eligible Singaporeans can go for recommended screening such as for diabetes, and follow up at Community Health Assist Scheme (CHAS) GP clinics. They will pay a small fixed fee of $5 or less for their screening test and first post-screening follow up consultation. CHAS cardholders will pay $2, and Pioneers (Singaporeans born before 1950) will not need to pay. HPB will be sending out invitation letters progressively, to notify Singaporeans of their eligibility.

Source: Ministry of Health, Singapore, 2017

Extract 4: Gearing up for the fight against diabetes

Imagine a Singapore where there is drinking water wherever you go - whether it is at a park connector or shopping centre - and you pay a sugar tax on your packaged drinks. That is what might happen as Health Minister Gan Kim Yong ramps up the war against diabetes. He wants to saturate the country with readily available drinking water to wean people off sweetened drinks. About 100 million cans of sweetened soda are sold here every month. Sugar, whether in drinks or food, raises the risks of obesity, heart disease and type 2 diabetes.

From this month, water must be provided at all government and People's Association functions. "In the past, it was always syrup or coffee or tea," he said. "If I ask for water, I get a bottled drink." He wants water to be made freely available in public areas and is working with the National Environment Agency, which oversees hawker centres, and the National Parks Board about providing more drinking points. "Making water widely available is very important in our efforts. Over time it'll become the norm. And then it becomes a mindset that healthier living is the normal way we live," he said.

Also on the cards is a possible sugar tax on packaged drinks, restricting advertising of such drinks, and prominent labelling of sugar or nutritional content, Mr Gan said in an exclusive interview. But these measures hinge on whether there is support for them on the ground. Mr Gan plans to hold public consultations on what more can be done to make Singaporeans adopt healthier lifestyles.

For a developed country, Singapore has a very high prevalence of diabetes. The disease costs the country more than $1 billion a year today. This price tag could soar to $2.5 billion a year by 2050 if nothing is done, as a million people here would be struggling with the disease. The “war on diabetes” that Mr Gan declared two years ago has yielded some promising results so far, he said. "Singaporeans are becoming more health-conscious."

Source: The Straits Times, June 2018

Questions

(a) Using Figure 1, compare the difference in price of organic and non-organic eggs with that of milk. [2]

(b) **(i)** Based on the data available, analyse and comment that changes in the cost of production were the main factor influencing changes in price of organic food. [5]

(ii) With reference to the concept of price elasticity of demand, explain how changes in cost of production will impact the total revenue of organic produce farmers. [3]

(c) With reference to Extract 1, account for the difference in price elasticity of supply between:

(i) organic canned spinach and organic spinach, [2]

(ii) non-organic food and organic food. [2]

(d) What is the difference between a normative and a positive economic statement? Identify **one** example of each statement from Extract 2. [4]

(e) Extract 2 suggests that only the rich in Singapore can afford the healthier lifestyle. Consider whether price controls on organic food is the best intervention against inequity in the market for organic food. [8]

(f) Explain why the market for sweetened drinks warrants an intervention from the Singapore government. [7]

(g) Assess the factors which the Singapore government should consider in reviewing the appropriateness of its actual and intended policies to correct the misallocation of resources in the market for sweetened drinks. [12]

[Total: 45]

Question 2: Economic Performance

Extract 5: Weaker growth expected for the UK economy

The UK economy grew at its weakest rate in five years in 2017, according to the latest forecast by PwC, an accountancy and professional services firm. UK's GDP is expected to be 1.8%, down from 1.9% in 2016 and the weakest expansion since the 1.5% growth seen in 2012, at the height of the Eurozone crisis. The Bank of England has kept its interest rates at 0.5% since the crisis, except in 2016.

The UK economy has slowed over the past 12 months due to the increase in inflation stemming from the drop in the pound in the wake of the 2016 Brexit vote, which has squeezed household disposable incomes. In June 2016, UK has voted to leave the European Union (EU), a single common market, which allows the free movement of goods, services, money and people within the EU, as if it was a single country.

Business investment has also come in much weaker than expected, which surveys suggest is due to uncertainty among firms related to post-Brexit trade arrangements. The UK slowdown comes as GDP growth in the Eurozone and the US picks up strongly.

Source: The Independent, 12 January 2018

Table 1: Selected economic indicators of UK

	2013	2014	2015	2016	2017
GDP per capita (USD)	42 783	46 855	44 340	40 535	39 761
Inflation rate (%)	2.6	1.5	0.0	0.7	2.7
Policy Interest Rate (%)	0.50	0.50	0.50	0.25	0.50

Table 2: Selected economic indicators of India

	2013	2014	2015	2016	2017
GDP per capita (USD)	1 488	1 614	1 632	1 750	1 979
Inflation rate (%)	10	6.0	4.9	4.5	3.6
Policy Interest Rate (%)	8.00	7.50	6.75	6.25	6.00

Source: focus-economics.com

Extract 6: Why are China and India growing so fast?

China and India demonstrate a common pattern of development different from that of the slowly growing West. Rapidly growing state (government) investment plays a significant role in China and India's economic expansion, while private investment is either growing very slowly or declining. In contrast, the slowly growing Western economies rely on private investment with no rapid growth of state investment. The facts of this global economic trend are also crucial for economic theory and analysis as advocates for free market believe "private investment is supposed to be "good" while state investment is supposed to be "bad" as state enterprises are inefficient. However, the facts show the exact opposite trend is occurring.

Based on the National Statistics Bureau data, the state-owned fixed-asset investment of China had grown by 23.5% from January to June 2016 over the same period in 2015, but private

fixed-asset investment growth had decelerated to 2.8%. As for India, its state investment increase was 21% while private investment fell by 1.4%. In contrast, Western economies are experiencing very slow growth. The U.S. is the best performing major Western economy, yet its year-on-year growth of private investment is as low as that of China and India and has been steadily falling. But unlike China and India, the U.S. has not increased state investment to compensate for falling private investment.

The correlation between rapid growth of state investment and fast economic growth, as well as between reliance on private investment and low economic growth, is evident. However, to some people, it is rapid economic growth in India and China that is leading to more state investment, not the other way around, or low rates of investment in the U.S. because of its slower growth. This is not plausible since state investment is directly under government control and not subject to market forces. Both the Chinese and Indian government have made clear that they have deliberately taken the decision to increase state investment, in order to stimulate economic growth, while in the U.S. many are ideologically opposed to state investment.

Source: Prof John Ross, on Huffington Post website, 6 December 2017

Extract 7: Promoting strong and inclusive growth in India

India's economy continues to grow at an impressive rate, with projected annual GDP growth of 7.5% in 2017-18. India will thus remain the fastest-growing G20 economy. Unprecedented growth in exports in services since the 1990s has made India a global leader in this sector. Inflows of foreign direct investment (FDI) grew at three times the annual world average rate in the last decade, reflecting the success of efforts to attract international investment and gradually loosen restrictions to foreign investment. India's economic successes are being translated into increased well-being for its population. As GDP per capita has more than doubled in ten years, extreme poverty has declined substantially. Access to education has steadily improved, and life expectancy has risen.

Multiple opportunities present themselves for India, and the right mix of policies is needed to take advantage of them. India has made advances in integrating in global value chains and developing a competitive advantage in fields such as information and communication technology. Now is the time to secure continued progress by boosting competition and further lowering barriers to trade and investment. Looking to the future, it will be vital to fully tap into the potential offered by India´s young population. This means investing in the large numbers of young people entering the labour market. Likewise, the rapid pace of development must be matched with the upgrades to infrastructure necessary to support it.

Source: www.oecd.org/india, accessed 18 June 2018

Extract 8: The growing importance of the technology economy

Technology has deeply affected the global economy and its usage has been linked to marketplace transformation, improved living standards and more robust international trade. Technological advances have significantly improved operations and lowered the cost of doing business. Currently, as an example, just a few technicians controlling robotic systems can operate an entire manufacturing plant, and innovative inventory systems are capable of supplying needed parts within a short time for assembly. In addition to that, e-commerce and online banking capabilities have also helped reduce the cost of doing business.

The recent World Development Report (WDR) 2016 Digital Dividends highlights many instances of how e-commerce is boosting the employment opportunities of those who may have been excluded from the global market place. According to the report, the Internet enables many small firms to participate in global trade, thus leading to more inclusion. The WDR notes that 'China's State Information Center estimates that the recent boom in the country's e-commerce sector has created 10 million jobs in online stores and related services, about 1.3 percent of the country's employment. New opportunities for entrepreneurship and self-employment are also growing rapidly in the digital economy.' By using e-commerce platforms, businesses no longer need to be big to access global markets.

Many researches from many respected companies, such as BCG, IMF and World Economic Forum show that whenever private companies cut back on technology investments aiming to shore up profits, the result is the opposite, as profits sink significantly, and, as a side effect, GDP also falls dramatically, then a chain reaction starts with the fall of labour productivity after a few years.

Source: Macro Antonio Cavallo, CIO.com, 21 December 2016 & The World Bank, 18 March 2016

Questions

(a) **(i)** Describe the trend in the UK's general price level from 2013 to 2016. [2]

(ii) With reference to Extract 5, explain the change in the UK's general price level in 2017. [3]

(b) **(i)** State the monetary policy stance adopted by both UK and India. [1]

(ii) Explain the possible factors that influenced the level of interest rates set by these two countries from 2013 to 2017. [6]

(c) Comment on how changes in GDP per capita could have affected the well-being of the population in India and UK. [6]

(d) Using AD/AS analysis, explain the possible trade-off and its consequences when rapid pace of development in India is not matched with the necessary upgrades to its infrastructure (Extract 7). [6]

(e) Discuss whether technological advancement is key in reducing unemployment in large countries such as India and China. [9]

(f) 'Countries should rely more on state investment instead of private investment to promote sustained economic growth'. Discuss this view. [12]

[Total: 45]

- End of Paper -

MERIDIAN JUNIOR COLLEGE

JC2 PRELIMINARY EXAMINATION 2018

8823/1

COVER SHEET

H1 ECONOMICS

Case Study Question 1

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QUESTIONS ATTEMPTED		MARKS
a)		
b)	i)	
	ii)	
c)	i)	
	ii)	
d)		
e)		
f)		
g)		
TOTAL		/45

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H1 ECONOMICS

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QUESTIONS ATTEMPTED		MARKS
a)	i)	
	ii)	
b)	i)	
	ii)	
c)		
d)		
e)		
f)		
TOTAL		/45

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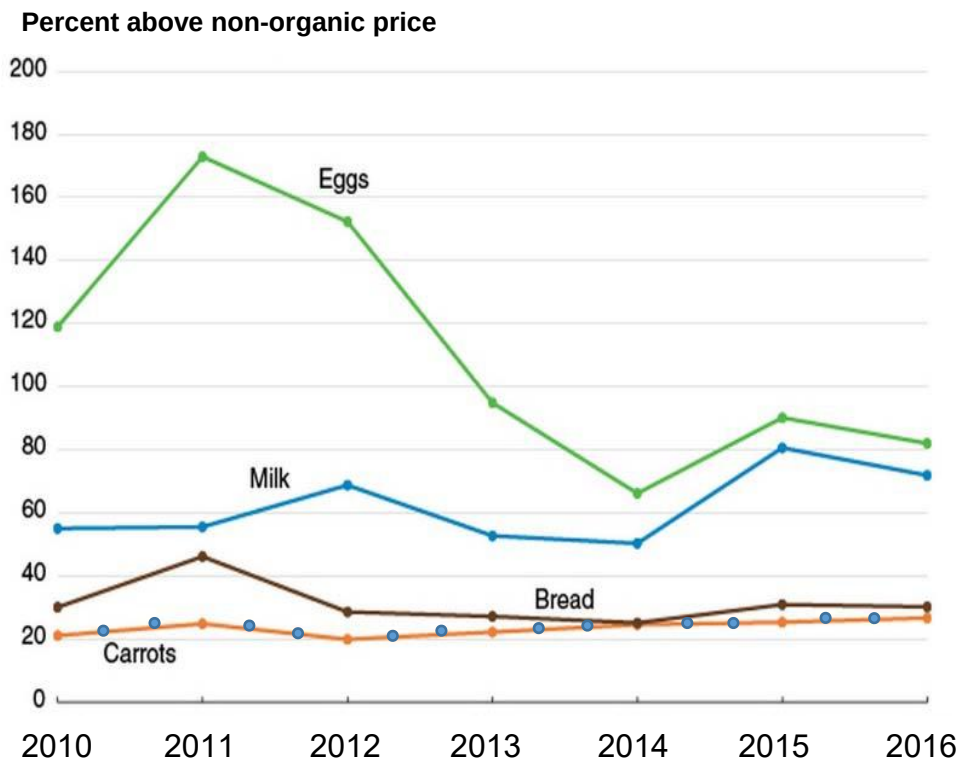
Question 1: Healthy Eating

Extract 1: The shifting economics of organic food

Anyone who's set foot in a supermarket or farmers' market in the past decade has noticed that organic food is considerably pricier than conventional food. But this "organic premium" — the difference between the two — can vary widely from product to product. And in some cases, the gap is actually shrinking quite dramatically.

So what's going on here? Start with the fact that any food certified as "organic" has to meet certain standards laid out by the United States Department of Agriculture (USDA). Organic farms are prohibited from using synthetic pesticides, petroleum-based fertilizers, bio solids fertilizer (made from sewage sludge), irradiation, preservatives and genetic engineering. Processed food has to go through certified organic plants though organic canned processed food are not required to omit preservatives. In addition, any animal products labelled organic have to come from animals that were fed organic feed and never given antibiotics or growth hormones. In practice, these rules can encompass a wide variety of farmers and methods. But by and large, the restrictions tend to increase costs and delay production. The difference in price tends to be lowest for things like spinach or apples.

Figure 1: Percent above non-organic price of selected organic food



Source: USDA, Economic Research Service 2016 Nielsen Homescan data

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The difference in price is higher for processed food like organic canned spinach, and highest for animal products. What's really interesting, though, is how this premium is changing over time. Some organic products are getting cheaper. Others, not so much. For crops like spinach or coffee, the organic option typically costs more because farmers have to spend more on weed and pest control. But as a 2012 paper from the National Sustainable Agriculture Information Service explains, this situation has changed over time. Early on, organic produce farmers simply paid more for non-synthetic herbicides and insecticides. More recently, many organic farmers have been switching practices — harnessing techniques like integrated pest management and making better use of insect predators.

For milk or eggs to be certified as organic, farmers have to use feed for their animals (like corn and soy) that's grown organically. Organic feed has often been in short supply (particularly in recent years, as it's been far more lucrative for farmers to grow conventional feed).

Source: Vox, June 2016

Extract 2: Is organic food healthier?

Singapore Nutrition and Dietetics Association (SNDA) accredited dietitian Jaclyn Reutens said: "Organic food has become so popular because they claim that no pesticides, hormones and fertilisers are used. It sounds great because nobody would want to consume these chemicals."

Mrs Celeste Viviers, a registered dietitian and owner of nutrition and wellness consultancy Nutrilicious, said that there is little research to show that the nutritional value of organic food is significantly higher than regular food. "It is not proven that organic food is more nutritious than conventional food even though there are less pesticides and chemicals," she said. Mrs Viviers believes that the Internet and increase in spending power of Singaporeans are one of the reasons behind the increase in demand for organic food.

If organic food is really healthier as retailers and producers claim it to be, does it mean that only the rich in Singapore can afford the healthier lifestyle?

Adapted from The Straits Times, February 2016

Extract 3: Subsidies for diabetes screening

Ministry of Health, Singapore (MOH) and Health Promotion Board, Singapore (HPB) earlier announced the launch of the Diabetes Risk Assessment (DRA) tool and the enhanced Screen for Life (SFL) subsidies on 1 September 2017.

There is a need for early detection and appropriate intervention to prevent or delay the onset of diabetes and related complications. This would also help Singaporeans to realise the consequences of their diet which is becoming unhealthier over the years mainly due to high sugar content and unhealthy fats. Under the enhanced SFL screening, all eligible Singaporeans can go for recommended screening such as for

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diabetes, and follow up at Community Health Assist Scheme (CHAS) GP clinics. They will pay a small fixed fee of $5 or less for their screening test and first post-screening follow up consultation. CHAS cardholders will pay $2, and Pioneers (Singaporeans born before 1950) will not need to pay. HPB will be sending out invitation letters progressively, to notify Singaporeans of their eligibility.

Source: Ministry of Health, Singapore, 2017

Extract 4: Gearing up for the fight against diabetes

Imagine a Singapore where there is drinking water wherever you go - whether it is at a park connector or shopping centre - and you pay a sugar tax on your packaged drinks. That is what might happen as Health Minister Gan Kim Yong ramps up the war against diabetes. He wants to saturate the country with readily available drinking water to wean people off sweetened drinks. About 100 million cans of sweetened soda are sold here every month. Sugar, whether in drinks or food, raises the risks of obesity, heart disease and type 2 diabetes.

From this month, water must be provided at all government and People's Association functions. "In the past, it was always syrup or coffee or tea," he said. "If I ask for water, I get a bottled drink." He wants water to be made freely available in public areas and is working with the National Environment Agency, which oversees hawker centres, and the National Parks Board about providing more drinking points. "Making water widely available is very important in our efforts. Over time it'll become the norm. And then it becomes a mindset that healthier living is the normal way we live," he said.

Also on the cards is a possible sugar tax on packaged drinks, restricting advertising of such drinks, and prominent labelling of sugar or nutritional content, Mr Gan said in an exclusive interview. But these measures hinge on whether there is support for them on the ground. Mr Gan plans to hold public consultations on what more can be done to make Singaporeans adopt healthier lifestyles.

For a developed country, Singapore has a very high prevalence of diabetes. The disease costs the country more than $1 billion a year today. This price tag could soar to $2.5 billion a year by 2050 if nothing is done, as a million people here would be struggling with the disease. The “war on diabetes” that Mr Gan declared two years ago has yielded some promising results so far, he said. "Singaporeans are becoming more health-conscious."

Source: The Straits Times, June 2018

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Questions

(a) *Using Figure 1, compare the difference in price of organic and non-organic eggs with that of milk.* *[2]*

Similarity: Both prices of organic eggs and organic milk is higher than the price of its non-organic variant.

Difference: The difference in price of organic and non-organic egg is becoming narrower whereas the difference in price of organic and non-organic milk is becoming wider.

(b) ***(i)*** *Based on the data available, analyse and comment that changes in the cost of production were the main factor influencing changes in price of organic food.* *[5]*

Establishing the hypothesis:

Changes in cost of production as cited in the extract were related to use of alternative practices and techniques. This will lead to a fall in unit cost of production, and holding the price of the organic produce constant, a lower unit cost of production would result in a higher potential profit. Hence, at each possible price more units will be supplied.

This increase in supply will lead to a fall in the price of the organic produce.

Data affirming the hypothesis:

Assuming that the price of non-organic produce is constant, figure 1 shows that the gap between the prices of organic eggs and organic bread with its non-organic variant becoming smaller over the period, suggesting that there is a fall in price

Also in Figure 1, it can be seen that there has been an overall increase in the gap between the organic eggs and organic milk with its non-organic variant between 2014 to 2016. This increment could be due to increase cost of production as for milk or eggs to be certified as organic, farmers have to use feed for their animals (like corn and soy) that's grown organically. Organic feed has often been in short supply (particularly in recent years, as it's been far more lucrative for farmers to grow conventional feed). This pushes up the cost of production.

Data suggesting otherwise:

Price difference for organic carrots and organic milk as compared to its non-organic variants has been increasing over

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the period while the price difference between organic bread and non-organic bread did not change much overall, this is in spite of the changes in cost of production.

Variables that could have interfered with the hypothesis:

Extract 2 also suggest that the higher prices from organic produce could be due to higher demand due to taste and preference towards food sources with no chemical and pesticides, which is further enhanced by the increase spending power of consumers possibly due to increase in real income.

The data presented in Figure 1 is not conclusive of the actual price of the organic produce, the difference could be due to a change in the price of the non-organic variant itself. Such changes to the prices of its non-organic variant could be due factors that have different impact on the organic produce market, e.g. price of pesticides which are not permitted in organic farming.

Synthesis:
While cost of production is a factor behind prices through affecting supply, other factors through demand also play a part in determining market prices. Whether it is the main factor would be dependent on the extend of the change in cost of production measured against other triggers. It would be important to access these other data to make a more conclusive comment.

(ii) With reference to the concept of price elasticity of demand, explain how changes in cost of production will impact the total revenue of organic produce farmers. [3]

Changes in cost of production as mentioned in the extract 1 for organic produce has been generally falling, leading to an increase in supply of organic produce. This would lead to a fall in price of organic produce, ceteris paribus.

Option1:

As organic produce is generally easily substituted by its non-organic variant, the demand for organic produce would be price elastic.

Thus given a fall in price, this would lead to a more than proportionate increase in quantity demanded.

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The revenue gained from the increase in quantity will thus offset the fall in revenue loss from the fall in price, leading to an overall increase in total revenue for organic produce farmers.

Option 2:

As the market for organic produce caters to those who are health conscious, it might mean that for this group of consumers, they see little or no alternative to organic produce in order to live a certain lifestyle. Therefore, the demand for organic produce would be relatively price inelastic.

Thus given a fall in price, this would lead to a less than proportionate increase in quantity demanded.

The revenue loss from the fall in price will thus offset the gain in revenue from the increase in quantity, leading to an overall decrease in total revenue for organic produce farmers.

(c) With reference to Extract 1, account for the difference in price elasticity of supply between:

(i) organic canned spinach and organic spinach, [2]

The supply of organic canned spinach is relatively more price elastic compared to that of organic spinach.

Organic canned spinach which has preservatives added will have a longer shelf life and be allowed to be kept as stocks in warehouse as compared to organic spinach which is perishable. Thus there is more availability of stock for organic canned spinach which would translate to the a more responsive change in quantity supplied given a change in its price.

(ii) non-organic food and organic food. [2]

The supply of non-organic food is relatively more price elastic compared to that of organic food.

As mentioned in extract 1, the restrictions placed on organic produce delay production. A lack of access to the types of fertilisers allowed and prohibition to use genetically engineer inputs will mean longer gestation periods and longer time for harvests. Thus any changes in prices of the organic produce is less likely to meet significant changes in quantity supplied as compared to that of the non-organic farms which can have faster turnaround due to its production methods.

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(d) What is the difference between a normative and a positive economic statement? Identify **one** example of each statement from Extract 2. [4]

A positive statement can be verified and tested based of facts and evidence if the claims it makes is true or false, whereas a normative statement involves value judgement and its claims are based on subjective beliefs.

Singapore Nutrition and Dietetics Association (SNDA) accredited dietitian Jaclyn Reutens said: "Organic food has become so popular because they claim that no pesticides, hormones and fertilisers are used. It sounds great because nobody would want to consume these chemicals."

Mrs Celeste Viviers, a registered dietitian and owner of nutrition and wellness consultancy Nutrilicious, said that there is little research to show that the nutritional value of organic food is significantly higher than regular food. "It is not proven that organic food is more nutritious than conventional food even though there are less pesticides and chemicals," she said. Mrs Viviers believes that the Internet and increase in spending power of Singaporeans are one of the reasons behind the increase in demand for organic food.

If organic food is really healthier as retailers and producers claim it to be, does it mean that only the rich in Singapore can afford the healthier lifestyle?

Yellow highlighted = normative economic statement
Blue highlighted = positive economic statement

(e) Extract 2 suggests that only the rich in Singapore can afford the healthier lifestyle. Consider whether price controls on organic food is the best intervention against inequity in the market for organic food. [8]

Introduction - Establish the initial equilibrium:

Prices are determined by interactions between demand and supply, a low supply due to high cost of production and high demand due to strong taste and preference and increasing income of consumers lead to a high equilibrium price.

Such a high price render organic produce affordable only to the rich and present a situation of inequity where resources are rationed only to the select group of consumers.

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Thesis –

What is price control (price ceiling)

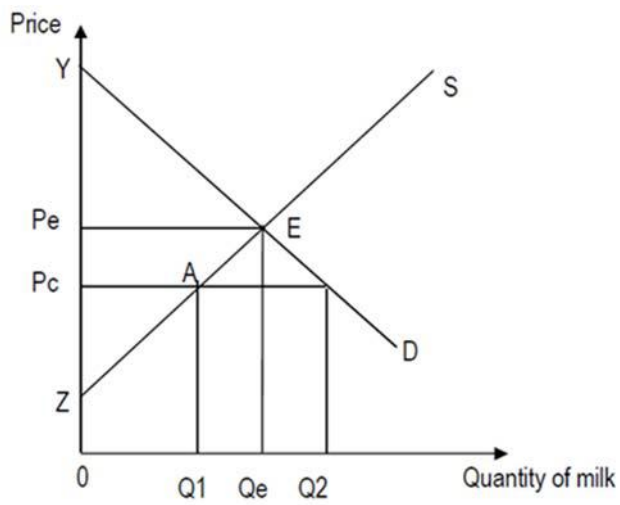
Price control in the form of price ceiling would be suitable to tackle this.

A price ceiling refers to the maximum price that a producer can charge for a good legally. It is the maximum legally permissible price.

How does price control works?

For it to be effective, it must be set below the equilibrium price. If it is set above equilibrium, the price will fall to the equilibrium price, rendering a price ceiling ineffective. If it is set below equilibrium, the price will not be permitted to rise to equilibrium price, thereby making the price ceiling effective.

With reference to the following diagram, the free market equilibrium price and quantity of milk are OPe and OQe respectively. Before the implementation of the price ceiling, the total revenue of the producers is OPeEQe. If a price ceiling of OPc is imposed on milk, the quantity demanded will rise to 0Q2 and quantity supplied will fall to 0Q1. The total revenue of the producers will fall from OPeEQe to OPcAQ1. An excess demand of Q1Q2 results. The excess demand will remain because the market is prevented from readjusting itself.



How well does price control works?

A price ceiling is used when the government considers the market-determined price to be too high. It thus aims to protect the buyers of the product. It is usually used to achieve a fairer distribution of essential goods and services such as staple foodstuff, transport, utilities and

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housing by ensuring affordability of these goods to lower income households

Anti-thesis

Unintended consequences of price ceiling

- The excess consumer demand is likely to lead to the development of black market, where some producers are tempted to sell above the price ceiling. Moreover, some consumers will be prepared to pay higher price in order to ensure their own consumption of the good. This outcome runs counter to the intention of making it easier for low–income groups to consume the good.
- Excess demand for the good implies that some method will have to be used to ration the limited supply of the product to the consumers. One way of distributing the limited supply is on a “first come first serve” basis. This will lead to queues developing and is inefficient because they waste buyers’ time. The suppliers could also ration the goods according to their own personal biases, selling only to their friends and relatives. This method is inefficient because the good does not go to the buyers who value it most. In contrast, the rationing mechanism in a free market is both efficient and impersonal. When the market reaches the equilibrium, anyone who wants to pay the market price can get the good.
- Another way of allocating the product is by government rationing. Here, the government issues ration booklets to households according to their personal circumstances. The booklets contain coupons which can be exchanged for basic foodstuffs. However, rationing is likely to be extremely unpopular during peacetime and would involve high administration costs.

A better alternative to price control?

An alternative to a price ceiling would be to offer a subsidy. E.g. the government can make the price of the good more affordable by paying a fraction of the price of the good for poor families. Such subsidies can raise the living standards of the producers without causing a shortage.

Subsidies are transfers from the government to the firm for the provision of goods and services. In the case of a specific subsidy, the government grants to the producers a subsidy per unit of the good produced.

Such a subsidy lowers the unit cost of production of supplying a good to the market by the extent of the subsidy per unit. Holding the price of the good constant, a lower unit cost of production would result in a higher potential profit per unit. Hence, at each possible price more units will be supplied causing a rightward shift in the supply curve from S1 to S2 as shown in following diagram.

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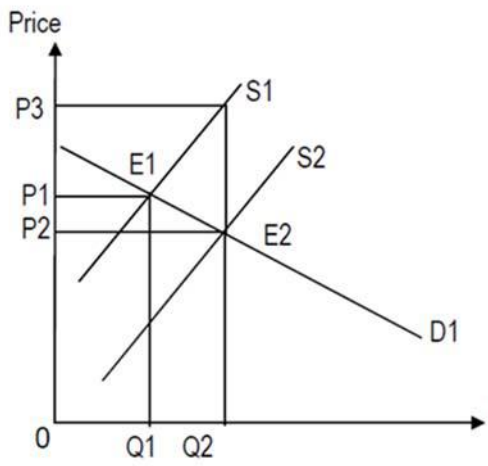
Effects of a Specific Subsidy

With reference to diagram, the initial equilibrium price and output are OP1 and OQ1 respectively. When a subsidy is granted on wheat, the supply curve will shift downwards by the full amount of the subsidy granted. At OP1, there will be an excess supply of wheat. This will cause the price to fall and quantity exchanged to rise. These changes will occur until a new market equilibrium is attained at E2 with a lower equilibrium price, OP2 and a higher equilibrium quantity, OQ2.



Conclusion

As seen in Extract 2, Mrs Celeste Viviers, a registered dietitian and owner of nutrition and wellness consultancy Nutrilicious, said that there is little research to show that the nutritional value of organic food is significantly higher than regular food. "It is not proven that organic food is more nutritious than conventional food even though there are less pesticides and chemicals". This suggest that perhaps there really is no need for any form of government intervention as organic food could just be a luxury item and not a keen essential which is required for improvement in quality of life.

Levels	Descriptors	Marks
L2	A well explained answer on how price ceiling works AND a well explained alternative	4-6
L1	A descriptive explanation on how price ceiling and an alternative works. A well-explained answer on how price ceiling works	1-3
Evaluation	Explained evaluation of the policies given the context of Singapore.	1-2

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	Commenting on the validity of government intervention.	

(f) Explain why the market for sweetened drinks warrants an intervention from the Singapore government. [7]

Introduction:

Sweetened drinks are a form of demerit goods.

Demerit goods are goods that the government believes consumers will consume too much if provided by the market because of **information failure** (under-estimation of private costs in consumption or an over-estimation of the private benefits) and **negative externalities in consumption** (costs on third parties not considered).

1. **Explaining the Divergence of the benefits curves:**

Information Failure:

Private benefits in consumption of demerit good overestimated

The private costs of drinking sweetened drinks include the consumer's expenditure on the drink as well as extra health care costs due to diabetes, loss of income due to absences from work caused by diabetic related illnesses and early deaths. In the case of sweetened drinks, consumers may underestimate the private costs of sweetened drinks consumption as they may not be fully informed of the health risks of diabetes or may underestimate the chances of being affected by other diabetic-related illnesses. Because they do not fully appreciate the harmful effects (information failure) of such goods, they tend to over-estimate the private benefits of sweetened drinks and hence over-demand sweetened drinks. The demand is at MPB1 (or D1) instead of MPB2 (D2).

External costs of demerit good not considered:

In addition, the consumption of demerit goods such as sweetened drinks also imposes external costs on third parties. The government incurs extra cost of financing health care costs of citizens who suffer from diabetic related illnesses. Employers will suffer loss in revenue due to lower productivity of workers with diabetes at work. The employers may also incur extra cost of financing health care costs of workers who suffer from diabetic related illnesses. The external cost in consumption (MEC) causes the social benefit (MSB) to be less than the private benefit (MPB2) of consumption.

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The overall **divergence** between MSB and MPB1 is due to both information failure and negative externalities in consumption.

2. **Explaining the 2 equilibriums**

Socially Optimal Equilibrium:

To maximize society's welfare, the socially optimal level of output is at 0Q3 where MSB=MSC. At the market output 0Q1, MSC exceeds MSB and there can be an improvement in society's welfare by decreasing production and consumption of the demerit good.

Overproduction and overconsumption of demerit good:

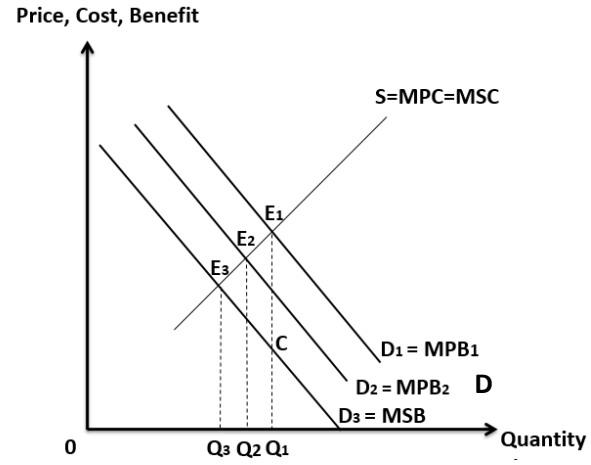
3. **Allocative inefficiency:**

There is, thus an overproduction and overconsumption of Q1Q3 units of the good which means that there is an overallocation of resources into the market for sweetened drinks.

4. **Explain Deadweight Loss:**

Total social cost from consuming Q1Q3 units of the good (Q1E1E3Q3) exceeds the total social benefit from consuming Q1Q3 units (Q1CE3Q3), leading a welfare loss of area E1E3C. This is also known as a deadweight loss. Hence, there is allocative inefficiency in the market where the right amount of the good is not produced and thus the market fails.

Figure: Demerit Goods



Conclusion:

The presence of market failure therefore warrants government intervention. This is all the more so when the extent of the market failure is likely to very large as the externalities incur by the government as seen in the extract amounts to 1 billion SGD a year with the possibility of rising to 2.5 billion SGD by 2050.

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(g) Assess the factors which the Singapore government should consider in reviewing the appropriateness of its actual and intended policies to correct the misallocation of resources in the market for sweetened drinks. [12]

<u>Factors to consider when reviewing the various policies</u>

1. Perspectives

The Singapore government may consider multiple perspectives when making the decision to implement or review policies, for example, from the standpoint of equity in other markets or labour productivity for the economy (macro perspective). This could affect the government perception of the costs and benefits of correcting inefficiency in the market. The decision will bring about a set of **outcomes** in terms of:

Intended consequences, which include the effects that were expected, such as reduced misallocation of resources associated over consumption of sweetened drinks.

Unintended consequences, which include the consequences faced by the government, such as the increase in concerns on the ground in regards to rise in cost of living, and the consequences that impact the macro economy due to the fall in productivity of labour from diabetic related illness, or even more equity in the healthcare markets.

a. Effectiveness in achieving its objective i.e. lower consumption (Intended Consequences)

The objective of all the policy is to influence the eventual consumption level either through demand side or supply side. The nearer the new market equilibrium after intervention is to the socially optimum level of consumption, the more appropriate is the policy.

Effectiveness of the demand side policies:

As most of the above mentioned policies works through influencing the demand of sweetened drinks through education and correction of information failure, its extent of how it will lead to a fall in demand is dependent on the receptivity of the consumers.

This is in term affected by the ability of the consumer to make rational decision:

There are some assumptions underpinning the rational decision making of a consumer:

- there is complete information

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- consumers have the ability to conduct analysis and think through competing alternatives which are healthier
- consumers have sufficient time to arrive at a rational decision as some of these consumption patterns are habitual and require time to change

Generally speaking, given the level of literacy and education, Singaporeans are mostly rational and are receptive to correcting the information failure associated with overconsumption of sweetened drinks, this was further affirmed by the Health Minister in Extract 4.

Effectiveness of the supply side policies:

The suggested sugar tax on sweetened drinks on the contrary may not be as effective in terms of lowering consumption.

The demand for sweetened drinks is likely to be price inelastic as consumers of such drinks are likely to be habitual drinkers to such beverages and see little substitutes to it. Also the fact that these sweetened drinks form a rather insignificant portion of the consumer's income, this would mean that any increase in price due to tax is likely to see a less than proportionate fall in quantity demanded.

b. Unintended Consequences

An unintended outcome of encouraging Singaporeans to go for a diabetes check-up and through that be more aware of their information failure associated with the consumption of sweetened drinks would be in the form of more affordable healthcare services.

Subsidies provided for diabetes check-up lower the price of these check-ups and provide access to the poor who may otherwise not be able to afford this merit good. This ensures greater equity. While this may not be directly link to the sweetened drinks market, equity in other markets could be of an importance perspective for the government.

Thus part of reviewing policies would include unintended consequences, both positive and negative in the market of implementation, and even in other markets.

2. Constraints: Resources such as Finances and Labour

In reviewing appropriateness of policies, an area of concern is whether there are enough resources available for the implementation of the policies.

Installation and provision of sweetened drinks alternatives in the form of drinking points can be a serious financial commitment which is not once off as resources are required for its upkeep and maintainence.

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Provision of subsidies for diabetic-related illness check-up can also amount up to huge finances as Singapore's intention is to provide such healthcare services for free or maximum of a 5SGD fee.

Sugar taxes on sweetened drinks on the other hand does not add on to the burden of Singapore finances and yet at the same time generate tax revenue that could be rechannelled back to run the above mentioned policies.

Generally speaking, while Singapore may not have an issue with spending especially when we are not laden with government debt or deficit, prudence is still of important value.

While constraints discussed above are in the form of finances, resources may be in the form of requirement of labour to monitor whether enforcement such as printing of information on sweetened drinks are adhered to. In Singapore, the shortage of labour can prove to be a defining constraint. Though such a constraint is not as severe as monitoring need not be as frequent in a country where the rule of law is practiced with little or no corruption. The geographical size of Singapore also minimize the requirement of a large monitoring contigent.

3. Opportunity Costs

In similar fashion, the policies which require the most resources would incur the largest opportunity cost. As such whichever policies that require the least would be seen as appropriate. Refer to point 2.

4. Ease of implementation/ fine tuning

Another factor for consideration is the ease of implementation and fine tuning of the said policies.

For example, should there be a narrowing of gaps between actual demand and the correct demand, a policy like sugar tax can be adjusted accordingly.

Tax is considered to be a good measure for a number of reasons. This is a market-based solution and can be easily implemented to reduce consumption. It is flexible as the amount of taxes can be varied to reflect the external cost.

5. Data Collection

Another factor to consider is the dependence of the policies on accurate data collected.

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For example, success in the use of taxes depends on the accuracy in measuring the exact value of external costs of an activity and hence deciding on the correct amount of taxes which in practice is a difficult task as they may be difficult to monetize and estimate. This makes imposing the correct amount of taxes difficult. Over-taxing and under-taxing will still lead to inefficient allocation of resources.

Usually in the context of Singapore, such data are quite accurate as data collection is relatively easier given the size of the country and also the administration involved in data collection are equipped with the knowledge and appropriate technology and process.

6. Source of the problem

An important consideration is the source of the problem, the Singapore government might be interested to tackle the root of the issue and thereby understanding whether the inefficiency is due to demand or supply might be key in selecting or streamlining its policies.

Conclusion:

The most important factor to assess the appropriateness of the various policies would be the extent to which its objectives is met, this is especially significant given the size of the externalities as predicted by the government.

Factors like constraints and data collection are relatively less significant as they are not meaningful given the circumstances in which Singapore operates in i.e. a healthy budget with surplus year on year and data accuracy given its well-trained administration.

Levels	Descriptors	Marks
L3	An answer that explain at least 2 factors in details, explaining why the government should consider these factors prior or after implementation. Cap at 7 marks for 2 well explained factors	6-9
L2	An answer that explains the various factors descriptively OR An answer that explain a factor thoroughly.	3-5

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L1	Explanation of the various policies Singapore use to tackle the market of sweetened drinks OR A vague list of the various factors that the government considers in policy review	1-2
Evaluation	Ranking the factors with justification behind the rankings OR Commenting on the significance of the factors given the context of Singapore	1-3

[Total: 45]

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Question 2: Economic Performance

Extract 5: Weaker growth expected for the UK economy

The UK economy grew at its weakest rate in five years in 2017, according to the latest forecast by PwC, an accountancy and professional services firm. UK's GDP is expected to be 1.8%, down from 1.9% in 2016 and the weakest expansion since the 1.5% growth seen in 2012, at the height of the Eurozone crisis. The Bank of England has kept its interest rates at 0.5% since the crisis, except in 2016.

The UK economy has slowed over the past 12 months due to the increase in inflation stemming from the drop in the pound in the wake of the 2016 Brexit vote, which has squeezed household disposable incomes. In June 2016, UK has voted to leave the European Union (EU), a single common market, which allows the free movement of goods, services, money and people within the EU, as if it was a single country.

Business investment has also come in much weaker than expected, which surveys suggest is due to uncertainty among firms related to post-Brexit trade arrangements. The UK slowdown comes as GDP growth in the Eurozone and the US picks up strongly.

Source: The Independent, 12 January 2018

Table 1: Selected economic indicators of UK

	2013	2014	2015	2016	2017
GDP per capita (USD)	42 783	46 855	44 340	40 535	39 761
Inflation rate (%)	2.6	1.5	0.0	0.7	2.7
Policy Interest Rate (%)	0.50	0.50	0.50	0.25	0.50

Table 2: Selected economic indicators of India

	2013	2014	2015	2016	2017
GDP per capita (USD)	1 488	1 614	1 632	1 750	1 979
Inflation rate (%)	10	6.0	4.9	4.5	3.6
Policy Interest Rate (%)	8.00	7.50	6.75	6.25	6.00

Source: focus-economics.com

Extract 6: Why are China and India growing so fast?

China and India demonstrate a common pattern of development different from that of the slowly growing West. Rapidly growing state (government) investment plays a significant role in China and India's economic expansion, while private investment is either growing very slowly or declining. In contrast, the slowly growing Western economies rely on private investment with no rapid growth of state investment. The facts of this global economic trend are also crucial for economic theory and analysis as advocates for free

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market believe “private investment is supposed to be “good” while state investment is supposed to be “bad” as state enterprises are inefficient. However, the facts show the exact opposite trend is occurring.

Based on the National Statistics Bureau data, the state-owned fixed-asset investment of China had grown by 23.5% from January to June 2016 over the same period in 2015, but private fixed-asset investment growth had decelerated to 2.8%. As for India, its state investment increase was 21% while private investment fell by 1.4%. In contrast, Western economies are experiencing very slow growth. The U.S. is the best performing major Western economy, yet its year-on-year growth of private investment is as low as that of China and India and has been steadily falling. But unlike China and India, the U.S. has not increased state investment to compensate for falling private investment.

The correlation between rapid growth of state investment and fast economic growth, as well as between reliance on private investment and low economic growth, is evident. However, to some people, it is rapid economic growth in India and China that is leading to more state investment, not the other way around, or low rates of investment in the U.S. because of its slower growth. This is not plausible since state investment is directly under government control and not subject to market forces. Both the Chinese and Indian government have made clear that they have deliberately taken the decision to increase state investment, in order to stimulate economic growth, while in the U.S. many are ideologically opposed to state investment.

Source: Prof John Ross, on Huffington Post website, 6 December 2017

Extract 7: Promoting strong and inclusive growth in India

India’s economy continues to grow at an impressive rate, with projected annual GDP growth of 7.5% in 2017-18. India will thus remain the fastest-growing G20 economy. Unprecedented growth in exports in services since the 1990s has made India a global leader in this sector. Inflows of foreign direct investment (FDI) grew at three times the annual world average rate in the last decade, reflecting the success of efforts to attract international investment and gradually loosen restrictions to foreign investment. India’s economic successes are being translated into increased well-being for its population. As GDP per capita has more than doubled in ten years, extreme poverty has declined substantially. Access to education has steadily improved, and life expectancy has risen.

Multiple opportunities present themselves for India, and the right mix of policies is needed to take advantage of them. India has made advances in integrating in global value chains and developing a competitive advantage in fields such as information and communication technology. Now is the time to secure continued progress by boosting competition and further lowering barriers to trade and investment. Looking to the future, it will be vital to fully tap into the potential offered by India´s young population. This means investing in the large numbers of young people entering the labour market. Likewise, the rapid pace of development must be matched with the upgrades to infrastructure necessary to support it.

Source: www.oecd.org/india, accessed 18 June 2018

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Extract 8: The growing importance of the technology economy

Technology has deeply affected the global economy and its usage has been linked to marketplace transformation, improved living standards and more robust international trade. Technological advances have significantly improved operations and lowered the cost of doing business. Currently, as an example, just a few technicians controlling robotic systems can operate an entire manufacturing plant, and innovative inventory systems are capable of supplying needed parts within a short time for assembly. In addition to that, e-commerce and online banking capabilities have also helped reduce the cost of doing business.

The recent World Development Report (WDR) 2016 Digital Dividends highlights many instances of how e-commerce is boosting the employment opportunities of those who may have been excluded from the global market place. According to the report, the Internet enables many small firms to participate in global trade, thus leading to more inclusion. The WDR notes that 'China's State Information Center estimates that the recent boom in the country's e-commerce sector has created 10 million jobs in online stores and related services, about 1.3 percent of the country's employment. New opportunities for entrepreneurship and self-employment are also growing rapidly in the digital economy.' By using e-commerce platforms, businesses no longer need to be big to access global markets.

Many researches from many respected companies, such as BCG, IMF and World Economic Forum show that whenever private companies cut back on technology investments aiming to shore up profits, the result is the opposite, as profits sink significantly, and, as a side effect, GDP also falls dramatically, then a chain reaction starts with the fall of labour productivity after a few years.

Source: Macro Antonio Cavallo, CIO.com, 21 December 2016 & The World Bank, 18 March 2016

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Questions

(a) **(i)** Describe the trend in the UK's general price level from 2013 to 2016. [2]

(ii) With reference to Extract 5, explain the change in the UK's general price level in 2017. [3]

(b) **(i)** State the monetary policy stance adopted by both UK and India. [1]

(ii) Explain the possible factors that influenced the level of interest rates set by these two countries from 2013 to 2017. [6]

(c) Comment on how changes in GDP per capita could have affected the well-being of the population in India and UK. [6]

(d) Using AD/AS analysis, explain the possible trade-off and its consequences when rapid pace of development in India is not matched with the necessary upgrades to its infrastructure (Extract 7). [6]

(e) Discuss whether technological advancement is key in reducing unemployment in large countries such as India and China. [9]

(f) 'Countries should rely more on state investment instead of private investment to promote sustained economic growth'. Discuss this view. [12]

[Total: 45]

- End of Paper -

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2018 Prelim H1 CSQ2: Economic Performance

Questions

(a)	**(i)**	**Describe the trend in the UK's general price level from 2013 to 2016.**	**[2]**
		From 2013 to 2016, GPL in UK has increased **[1]** at a decreasing rate **[1].** **Or** From 2013 to 2016, GPL in UK has increased [1], except in 2015, where there is no change in GPL [1]	
	(ii)	**With reference to Extract 5, explain the change in the UK's general price level in 2017.**	**[3]**
		With reference to Extract 5, the UK's pound has depreciated. Based on Extract 5, it was stated that the depreciation has resulted in an increase inflation. A depreciation of the pound will cause the price of imports of finished products and raw material into UK to increase in pound. **[1]** As a result, this increases the cost of production for domestic UK firms in general causing a leftward shift in the economy's SRAS curve. **[1]** Holding all other factors constant, this will cause UK's GPL to increase **[1]**, contributing to a faster rate of increase in GPL in 2017.	
(b)	**(i)**	**State the monetary policy stance adopted by both UK and India.**	**[1]**
		An expansionary monetary policy. **[1]**	
	(ii)	**Explain the possible factors that influenced the level of interest rates set by these two countries from 2013 to 2017.**	**[6]**
		The Central Bank of a country can use interest rate to influence the AD of the economy. It can lower interest rates to increase AD so as create employment and increase GDP. On the other hand, it can raise interest to contract AD to prevent demand-pull inflation. The possible factors that can influence the level of interest rates set are by the central bank/ government of the country: 1. Economic situation 2. Effectiveness of i/r policy 3. Ability to change i/r	

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with the **aim** to boost growth/control inflation/etc

(1) <u>Current economic situation with the aim to boost growth/etc</u>

Both UK and India aim to increase AD to boost growth.

UK has kept its interest rate at a low level of 0.5% since the global financial crisis in 2008. By keeping its i/r low or by lowering i/r, the central bank of a country seeks to keep cost of borrowing low in order to raise C & I to boost AD. In Extract 5, the uncertainly ahead due to Brexit, has also caused UK to further lower its i/r to 0.25% in 2016.

In 2017, UK raised it i/r back to 0.5% which is still considered a low rate to boost domestic demand and to prevent further depreciation of its currency.

India has also lowered its interest rates over time from 8% to 6%, to boost growth. Lowering of i/r in **India** seems to be have worked in raising its GDP per capita over time. Hence, India has continued to lower its i/r.

(2) <u>Effectiveness of the interest rate policy</u>
<u>Interest-elasticity of C & I</u>
Should economic outlook be bleak where households and firms are pessimistic about their jobs and profits respectively, central bank may need to cut interest rates further and keep it low to boost C & I.

(3) <u>Ability to change i/r</u>

There is also room for India to further cut its i/r as it started at a high of 8%. On the other hand, there is less room to further cut i/t for UK as it is at a low level of 0.5%.

Facing weak growth, an expansionary MP would be beneficial to UK. However, in 2016, it could not keep its i/r at a low level of 0.25% as when UK lowered its i/r, it caused its pound to further depreciate due to outflow of hot money which worsened its existing imported inflation.

Both **UK and India** can afford low level of i/r or falling i/r as their rates of inflation have in general fallen over time. That is, a

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		demand-pull inflation due to excessive increase in AD is not likely to happen. **[At least 2 factors affecting the decision of the government. Each factor can be awarded up to a max of 3m]**	
(c)	**Comment on how changes in GDP per capita could have affected the well-being of the population in India and UK.**		**[6]**
	Well-being refers to both material and non-material well-being. <u>Explain how changes in GDP per capita could have affected India's and UK's material well-being</u>. **[4]** <u>India</u> Rising GDP per capita in India as shown in Table 2, means that likely there will be more income enjoyed by an individual in India. With higher income, they can afford to enjoy more goods and services, hence leading to higher material well-being. In Extract 7, it was also stated that with rising GDP per capita, "extreme poverty has declined substantially" indicating an improvement in material well-being. <u>UK</u> Table 1 shows falling GDP per capita over time for UK. This means on average an individual in UK has lower purchasing power and enjoys less goods and services, hence possibility of lower material well-being over time. <u>Non-material well-being</u> In India, "access to education has steadily improved and life expectancy has risen' [Extract 7]. The increasing GDP per capita in India could have increased the population's ability to pursue education and also avail themselves of better sanitation and medical care improving their non-material well-being. Also with rising GDP, the government can also collect more tax revenue to spend on providing education, better sanitation and medical care. However, changes in GDP per capita is not a good indicator of the non-material well-being of the population. There are other factors that could affect the non-material well-being of the population but not captured by GDP per capita. For example, with rising GDP per capita, there could be increasing stress borne by the working population and/or increasing pollution due to increasing production activities when firms ignore the harm		

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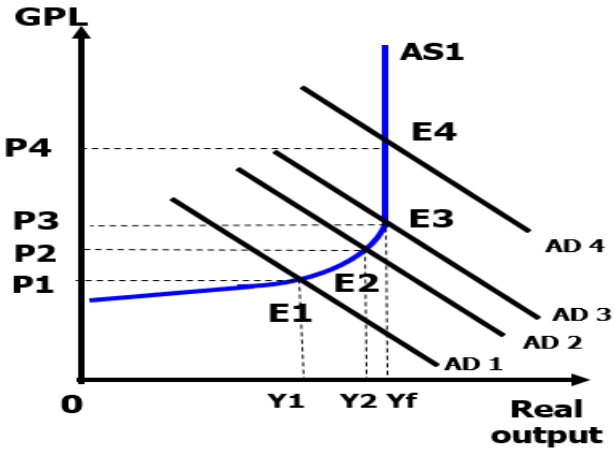
	imposed on the 3rd parties. In this case, non-material well-being would have worsened despite rising GDP per capita. <u>Other indicators needed to assess well-being a population</u> **[2]** Hence, to assess the well-being of the population of both UK and India, there is a need for other indicators such as Gini coefficient and pollution index. (Elaborate on one other indicator)	
(d)	**Using AD/AS analysis, explain the possible trade-off and its consequences when rapid pace of development in India is not matched with the necessary upgrades to its infrastructure (Extract 7).**	**[6]**
	1. Identify that the rapid pace of development is brought about by increase in AD **[1]** via increase in X, FDI. 2. Use AD/AS analysis to explain and illustrate how excessive increase in AD can lead to demand-pull inflation assuming no change in AS. Trade-off: stable prices **[3]** **Fig 1: DD-pull inflation**  Assume India economy is operating near full employment, where initial equilibrium at E1. Increase in X & FDI → ↑AD1 to AD2 • At P1, AD2> AS → shortage of real output occurs • Firms face ↓in inventories → ↑production to meet increased AD → hire more FOP i.e. workers => unN decreases while real output increases. • As less resources are available due to ↑ **competition for FOP** → firms need to offer higher factor prices to hire more FOP → ↑**GPL** as profit-maximising firms produce more output • New equilibrium @ E2 where total spending = total output → P1 rises to P2, Y1 increases to Y2	

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	However, as consumer confidence continues to improve→ further ↑Cd→ *AD* <u>continues to increase</u>→ AD2 rises to AD3 then to AD4 • **Persistent increase in AD** → creates a situation of **sustained excess demand** in the economy • → **Sustained** increase in GPL • → **Demand pull inflation** **Hence, when rapid pace of development in India is not matched with the necessary upgrades to its infrastructure =>** the persistent increase in AD cannot be met with increasing AS leading to dd-pull inflation. 3. Explain how inflation can lead to fall exports, I and C which can result in lower EG & SOL. **[2]** ➔ Inflation causes value of $ to fall. Households' real disposable income decreases, ceteris paribus => less able to enjoy g & s => lower SOL <u>Or</u> ➔ Inflation causes the country's exports to be less price-competitive. Assuming PEDx > 1 due to availability of substitutes => export revenue will fall. ➔ Severe inflation also affects investors' confidence as value of money falls and firms would cut down production & reduce investment when the rise in unit cop is greater than the increase in prices of final goods and services, resulting in a fall in potential profit per unit. ➔ Fall in X & I => fall in AD => fall in real output => decrease EG and lower SOL	
(e)	**Discuss whether technological advancement is key in reducing unemployment in large countries such as India and China.**	[9]
	1. <u>Define unemployment and state the different types/causes of unemployment.</u> • 2 main types/causes of unemployment are (i) cyclical and (ii) structural 2. <u>Explain how technological advancement can help to reduce unemployment in India and China</u>. • Extract 7: India for example is a country that has develop a competitive advantage in ICT. Extract 8: Technological advancement has also helped to lower unit cop and this can	

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increase firms' potential profits per unit and encourage them to step up investment on high-tech equipment. The increase in I => increase AD. To meet increasing demand, firms step up production to increase output => increase demand for fops including labour => demand-deficit unemployment can be reduced.

- Alternative approach: Extract 8: Technological advancement helped to lower unit cop leading to higher potential profit per unit of output. Producers are willing and able to produce more output at each possible price. This can lead to a rightward shift of the economy's SRAC curve. Productive capacity of the economy and real output increases. As real output increases, the demand for fops including labour can increase. Should demand for labour increase, unemployment of labour decreases.
- Extract 8: E-commerce has created millions of jobs in China. Through e-commerce, there are "new opportunities for entrepreneurship and self-employment. Hence workers in China who could be structurally unemployed due to factor immobility can now "access global markets". The rise of E-commerce can also reduce demand-deficit unemployment as e-commerce also encourages spending by households due to easy access to more goods and services leading to a rise in AD.

3. Explain that technological advancement may not be adequate in reducing unemployment in India and China.
   - Other causes of unemployment. Structural unemployment can occur as workers are displaced by technology and they lack the relevant skills to move into sunrise industries. In Extract 8, technological advances needing fewer workers, for example "just a few technicians controlling robotic systems can operate an entire manufacturing plant. Workers can be displaced.
   - Need to be complemented with relevant polices. It is also important that people are equipped with the necessary skills to move into new job opportunities that are created via technological advances. In Extract 7, it indicated the importance of "investing in the large number of young people entering the labour market". Equipping them with the relevant skills to prevent structural unemployment is also critical.
   - AD needs to increase sufficiently. Besides encouraging investment in technology, the government has to undertake measures to increase other components of AD such as to further encourage investment in fixed assets such as building of factories and plants and also measures to boost exports.

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4. Conclusion
   - Technology economy has grown in importance over the years and countries will need to ride on this technological wave to increase EG and reduce unemployment. However, to fully capitalize on it, the government has to undertake measures to equip their workers with the relevant skills to enjoy the new opportunities that it offers. In addition, the government has to adopt policies to increase the other components of AD too given the large population that the country needs to create employment for.
   - OR stand based on the root cause(s) of unemployment in the country.

Level	Descriptor	Marks
L2	A well-balanced analytical answer. Explanation is well developed.	4-6
L1	A one-sided answer OR takes a descriptive approach covering both sides.	1-3
A **further 3 marks available for evaluation and a reasoned conclusion** with clear criterion such as consideration of the need to be complemented by other measures to overcome its inadequacy &/or limitations.		

(f) **'Countries should rely more on state investment instead of private investment to promote sustained economic growth'. Discuss this view.** **[12]**

1. **Introduction**

   A country can depend on state or private fixed-asset investment to generate economic growth. Some countries may rely more on state I to promote sustained growth while other countries may rely more on private I as both types of investment have their merits and demerits.

2. **Explain how investment can lead to increase in actual EG in the SR and potential EG in the LR. Hence, the possibility of sustained growth at stable prices.**

   The increase in state & private fixed-asset investment causes a rise in AD from AD1 to AD2 as shown in Figure 1 below. At the original GPL Po, there is an excess demand in the economy resulting in firms' inventories depleting. This signals to firms to step up their

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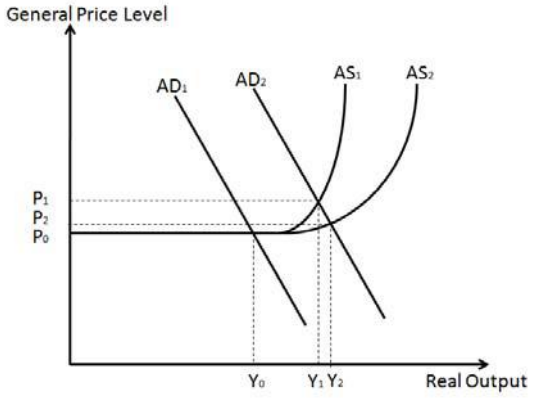
production. To produce more output, firms increase their demand for fops including that of labour. Firms bid up factor prices when fops become limited in supply. The rising factor prices translate into higher prices of goods and services in general as shown by an increase in GPL from Po to P1 while real output increase from Yo to Y1.

Figure 1:



In the long run, rising state and pte investment involving expenditure on new and better factories, plant and machineries can lead to an increase in the net capital stock of the country. This leads to an increase in the productive capacity of the economy. That is, it increases the country's ability to produce more g & s. This can be illustrated by a rightward shift of the AS curve. The shift in AS from AS1 to AS2 leads to a fall in the GPL and a further increase in the real output of the country. The increase in AS helps to moderate the increase in GPL, bringing about **non-inflationary growth.** Sustained EG can be achieved.

3. **Merits of state I /Demerits of private I**
   - When left to the free market, private I may not be forthcoming to achieve sustained growth. For example, Extract 5: Poor business outlook leads to low business investment => need government to step in to boost AD to achieve actual and potential growth.
   - Aim of government: to achieve macro goals. Extract 6: deliberate action by the government of China and India to undertake investment to boost AD to generate growth. Table 2, higher GDP per capita for India.
   - Increase in government spending on infrastructural development can also increase AS in the LR

   => increase in AD and AS can result in sustained EG

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- Aim of government: is also to achieve micro goals. => can minimise deadweight losses that could arise from negative externalities arising from private firms' decision-making.

4. **Demerits of state I / Merits of private I**
   - Extract 6: inefficient state enterprises. Inefficiency is likely to arise due to lack of profit-motive and imperfect information where the government-owned firms may not adopt the least cost method of production. Any losses made by the state-owned firms could be readily absorbed by the government.

     On the other hand, private investors seek to maximise their profits and will seek out least cost method of production. In order to compete with other firms.

     Furthermore, Extract 8 indicates how private enterprises have rode on the advancement in technology to cut costs and increase profits. It also indicated that for GDP to grow, it is important that private companies should not cut back on technology investment. That is, their investment plays a critical role in not only generating profits for themselves but also increase in GDP of the country.

   - Government budget:
     - ➔ An increase in government spending can lead to a budget deficit. Should the budget deficit become large and persistent, leading to a large national debt as a % of the country's GDP, it can have adverse effect on investors' confidence causing a fall in private I
     - ➔ Should the government increase taxes to service its national debt, the high taxes on income can discourage work, savings and investment.
     - ➔ If state I is financed by borrowing from the public it can lead to crowding out effect i.e. i/r increases which can cause a fall in private I, offsetting the increase in AD due to increase in G

5. **Conclusion**
   - Leaving to private firms to undertake investment has it merits as they are more flexible and being profit-driven will undertake investment such as technological investment which increases profits, employment and growth for the country.
   - Large and bureaucratic state investment can lead to inefficiency and stifle private enterprise. Furthermore, unsuccessful state investment can be a strain on a government's budget.
   - However, in times of economic downturn, and/or when business outlook is poor, the government may have to step in to increase its investment spending to achieve actual and potential growth.

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Hence, in such situation, state I may play a greater role than private I to achieve sustained growth. This is assuming that the country is not suffering from a persistent and large budget deficit which the country faces problem in financing it.

Level	Descriptor	Marks
L3	An analytical answer that explains the merits/demerits of state investment vs that of private investment to achieve sustained EG.	6-9
L2	A one-sided answer explaining either the merits/demerits of state investment or that of private investment to achieve sustained EG. OR takes a descriptive approach covering both sides.	3-5
L1	A vague, descriptive or list-like answer on the merits/demerits of state investment &/or private investment in achieving EG.	1-2
In addition, **up to a further 3 marks** for valid evaluative comment, making a reasoned judgement on whether state investment should play greater role than private investment in promoting sustained EG.		

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NATIONAL JUNIOR COLLEGE
SH2 Preliminary Examination for General Certificate of Education Advanced Level
Higher 1

ECONOMICS 8823/01

Paper 1

27 August 2018
3 hours

Additional Materials: Answer Paper, 2 Case Study Cover Pages

READ THESE INSTRUCTIONS FIRST

Write your student registration 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, glue or correction fluid.
DO **NOT** WRITE IN ANY OF THE MARGINS.

Answer **all** questions.

Start each question on a **new** piece of paper.

At the end of the examination, fasten all your work securely together with the cover pages given **[one cover page for each question].**

Fill in the necessary information on the cover pages.

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

This document consists of **8** printed pages.

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Answer **all** questions.

Question 1: The Energy Market

Extract 1: US electricity industry's use of coal fell to historic low in 2015

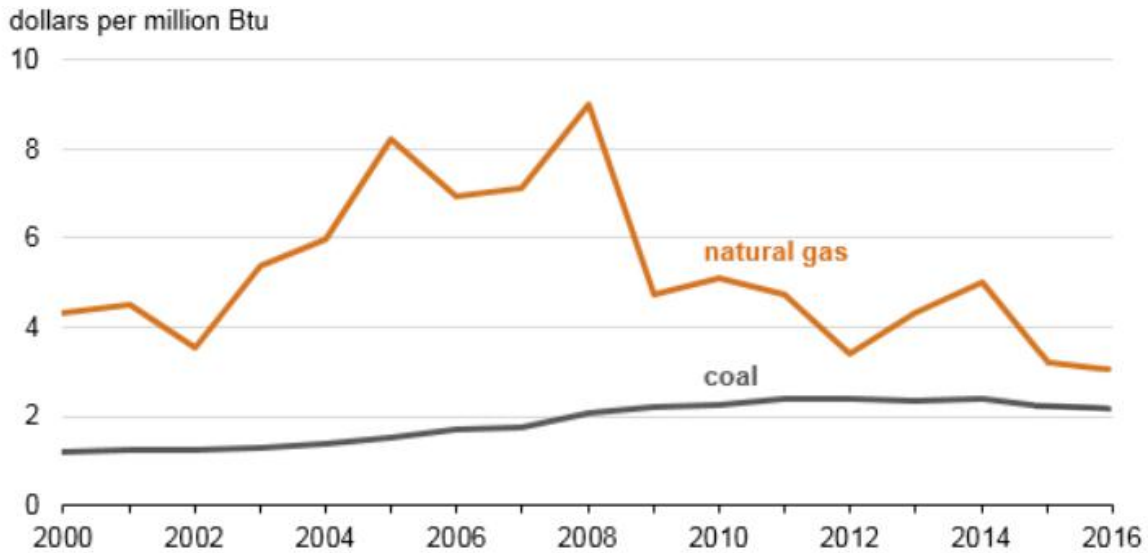
America's use of coal for electricity dropped to its lowest point (just 34% of US electricity generation) in the historical record in 2015. Prices crashed, thousands of miners were laid off and big coalmining companies went bankrupt.

The biggest threat to coal last year remained cheap natural gas. There was also a spike in new wind and solar power. By the end of last year, wind and solar accounted for 5.4% of the energy mix, up slightly from 2014.

Some power companies opted to shut down old, coal-fired power plants, in advance of the clean power plant rules. These shutdowns represented about 5% of the entire fleet.

Source: *The Guardian*, 4 February 2016

Figure 1: Cost of coal and natural gas for electric generating plants in the US (2000 -2016)



Source: *EIA*

Extract 2: Are energy regulations hurting economic growth?

Energy is essential for economic development. Increasing its production by any means will boost the economy, and limiting it in any way, as through emission controls will hurt it. This is however wrong. Thanks to decades of innovation, smart regulation, and technology investment, the nation can grow and decarbonise at once. The key is to accelerate the move to low-carbon technology by strengthening not eliminating the rules and technology investments that are driving it.

Far from being a prohibitive drag on economic growth, decarbonisation, or making the way that we get energy less dependent on burning fossil fuels that release carbon emissions, has gone hand-in-hand with output growth in most of the United States, according to research by the Brookings Institution. From 2000 to 2015, US Gross Domestic Product grew by 30% though emissions declined by 10%.

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The reduction in emissions has more to do with innovation-driven technology change, market forces, and industry restructuring. A recent Energy Information Administration analysis concludes that more than two-thirds of the country's and individual states' emissions reductions between 2005 and 2015 were due to fuel-use changes in the power sector - changes that reflect decades of government research and commercialization focus on low-carbon technologies.

Most notably, the nation's recent 'decoupling' owes heavily to the advent of cheap natural gas, as well as to the plummeting prices of renewables. Innovation policies have expanded low-carbon energy options, pushed wholesale electricity prices to record lows, and accelerated the retirement of America's aging coal plants. The Brookings analysis shows that coal plants' share of state electricity generation declined in more than 43 states, thanks to technology change.

All of this makes obvious the best way forward. The government should increase low-carbon research and development and accelerate the development of new technologies that can allow further growth. For example, new grid scale energy storage technologies could enable intermittent renewable energy sources like wind and solar to take a greater share in the power generation mix by delivering their electricity to the grid even when the sun is not shining and the wind is not blowing. An era of abundant and inexpensive clean energy awaits.

Source: *The Washington Post*, 21 December 2016

Extract 3: British doctors and health professionals call for rapid coal phase-out

Air pollution from coal plants causes many serious health conditions including stroke, coronary heart disease and lung cancer. It disproportionally affects children and kills more people than road accidents. In the UK, burning coal is linked to 1,600 premature deaths, 68,000 additional days of medication, 363,266 working days lost and more than 1 million incidents of lower respiratory symptoms. The monetary cost is as much as £3.1bn each year in human health impacts.

Groups representing Britain's 600,000 doctors and health professionals say it is 'imperative' to phase out coal rapidly to improve health and reduce National Health Service costs.

Source: *The Guardian*, 19 October 2016

Extract 4: UK-wide carbon tax would have 'little impact' on consumers

A 'modest' uniform carbon tax of £20 a tonne would have a negligible impact on consumer prices (increase by up to just 0.9%) according to a new study that attempts to make the case for wider adoption of carbon pricing policies.

However, the true cost impact on consumers is likely to be even lower, given the manner in which the carbon tax would incentivise green behaviour change, drive business innovation, and provide the Treasury with revenues that it could recycle back into the economy.

Opponents of carbon taxes argue they would impose costs on consumers and undermine the competitiveness of carbon intensive industries such as the Big Six electricity generators (British Gas, EDF Energy, E.ON, Npower, Scottish Power, and SSE). Last year the government moved to ease these concerns, exempting a raft of energy intensive industries such as steel and concrete manufacturing from existing carbon taxes and 'green levies'.

Source: *The Guardian*, 11 January 2016

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Extract 5: Ways to reduce the usage of energy

Traditional vehicles and energy sources will continue to hold a competitive edge against greener alternatives due to the vast amounts of subsidies they receive. Though subsidies are also provided to electric vehicles, they aren't equal to the applied subsidies of gasoline vehicles. This weakens the economic forces in transition to sustainable transport and energy. Educating the public on climate issues will be essential.

Another way is by tradable permits used by some European countries. The Emissions Trading Scheme's 'cap and trade' scheme creates a limited emissions market, within which 11,000 power stations and industrial plants can buy or sell allowances. It is lauded by supporters for a market-based approach that rewards greener firms with tradable credits, while encouraging dirtier firms to clean up their act, or offset their emissions by paying for accredited emissions cuts elsewhere.

Critics have raised questions about the veracity of some of these schemes, the over-allocation of free allowances to heavy polluters, and the extent to which current prices can help fuel switching.

The system does have a mechanism to gradually reduce the number of carbon credits available - and so raise prices but the note says that this will not be enough to cut emissions to at least 80% of 1990 levels by 2050, as the European Union has promised.

Source: *The Guardian*, 5 May and 29 Feb 2016

Questions

(a) Compare the cost of coal and natural gas for electric generating plants in the US between 2002 and 2016. [2]

(b) With reference to Extract 1 and using supply and demand analysis, explain the impact of cheap natural gas and the shutdown of coal-fired power plants on the market for coal. [6]

(c) With reference to Extract 2 and using a PPC diagram, explain and comment on the view that decarbonisation has gone hand-in-hand with economic growth. [8]

(d) **(i)** Explain **two** factors that a government should consider in making a rational decision to subsidise electric vehicles. [4]

(ii) Explain **one** possible unintended consequence of subsidising electric vehicles. [2]

(e) Extract 4 suggests that a 'modest' uniform carbon tax of £20 a tonne would have a negligible impact on consumer prices. Explain this claim, and comment on whether it is valid. [7]

(f) **(i)** Explain how 'the burning of coal' results in market failure. [4]

(ii) Using Extract 5, discuss the view that the implementation of tradable permits is the best way to solve the market failure arising from 'the burning of coal'. [12]

[Total: 45]

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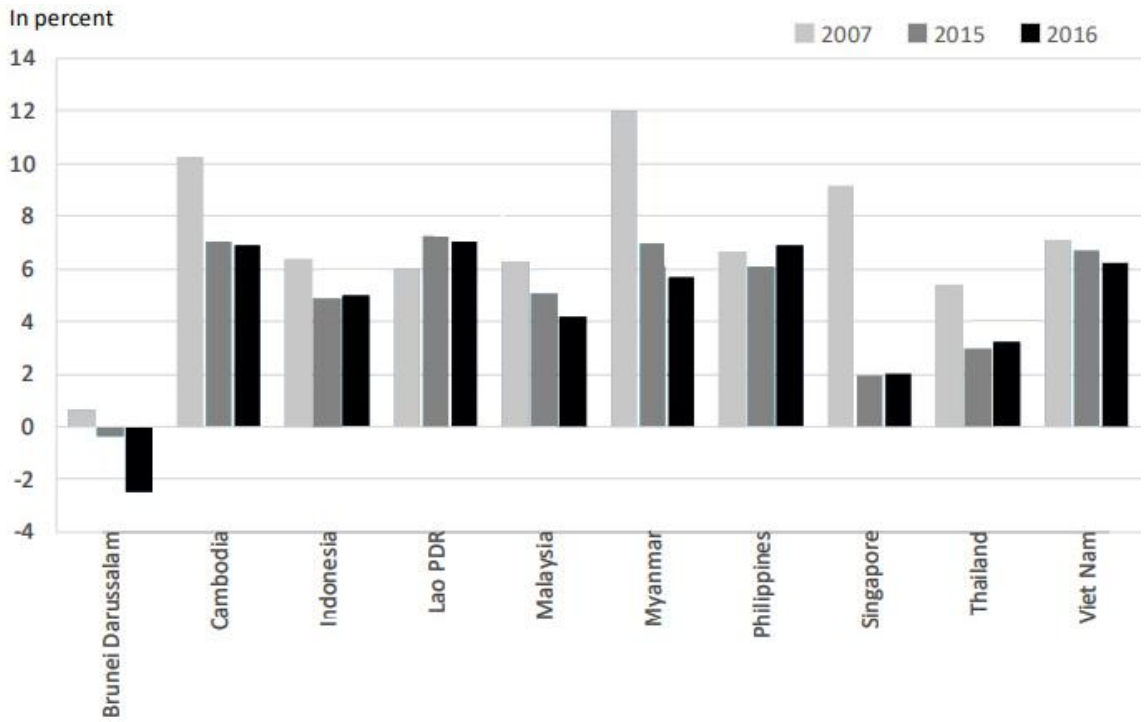
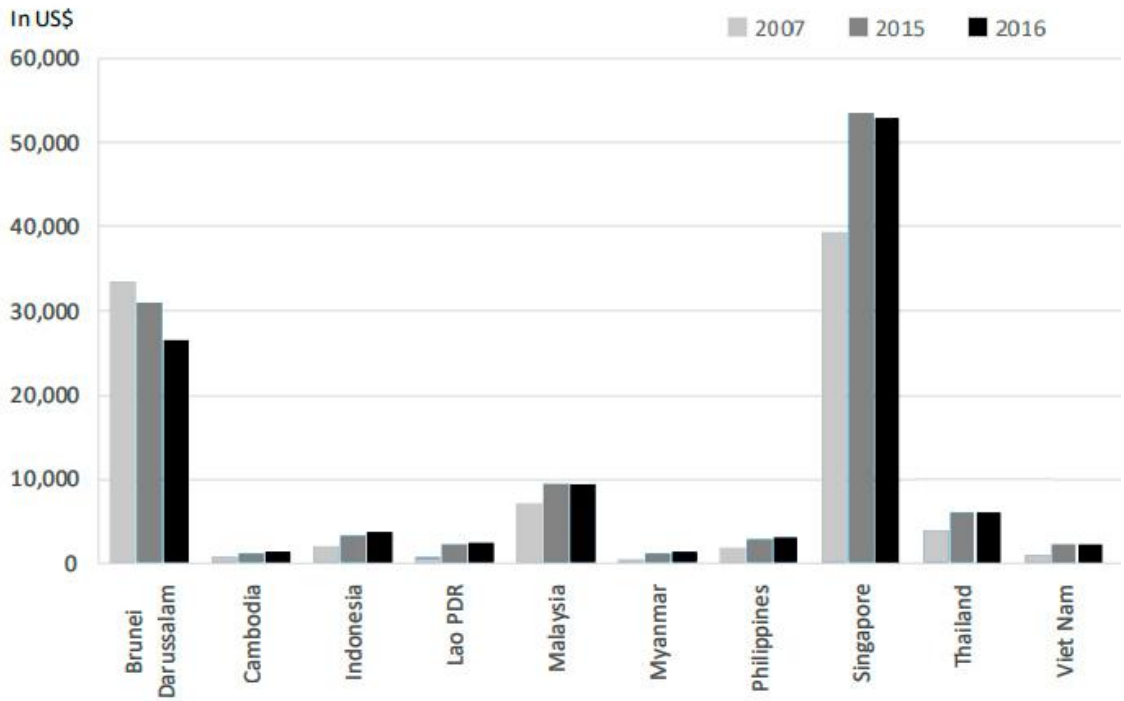
Question 2: Brexit and impact on ASEAN

Figure 2: Annual GDP Growth



Source: ASEAN Statistical Leaflet, 2017

Figure 3: GDP per capita (at current price)



Source: ASEAN Statistical Leaflet, 2017

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Table 1: Selected ASEAN Member States: Key Socio-Economic Indicators

	Inflation Rate (%)	Unemploy-ment Rate (%)	Adult Literacy rate (%)	Access to safe drinking water (%)	Infant mortality rate (per 1000 live births)	Life expectancy (years)
Myanmar	5.9	4.0	89.6	80.0	39.0	69.4
Singapore	-0.5	3.0	97.0	100.0	1.7	82.9
Thailand	0.2	1.0	96.1	97.0	6.2	74.3
Viet Nam	2.7	2.1	95.0	93.0	14.7	73.4

Note: All data refer to 2016

Source: ASEAN Statistical Leaflet, 2017

Extract 6: What Brexit Means for ASEAN

The immediate impact of Brexit is a significant weakening of the pound and euro against ASEAN currencies as markets respond to anxiety within the Eurozone. The flight to US dollar-denominated assets has prompted an appreciation of the dollar against ASEAN currencies. With their weaker purchasing power, British and Eurozone consumers will reduce their demand for exports from their main trading partners in ASEAN, including Malaysia, Singapore, Thailand, and Vietnam, and to a lesser extent Indonesia and the Philippines. Conversely, ASEAN consumers will benefit from discounted Eurozone goods, including services in high-demand sectors such as education. ASEAN countries battling economic slowdowns as a result of political uncertainty such as Malaysia are well positioned to benefit as US demand for imports will strengthen on the back of a stronger dollar.

Source: *Centre for Strategic and International Studies (CSIS),* June 28, 2016

Extract 7: How are the ASEAN economies affected.

The United Kingdom became the first country in history to exit the European Union (EU), sending markets not only in Europe but around the globe into frenzy. The EU being ASEAN´s second biggest trading partner, invariably, the Southeast Asian economies are set to be affected - both negatively and positively. Singapore and Vietnam are most affected.

In the case of Singapore, the EU is the city state´s primary trading partner for services exports, with the UK being Singapore´s top country market in the EU. More than 41% of Singapore´s total services exports to the EU were destined to the UK in 2014. Main branches to suffer from a likely economic downturn in the UK include business process outsourcing, IT services and professional service exports. However, Singapore, known for its outstanding financial services industry, could also benefit as London´s finance businesses and investors look for a steadier environment amidst the turmoil.

For Vietnam, the UK constitutes its second biggest export market in the EU after Germany, importing primarily Vietnamese agricultural and processed food as well as mining products. While Vietnam might initially suffer negative push-back from a slowing UK market, the long-term picture is a much different one. As of now Vietnam is the only ASEAN country, besides Singapore, to have signed a Free Trade Agreement with the EU, with the agreements' implementation having the potential to outweigh European investors' cost disadvantages caused by a weaker Euro. Vietnam will offer European

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low-cost investment opportunities. As European and UK consumers are challenged by lower purchasing power, producers will increasingly look for both cheaper sourcing and production locations. With its abundant labour force, good investment climate and strategic location, Vietnam is the number one contender.

Source: *BDG Asia*, July 04, 2016

Extract 8: Labour Market and Inflation in Singapore

Overall labour demand has weakened, and, in the near term, hiring will remain weighed down by subdued growth and ongoing restructuring in some industries. As job vacancies contracted and unemployment rose, a shortfall in job openings to job seekers arose for the first time since 2012, pointing to emerging slack in the labour market. At the same time, job mismatches appear to have risen especially among resident PMETs (Professionals, Managers, Executives and Technicians). In spite of the relatively strong growth in unit labour costs, broader business cost pressures are being dampened by excess capacity in other factor markets. The generally subdued growth environment will also continue to moderate the extent of consumer price increases.

In October 2016, Monetary Authority of Singapore (MAS) kept the slope of the Singapore dollar nominal effective exchange rate (S$NEER) policy band at 0% in view of the subdued macroeconomic outlook. Growth had weakened and was not expected to pick up significantly, while MAS Core Inflation was likely to rise only gradually in 2017 and average slightly below 2% in the medium term. MAS assessed that it would be necessary to adopt a neutral policy stance for an extended period to facilitate the closing of the negative output gap which is the amount by which the actual output of an economy falls short of its potential output and ensure medium-term price stability.

On the fiscal front, Budget 2016 provided targeted relief measures for households and firms affected by the cyclical downturn and economic restructuring. The Budget built on the themes of previous Budgets, namely, facilitating economic restructuring and building a caring and inclusive society. In this vein, specific schemes were introduced to advance the process of economic restructuring, by helping firms and industries retool, as well as to minimise structural unemployment among workers. The Budget also provided support for the economically vulnerable as well as measures to ensure inter-generational social mobility.

Examples of these support include a

- one-off transfer to help households - up $200 GST Voucher for eligible recipients costing government $280 million
- 1 to 3 months of Service Conservancy charges rebate for eligible households costing government $86 million
- corporate income tax rebate - 50% rebate capped at $25,000
- special employment credit - employers hiring Singapore workers aged 55 and above and earning up to $4000 will receive a wage-offset of between 3% to 8%, tiered by age.
- SME (Small Medium Enterprise) Working Capital Loan Assistance scheme - loans up to $300,000 per company to help them grow their businesses. This could catalyse more than $2 billion worth of loans over this period.

Overall, the more accommodative monetary policy (in the case of Singapore, the focus is on the exchange rate) setting together with the supportive fiscal policy stance, constitute an appropriate and complementary macroeconomic mix to ensure medium-term price stability and sustainable growth. This is assessed to be appropriate given the emergence of some slack in the economy and a relatively muted inflation outlook.

Source: *Macroeconomic Review*, October 2016

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Questions

(a) Using information in Figure 2 and Table 1, compare the economic performance of Myanmar and Thailand in 2016. [3]

(b) With reference to the Figure 3 and Table 1,

(i) Explain the view that standard of living in Myanmar is lower than that of Thailand. [3]

(ii) Comment on the validity of this statement. [4]

(c) Explain the likely impact of 'the significant weakening of the pound and euro against ASEAN currencies' on the net exports of the ASEAN economies. [5]

(d) With reference to Extract 7 and using AD/AS diagrams, explain the different impact on Singapore and Vietnam when 'the United Kingdom became the first country in history to exit the European Union (EU)'. [8]

(e) With reference to Extract 8, assess the extent to which 'a neutral policy stance' adopted by Monetary Authority of Singapore is appropriate to boost economic growth for Singapore. [8]

(f) **(i)** Identify **two** possible causes of unemployment in Singapore. [2]

(ii) Discuss how 'a supportive fiscal policy' might tackle unemployment in Singapore. [12]

[Total: 45]

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Examiners' Report for 2018 H1 Economics Prelims

Case Study 1 Suggested Answers:

<u>Suggested Answers</u>

Questions

(a)		Compare the cost of coal and natural gas for electric generating plants in the US between 2002 and 2016.	[2]
		▪ Cost of natural gas <u>rose</u> from 2002 to 2008, and <u>fell thereafter</u> from 2009 to 2016 while cost of coal <u>rose steadily</u> from 2002 to 2016, [1] ▪ Cost of natural gas was <u>higher than</u> cost of coal throughout the entire period from 2002 to 2016. [1]	
(b)		With reference to Extract 1, and using supply and demand analysis, explain the impact of cheap natural gas and the shutdown of coal-fired power plants on the market for coal.	[6]
		➢ *Explain 2 factors causing demand to change [2]* ▪ Cheap natural gas may incentivise consumers to switch from coal to natural gas as they are <u>substitutes in consumption</u>. Demand for coal falls, ceteris paribus. ▪ Shutdown of coal-fired plants result in a <u>fall in derived demand</u> for coal as coal is a key factor of production used to fire the power plants, ceteris paribus. ▪ Overall, demand for coal falls ➢ *Price adjustment [1]* ➢ *Explain impact on equilibrium price using PES concept [3] to explain that "prices crashed" (Extract 1)*	
(c)		With reference to Extract 2 and using a PPC diagram, explain and comment on the view that decarbonisation has gone hand-in-hand with economic growth.	[8]
		Introduction ▪ Define economic growth; SR growth (actual growth) vs LR growth (potential growth). Sustainable growth. ▪ Define PPC: The Production Possibility Curve (PPC) shows the maximum attainable combinations of two goods and services that can be produced in an economy, when all the available resources are used fully and efficiently, at a given state of technology. *Explanation [4] how "decarbonisation has gone hand-in-hand with economic growth using the PPC.* ▪ "the government's spending on low-carbon research and development (R&D) of new technologies". - shift of PPC (potential growth) ▪ more production of capital goods due to the increase expenditure on R&D into new technologies will have impact on actual growth. ▪ Sustainable growth is also achieved as traditional energy sources like coal is a finite resource whereas solar and wind energy is infinite. ▪ Note: Good reference must be made to the diagram below and evidence should be provided from the case materials when explaining the above points.	

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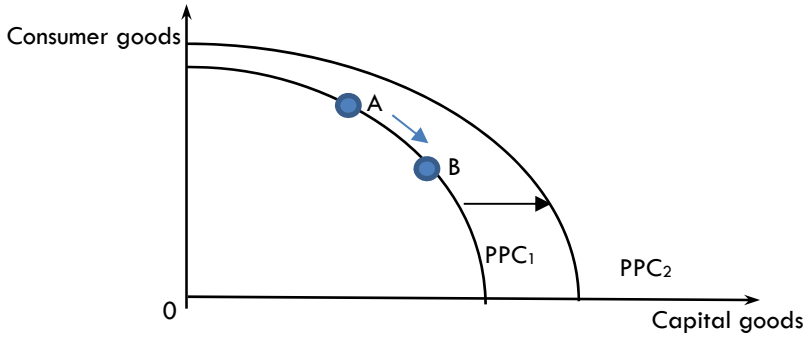

Fig 1: Effects of decarbonisation on economic growth

Comment [4] – any 2 points well-explained

- Dependent on government's willingness and ability (budget) to engage in R&D for renewable energy.
- Figure 1, the price of coal is still below that of natural gas (or if the price of coal falls due to fall in demand and becomes even cheaper), producers might be tempted to burn coal for energy.
- If prices of natural gas and renewables rise in the future due to increase in demand, cost of production for many goods and services in the economy will rise, resulting in higher GPL and reducing real GDP growth.

(d)	(i)	Explain **two** factors that a government should consider in making a rational decision to subsidise electric vehicles.	[4]
		A government would have to weigh the costs and benefits while making its decision whether to subsidise electric vehicles. The <u>benefits have to outweigh the costs</u> for the government to decide to subsidise electric vehicles. ▪ Benefits [2]: Reduction in MEC from the reduction in usage of traditional vehicles and energy, more sustainable growth ▪ Costs [2]: Cost of financing the subsidy, opportunity cost	
	(ii)	Explain **one** possible unintended consequence of subsidising electric vehicles.	[2]
		Explain the following. ▪ <u>Potential incurrence of marginal external cost</u> resulting from the usage of electric vehicles. ▪ <u>Low take-up rate</u> due to lack of information. Marking tip: any other reasonable answer will be accepted. Increase in consumption is NOT accepted.	
(e)		Extract 4 suggests that a 'modest' uniform carbon tax of £20 a tonne would have a negligible impact on consumer prices. Explain this claim, and comment on whether it is valid.	[7]
		Explain this claim [4] Imposition of carbon tax (a tax on fossil fuels) will <u>increase cost of production</u> for firms who burn coal in their production (generation of electricity) such as the Big Six electricity generators. <u>Supply of goods and services will fall</u>, ceteris paribus. <u>Prices will increase</u>. But it will be negligible (0.9%) as suggested in Extract 4. [1]	

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		This is because the carbon tax which increases cost of production and thus reduces profit margins would incentivise the firms to switch to other relatively cheaper forms of energy in their production. [1] To pay less carbon tax, firms would have to reduce their usage of fossil fuels and this may drive business innovation. Cost of production may reduce and thus price may not rise by much. [1] If the government uses the revenues that they collect from the carbon tax to subsidise electricity or merit goods, these goods would be more affordable to consumers. [1] *Comment [3]* ▪ The extent of the increase in price depends on the relative values of the price elasticity of demand and price elasticity of supply of different goods and services. (explain with examples) ▪ Thus, producers may pass on the carbon tax to consumers in some cases. Hence, the claim that carbon tax has a negligible impact on consumer prices may not be valid. (Note: 3 marks can be awarded for 1 point well-explained. Other reasonable points will be accepted.)	
(f)	(i)	Explain how 'the burning of coal' results in market failure.	[4]
		▪ The burning of coal generates negative externalities such as "serious health conditions, 1,600 premature deaths, 68,000 additional days of medication, 363,266 working days lost and more than 1 million incidents of lower respiratory symptoms" to 3rd parties. The marginal external cost is "as much as £3.1bn each year in human health impacts". [1] ▪ Due to the presence of MEC, there is a divergence between the marginal private cost (MPC) and the marginal social cost (MSC), where MSC=MPC+MEC. [1] Assuming that the external benefit in the private exchange of the burning of coal is negligible, then MSB=MPB+MEB and MEB=0; MPB=MSB. ▪ Private producers will burn up to 0QP units of coal, where MPB=MPC. [1] ▪ However, the socially optimal level of coal would be where MSB=MSC at the level of 0QS units. ▪ The free market has resulted in an overproduction of coal by QSQP units. ▪ The additional cost to society of overproducing coal is greater than the additional benefit to society resulting in a welfare loss to society. [1]	
	(ii)	Using Extract 5, discuss the view that the implementation of tradable permits is the best way to solve the market failure arising from 'the burning of coal'.	[12]
		Explain how tradable permits works ▪ The system of tradable permits is a combination of command-and-control and market-based system of resolving externalities. Each firm (Extract 5: "11,000 power stations and industrial plants) is given a permit to produce a given level of pollution. 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. ▪ 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.	

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Limitations of tradable permits

- For heavy polluters, if the costs of the permits is lower than their abatement costs (costs of eliminating pollution), they would buy more permits to pollute.
- 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.
- It is also possible that one or two dominant firms may buy up permits in the market and refuse to trade them. This would then act like a barrier to entry for new firms and the permits could therefore contribute to non-competitive behaviour.

Explain how ONE other policy works

Extract 5: Subsidies to green vehicles

- Direct subsidies given to buyers of green vehicles will make green vehicles more affordable (lowers the price that buyers have to pay) and increase the quantity demanded, ceteris paribus. OR
- Indirect subsidies given to producers of green vehicles will lower the cost of production and increase the supply of green vehicles, ceteris paribus. This will lower the price of green vehicles.
- Price of green vehicles is relatively lower, hence consumers switch from traditional vehicles (or gasoline vehicles) to green vehicles as they are substitutes in consumption. Hence, demand for traditional/gasoline vehicles falls, ceteris paribus. Derived demand for gasoline/traditional energy falls, reducing the over-consumption of gasoline/traditional energy and reducing the welfare loss to society.

Limitations of other policy

- Extract 5 suggests that the subsidies given to green vehicles aren't equal to that of gasoline vehicles which received vast amount of subsidies. This suggests that price of gasoline vehicles might still be relatively cheaper as compared to green vehicles.

Explain how ONE other policy works

Extract 5: Educating the public on climate issues will be essential

Limitations of other policy

- must consider the duration needed for the effects of such measures to be felt, especially if the problem of external cost is a serious one that must be dealt with in the short run.

Evaluative Conclusion

- Whether tradable permits is the best way to solve the market failure in (f)(i) depends on

Mark Scheme

Level	Descriptors
Level 3 **7-9**	For an answer that demonstrates knowledge, understanding, application and analysis: ➢ EXCELLENT **breadth** that considers the following economic concepts in explaining multiple and balanced perspectives, viewpoints, relationships and factors. ALL points chosen should be of **relevance** and **significance** in answering the question. ➢ EXCELLENT **depth** in economic analysis that reflects the following in ALL explanations. ✓ ***Accurate*** *use of economic concepts,* ***clear*** *elaboration,*

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				*and **precise** use of economic terminologies, language and phrasing.* The answer should also be supported by: ➢ Well-labelled and well-referred to diagram(s) drawn with **precision** (where appropriate). ➢ **Relevant** examples and **accurate** use of facts. ➢ **Logical** structure.		
			Level 2 **4-6**	For an answer that demonstrates knowledge, understanding, application and analysis: ➢ At least GOOD **breadth** that considers the following economic concepts in explaining multiple and balanced perspectives, viewpoints, relationships and factors. ALL points chosen should be of **relevance** and **significance** in answering the question. ➢ At least GOOD **depth** in economic analysis that reflects the following in ALL explanations. ✓ **Accurate** use of economic concepts, **clear** elaboration, and **precise** use of economic terminologies, language and phrasing. The answer should also be supported by: ➢ Well-labelled and well-referred to diagram(s) drawn with **precision** (where appropriate). ➢ **Relevant** examples and **accurate** use of facts. ➢ **Logical** structure.		
			Level 1 **1 – 3**	For an answer that demonstrates knowledge but lacks understanding, application and analysis: ➢ 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. • *Only consider ONE policy* ➢ INSUFFICIENT **depth** in economic analysis that may reflect the following: ✓ Lack of accuracy in the use of economic concepts, lack of clarity in elaboration, and lack of precision in the use of economic terminologies, language and phrasing.		
			Level	**Descriptors**		
			E2 **3**	For an evaluation that contains ➢ A synthesis of earlier economic arguments to arrive at **relevant** judgements/decisions (i.e. answer the question). ➢ Evaluative comments supported by **accurate, logical** and **clear** analysis • Whether a policy is the best way depends on the effectiveness (whether it tackles the root cause), appropriateness of the policy • Combination or Mix of policies		
			E1 **1-2**	For an evaluation that contains • **Relevant** judgement(s)/decision(s) (i.e. answer the question) that may not follow from earlier economic arguments. • Comment (s) may lack **depth, clarity, and logic**.		

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Case Study 2 Suggested Answers:

(a)	Using information in Figure 2 and Table 1, compare the economic performance of Myanmar and Thailand in 2016.		[3]
	In 2016, • Myanmar enjoyed a higher rate of growth compared to Thailand. (1) • However, Myanmar suffered from higher rates of inflation (1) and unemployment (1) compared to Thailand.		
(b)	With reference to the Figure 3 and Table 1,		
	(i)	Explain the view that standard of living in Myanmar is lower than that of Thailand.	[3]
		• Standard of living (SOL) refers to the level of economic welfare and social well-being of an individual or household. It includes the quantitative and qualitative aspects of living. • GDP per capita (given in Figure 2) provides an indication of the material SOL (1) while the statistics (given in Table 1) on adult literacy, access to safe drinking water, infant mortality rate and life expectancy provide some indication on non-material SOL. (1) • All the above indicators have consistently supported the view that SOL in Myanmar is lower than that in Thailand. (1)	
	(ii)	Comment on the validity of this statement.	[4]
		• 2 marks for a comment on the measurement of GDP per capita measured in current prices and/or other limitations in the use of GDP per capita as a measure of material SOL. • Further 2 marks for another comment on the lack of exhaustive indicators on the material and/or non-material SOL. Any one of the following well explained could earn the full 2 marks.	
(c)	Explain the likely impact of 'the significant weakening of the pound and euro against ASEAN currencies' on the net exports of the ASEAN economies.		[5]

	• Export earnings for ASEAN economies is likely to fall. (1)
	  ➢ With the pound and euro weakening, the purchasing power of the British and Eurozone consumers also decreases. This will reduce their demand for exports from their main trading partners in ASEAN, including Malaysia, Singapore, Thailand and Vietnam. Hence export revenue of ASEAN economies decreases. (1)
	• Spending on imports by ASEAN economies is likely to increase. (1)
	  ➢ ASEAN consumers will benefit from the cheaper British and Eurozone goods, including services in high-demand sectors such as education. (1)
	• The net exports of ASEAN economies is like to fall overall as export revenue decreases and import expenditure increases. (1)		

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(d)	With reference to Extract 7, and using AD/AS diagrams, explain the different impact on Singapore and Vietnam when 'the United Kingdom became the first country in history to exit the European Union (EU)'.	[8]

Introduction:

- When 'the United Kingdom became the first country in history to exit the European Union (EU)', Singapore and Vietnam are set to be affected since the EU is ASEAN's second biggest trading partner.

Body:

- Impact on Singapore
  - UK is Singapore's top export market in the EU for services.
  - More than 41% of Singapore's total services exports to the EU were destined for the UK in 2014.
  - According to Extract 7, UK is likely to experience an economic downturn and the main branches to suffer from this will include business process outsourcing and IT services.
  - This is likely to cause the export services from Singapore to the UK to fall as income falls in the UK.
  - When export of services fall, Singapore net exports fall, followed by the fall in AD, ceteris paribus, as illustrated in Figure 1 below.

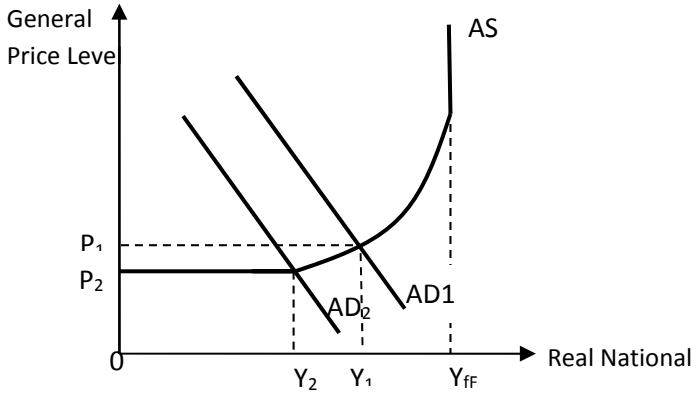

Figure 1: Impact of UK's exit from EU on Singapore

- Explain carefully the impact on general price level, employment and growth in Singapore using the diagram above.

- Impact on Vietnam
  - UK is Vietnam's second biggest export market in the EU.
  - UK imports primarily Vietnamese agricultural and processed food as well as mining products.
  - Similar to the case in Singapore, this is likely to cause the export of Vietnam to the UK to fall as income falls in the UK.
  - When exports of goods fall, Vietnam's net exports fall, followed by the fall in AD from AD_1 to AD_2, as illustrated in Figure 2 below.
  - In addition, according to Extract 7, Vietnam is the only ASEAN country beside Singapore to have signed a Free Trade Agreement (FTA) with the EU.
  - But unlike Singapore, Vietnam can offer the European investors a low-cost investment opportunities with its abundant labour force, good investment climate and strategic location.
  - With the FTA agreement in place, Vietnam's low-cost production outweighed any cost disadvantages caused by the weaker Euro to the European investors due to the exit of UK from the EU. Hence, it is likely that FDIs from the EU and US will

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increase in Vietnam.

- The increase in FDIs, will cause an increase in both the AD as well as LRAS, as the FDIs will consequently cause an increase in the productive capacity of the economy.
- Overall, AD in Vietnam is likely to increase since the fall in AD due to the fall in exports is likely to be less than proportionately to the increase in AD due to the increase in FDIs.
- This is because Vietnam exports largely agriculture and processed food as well as mining products which are basic necessities. Hence, the fall in income is unlikely to cause a large fall in demand for these goods, especially agricultural and process food items.
- On the other hand, the increase in FDIs may be substantial as the weakening of the Euros has sent the markets in Europe and around the world into a frenzy and Vietnam emerged the number one contender for a low-cost production location for these investors. (Extract 7)

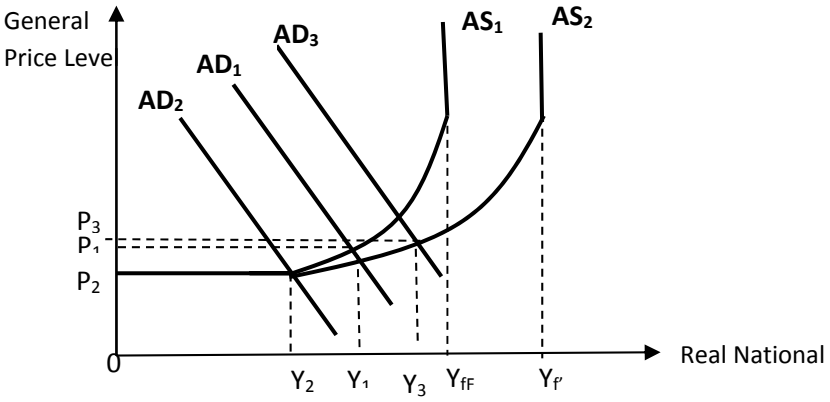

Figure 2: Impact of UK's exit from EU on Vietnam

- Explain carefully the impact on general price level, employment and growth in Vietnam using the diagram above.

Conclusion:
The above analysis using AD/AS diagrams helped to explain the different–impact on Singapore and Vietnam when UK exit the EU.

Mark Scheme:

Up to 2 marks for quality use of an AD/AS diagrams – correct labelling of axes, curves, equilibrium points, etc., and correct identification of the scenario – shift of AD and AS curves for Singapore and Vietnam – in the context of the different impact of the exit of UK from the EU.

Up to 3 further marks for explanation of the different impact on Singapore and Vietnam, as follows:

- ✓ Impact on Growth
- ✓ Impact on Employment
- ✓ Impact on General Price Level

(e) With reference to Extract 8, assess the extent to which "a neutral policy stance" adopted by Monetary Authority of Singapore is appropriate to boost economic growth for Singapore. [8]

Introduction:

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- According to Extract 8, Singapore faced “subdued growth environment”, meaning that there is a slowdown in economic growth.
- MAS assessed that it would be necessary to adopt a neutral policy stance for an extended period to facilitate the closing of the negative output gap.
- The central bank has kept the appreciation rate of the Singapore dollar's policy band at zero per cent since April 2016, in what the central bank describes as a "neutral" policy stance.
- To a large extent, this policy is appropriate to boost economic growth for Singapore.

Body 1:

<u>A “neutral policy stance” is appropriate to boost economic growth for Singapore.</u>

- Singapore has an open economy and her national income is most heavily dependent on the rest of the world. Total trade stands at almost thrice of GDP.
- The ‘neutral policy stance’ policy would be appropriate as it keeps Singapore’s exports more price competitive in the global market, especially in this weak global environment.
- Economic slowdown in countries such as US, UK, the EU and ASEAN and political uncertainty in Malaysia (Extract 1) has dampened demand for Singapore’s exports.
- The better price competitiveness with the zero appreciation will allow external demand to remain stable to boost growth for Singapore.
- There is no concern that it might affect the cost of living with the more expensive import of goods and services as Extract 8 states that the ‘broader business cost pressures are being dampened by excess capacity in other factor market and the generally subdued growth environment will continue to moderate the extent of consumer price increases.

Body 2:

<u>Limitations to the extent that ‘a “neutral policy stance” is appropriate to boost economic growth for Singapore.</u>

- Since a zero appreciation removes the modest and gradual appreciation path of the S$NEER policy band that was in place, it might not be enough to provide the price competitiveness to entice foreign consumers to continue with their demand for Singapore’s exports during a period of economic slowdown. Other factors might over-ride the impact of a zero-appreciation policy stance.
- Given the weakened global conditions, the income and purchasing power of consumers in these foreign markets would have fallen, resulting in a fall in their demand for imported goods, including those they buy from Singapore.

Conclusion:

- While the move by MAS to adjust the exchange rate policy to one with zero appreciation is appropriate to a large extent given the nature of Singapore’s economy, extract 3 also supported the idea that such a policy alone is not enough to boost growth for Singapore.

<u>Mark Scheme</u>

Level	***Descriptors***

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	Level 2 ***4-6***	*For an answer that demonstrates knowledge, understanding, application and analysis:* ➢ *EXCELLENT **breadth** that considers the following economic concepts in explaining multiple and balanced perspectives, viewpoints, relationships and factors. ALL points chosen should be of **relevance** and **significance** in answering the question.* ➢ *EXCELLENT **depth** in economic analysis that reflects the following in ALL explanations.* ✓ ***Accurate** use of economic concepts, **clear** elaboration, and **precise** use of economic terminologies, language and phrasing.* *The answer should also be supported by:* ➢ ***Relevant** examples and **accurate** use of facts.* ➢ ***Logical** structure.*	
	Level 1 ***1-3***	*For an answer that demonstrates knowledge, understanding, application and analysis:* ➢ *GOOD **breadth** that considers the following economic concepts in explaining multiple and balanced perspectives, viewpoints, relationships and factors. ALL points chosen should be of **relevance** and **significance** in answering the question. .* ➢ *GOOD **depth** in economic analysis that reflects the following in ALL explanations.* ✓ ***May lack accurate** use of economic concepts, **clear** elaboration, and **precise** use of economic terminologies, language and phrasing.* *The answer should also be supported by:* ➢ *Example(s).* ➢ ***Logical** structure.*	
	Level	***Descriptors***	
	E2 ***2***	*For an evaluation that contains* • *Evaluative comments supported by **accurate, logical** and **clear** analysis* • *The use of context to arrive at the conclusion is evident.*	
	E1 ***1***	*For an evaluation that contains* • ***Relevant** judgement(s)/decision(s) (i.e. answer the question) that may not follow from earlier economic arguments.* • *Comment (s) may lack **depth, clarity, and logic**.*	

(f)	**(i)**	Identify 2 possible causes of unemployment in Singapore.	[2]
		• Cyclical and structural unemployment (2)	

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	(ii)	Discuss how "a supportive fiscal policy" might tackle unemployment in Singapore.	[12]
		Introduction: • The "supportive fiscal policy" refers to the expansionary fiscal policy used to tackle cyclical and structural unemployment in Singapore, identified in part f(i) from Extract 8. Body 1: <u>How the supportive fiscal policy tackles cyclical unemployment in Singapore</u> • Cyclical unemployment is typically caused by a deficiency in effective demand. It arises when there is an economic recession. • This will result in a leftward shift of the AD curve which results in a fall in national income and output. Since fewer goods are being produced, fewer workers will be required to produce them. Employers lay off workers and cut back employment. There is thus an increase in cyclical unemployment. • Extract 8 states that Budget 2016 was targeted relief measures for households and firms affected by the cyclical downturn and examples were provided such as the one-off transfers of GST vouchers for eligible recipients, the 1 to 3 months of Service Conservancy charges rebate for eligible households, corporate income tax rebate of 50% capped at $25,000, the special employment credit and SME Working Capital Loan Assistant scheme. • Based on the examples provided in Extract 8, these measures aimed to provide some relief to firms and households, hence, increasing households' consumption (C) and firms' expenditure on goods and services (I). • With the increase in C and I, aggregate demand (AD) will increase, resulting in firms hiring more labour services. • Hence, tackling the problem of cyclical unemployment caused by the deficiency in aggregate demand. Evaluation: • The impact of the support fiscal policy on tackling cyclical unemployment might be limited as it serves more as relief measures to dampen the fall in AD, rather than a conscientious effort to increase AD. Body 2: <u>How the supportive fiscal policy tackles structural unemployment in Singapore</u> • Structural unemployment refers to unemployment that results from a mismatch of skills and jobs due to a change in the structure of the economy. • Even though the number of vacancies may be equal to the number of those unemployed, the unemployed workers may lack the skills needed for the jobs. There is thus a mismatch of skills and opportunities due to the structure of the economy changing. • Extract 8 suggested that the labour demand has weakened with the ongoing restructuring in some industries and highlighted in particular that job mismatches appear to have risen especially among resident PMETs affected by the economic restructuring. • The supportive fiscal policy, as outlined by Budget 2016, suggested some focus paid tackling the rising unemployment issue, that is, it is a fiscal policy with a supply side focus. • This special employment credit will help the lower the cost of hiring of workers, and hence the cost of production of firms, in particular for those firms hiring these PMETs aged 55 and above. • This will reduce the pace at which firms might retrench these PMETS during economic restructuring, combined with other challenges faced during the economic slowdown and hence, reduce the rate of the rise in unemployment	

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		seen among the resident PMETs, highlight in Extract 8. Evaluation: • The employment credit might help to lower the cost of hiring for firms. • However, this amount might not be sufficient to influence firm's decision to retrench worker. • Hence, there is limited impact in terms of tackling structural unemployment. Evaluative Conclusion: • While the "supportive fiscal policy" serves as a relief measure to firms and households during a period of economic slowdown, more might be required from the government to tackle both cyclical and structural unemployment in Singapore. • Government spending on goods and services must increase (increase G) more significantly to have a greater impact on AD. The increase in G and hence AD, will trigger the multiplier effect, on real national income and hence, tackle the problem of cyclical unemployment. • The employment credit is not sufficient to tackle structural unemployment effectively on a longer-term basis	

		Mark Scheme:	

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Level	Descriptors
Level 3 ***6-9***	*For an answer that demonstrates knowledge, understanding, application and analysis:* ➢ *EXCELLENT **breadth** that considers the following economic concepts in explaining multiple and balanced perspectives, viewpoints, relationships and factors. ALL points chosen should be of **relevance** and **significance** in answering the question.* ➢ *EXCELLENT **depth** in economic analysis that reflects the following in ALL explanations.* ✓ ***Accurate** use of economic concepts, **clear** elaboration, and **precise** use of economic terminologies, language and phrasing.* *The answer should also be supported by:* ➢ *Well-labelled and well-referred to diagram(s) drawn with **precision** (where appropriate).* ➢ ***Relevant** examples and **accurate** use of facts.* ➢ ***Logical** structure.*
Level 2 ***3-5***	*For an answer that demonstrates knowledge, understanding, application and analysis:* ➢ *GOOD **breadth** that considers the following economic concepts in explaining multiple and balanced perspectives, viewpoints, relationships and factors. ALL points chosen should be of **relevance** and **significance** in answering the question.* ➢ *GOOD **depth** in economic analysis that reflects the following in ALL explanations.* ➢ ***May lack accurate** use of economic concepts, **clear** elaboration, and **precise** use of economic terminologies, language and phrasing.* *The answer should also be supported by:* ➢ *Diagram(s) that may not be well-labelled, may not be well-referred to and may not be drawn with precision (where appropriate).* ➢ *Example(s).* ➢ ***Logical** structure.*
Level 1 ***1–2***	*For an answer that demonstrates knowledge but lacks understanding, application and analysis:* ➢ *INSUFFICIENT breadth that considers the following economic concept(s). Point(s) chosen may be of relevance but may not be of significance in answering the question.* ➢ *INSUFFICIENT **depth** in economic analysis that may reflect the following:* ✓ *Lack of accuracy in the use of economic concepts, lack of clarity in elaboration, and lack of precision in the use of economic terminologies, language and phrasing.*

Level	Descriptors
E2 ***2-3***	*For an evaluation that contains* • *A synthesis of earlier economic arguments to arrive at **relevant** judgements/decisions (i.e. answer the question).* • *Evaluative comments supported by **accurate, logical** and **clear** analysis* • *The use of context to arrive at the conclusion is evident.*
E1 ***1***	*For an evaluation that contains* • ***Relevant** judgement(s)/decision(s) (i.e. answer the question) that may not follow from earlier economic arguments.* • *Comment (s) may lack **depth, clarity, and logic**.*

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NANYANG JUNIOR COLLEGE

2018 JC2 Preliminary Exam

H1 ECONOMICS

Paper No: 8823/01

10th September 2018 Monday

Time : 1400 – 1700 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 writing paper.

Answer **all** questions. The number of marks is given in the brackets at the end of each question. Write your answers on the writing paper provided. If you use more than one sheet of paper, fasten the sheets together.

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

There are _8_ printed pages including this cover page

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Answer **all** questions

Question 1: The Sugar Battle

Table 1: Sugar in Selected Economies (1,000 Metric Tons)

Countries	Production		Consumption	
	2016/17	2017/18	2016/17	2017/18
China	9,300	10,250	15,600	15,700
India	22,200	32,445	25,500	26,500
European Union	18,313	21,150	18,700	18,800
Pakistan	6,825	7,425	5,100	5,400
United States	8,136	8,393	10,979	11,181
World total	173,980	191,813	170,773	174,125

Source: United States Department of Agriculture

Extract 1: Tax on sugary drinks will only be partly effective, claims study

Three economists at the Institute for Fiscal Studies have raised questions about the efficacy of the government's soft drinks industry levy. Drinks makers who do not cut sugar levels will have to pay 18p a litre on drinks that have more than 5g of sugar per 100ml and 24p a litre on those that have 8g or more of sugar per 100ml. According to the economists' modelling, young consumers would lower their sugar consumption by more than older individuals in response to a soda tax. The tax, therefore, succeeds in achieving relatively large reductions in sugar among one group," the study notes. However, its impact of sugar tax on population remains to be seen.

The findings have implications for Britain and beyond. A growing number of cities and countries have adopted taxes on sugary drinks to help combat sugar consumption, which is blamed for rising obesity levels. Where do we draw the line for taxing undesirable dietary choices? For example, should a salt tax be implemented given that the overall concern is on long-term human health? To what extent do matters of dietary choices require government intervention? Some people might say that when it comes to food choices, they should have complete freedom in making those choices as they are solely responsible for the health cost that they would incur. However, the cost goes beyond personal choices.

Source: Various

Extract 2: UK sugar industry licks lips over end of EU quotas

The European Union is abolishing its system of quotas for sugar from Sunday 1 October, in one of the biggest changes for British agriculture in recent years. The UK's 3,500 growers of sugar beet – a sweet root vegetable that looks like a turnip – and the country's sole refiner, British Sugar, expect the change to allow them to increase production by 50% annually.

It's an industry that supports nearly 10,000 jobs across the country, helping the UK to consume roughly two million tonnes of sugar a year. About 60% comes from home-grown beets, while another 15% comes from the EU and the remainder is from imported cane sugar. The sugar rush comes as the EU scraps limits on production for the first time since 1968. Britain had been limited to producing little more than one million tonnes a year, which has led to stockpiling following bumper harvests.

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British Sugar, a part of the Associated British Foods conglomerate, plans to immediately increase production to 1.4 million tonnes next year from 900,000 tonnes in 2017. But with the vote to leave the European Union, higher taxes on sugary drinks and a government push to wean consumers off unhealthy treats, the industry may face a sticky future. Producers will also be more exposed to the global sugar price as protections recede.

Consumers could benefit from falling prices**,** although not immediately, according to Callum Macpherson at the City bank Investec. “If prices are passed through to consumers, where you might see a noticeable effect, at some stage, is on the cost of buying a bag of sugar in the supermarket,” he said.

Across the EU, sugar production next year is now forecast at 20.1 million tonnes, about 20% more than this year’s crop. Imports are expected to fall to 1.5 million tonnes, while exports are forecast to double to 2.8 million tonnes. A government spokesperson said: “The removal of EU sugar beet quotas will enable British growers compete on a level playing field with other sugar producers around the world.”

Source: The Guardian, 29 September 2017

Extract 3: Beating diabetes starts with small steps, says PM Lee

Eat right, exercise more, get your health checked regularly and think twice about picking up that can of soft drink. These are Prime Minister Lee Hsien Loong's words of advice to Singaporeans who want to beat diabetes.

While diabetes is often a silent illness, its complications - which range from kidney failure to blindness and even impotency in men - can prove debilitating. Roughly 400,000 Singapore residents have diabetes. A significant proportion of them do not even know it.

Furthermore, total economic costs per working-age patient were estimated to be US$5,646, of which 42% were excess direct medical costs and 58% indirect productivity-related losses in 2010. Total cost is projected to rise to US$7,791 in 2050, with the share of indirect costs rising to 65%. By current projections, diabetes in Singapore represents a growing economic burden. Among the working-age population, the impact of productivity loss will become increasingly significant. Prevention efforts to reduce overall prevalence should also engage stakeholders outside the health sector who ultimately bear the indirect burden of disease. The Government alone cannot solve this problem, Mr Lee said. It is a matter of personal responsibility.

The first thing people should do is find out where they stand by going for regular medical check-ups. These do not have to be expensive. From next month, nearly two million Singaporeans can get a basic subsidised health screening for $5 or less under the enhanced Screen for Life programme. The chances are your doctor will advise you to eat healthy and exercise more as well, Mr Lee said.

A final target of Mr Lee's speech was soft drinks and sugar. These drinks contain refined sugar, which is bad for a person and can increase the risk of diabetes. This problem is especially tricky because drinking such sugary beverages can become an ingrained habit from a young age, he said. "Our children are most at risk because soft drinks are part of their lifestyle."

The Government plans to introduce measures to reduce the amount of sugar in all the soft drinks consumed in Singapore. "But ultimately, what to drink is a personal choice," Mr Lee said. "The best is to drink plain water."

Source: Various

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Questions

(a) (i) Why might the changes shown in Table 1 have led to a decrease in the world price of sugar? [2]

(ii) Given the information contained in Table 1, identify the country that has had the greatest impact on world prices. Justify your answer. [3]

(b) Using diagrams, explain what determines the extent of the change in the quantity of soft drinks consumed by the different types of consumers following the imposition of the sugar tax in UK. [4]

(c) Extract 2 refers to the effects of removing quota on sugar production. Using a supply and demand diagram, explain the effect on the market for sugar in UK of such quota removal. [3]

(d) Explain the determinants of a rational consumer's decision on whether to consume sugary drinks. [6]

(e) (i) Using Extract 3, explain why the Singapore government would want 'to reduce the amount of sugar in all the soft drinks consumed in Singapore'. [5]

(ii) Discuss whether the problem of increased incidence of diabetes in Singapore caused by the excessive consumption of sugary drinks can be better solved by education rather than indirect taxation. [10]

(f) Instead of discouraging the consumption of sugary drinks, there should be subsidies on healthy dietary choices. [12]

Discuss whether subsidies on healthy dietary choices promote the efficient working of the price mechanism.

[Total: 45 marks]

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Question 2: Lessons from Japan and United States

Table 2: 2016 Selected Economic Indicators

	GNI per capita (constant 2010 US$)	Government Gross Debt to GDP (%)	Unemployment Rate (% of total labour force)	Life expectancy at birth, total (years)
Japan	47,625.9	250.4	3.1	84
United States	52,707	105.8	4.9	79

Source: The World Bank and Trading Economics

Extract 4: Quantitative Easing Around the World

Central banks use quantitative easing (QE) to inject money into the financial system, hoping to boost business spending and stop inflation from falling too low.

The Bank of Japan's most recent QE programme began in April 2013, when central bank boss Haruhiko Kuroda promised to unleash a massive QE programme worth $1.4tn (£923bn). It formed part of a set of policies known as Abenomics, which hoped to pull Japan out of the deflation it had long suffered and stimulate the economy. Yet statistics show that Abe's economic policies have not achieved the desired results. Japan's GDP only grew 0.4 percent in 2015. With inflation worryingly low and consumer spending floundering, the Bank of Japan went even further last October, introducing negative interest rates for the first time. The move is designed to encourage commercial banks to use excess reserves they keep with the central bank to lend to businesses.

At the same time, the US Federal Reserve (Fed) was spending only a little more per month at $85bn, compared with $70bn by the Bank of Japan. But the US economy is almost three times the size of Japan's. As the US economy steadily improved in the aftermath of the Fed's cash injection, the central bank gradually slowed its bond-buying programme. US unemployment fell sharply after QE started and the US economy proved relatively solid. The economy is forecast to grow 3.6% this year by the International Monetary Fund. In 2016, the US central bank is expected to announce two to three interest rate hikes after it increased rates in December for the first time in nearly a decade.

The Bank of England launched QE in March 2009, announcing £75bn of newly created money to buy bonds, when it also cut interest rates to a new record low of 0.5%. However, the Bank later admitted that the richest 10% of households in Britain had benefited the most from QE. The strategy has been criticised by groups representing savers and pensioners because savings rates, have all fallen.

Adapted from: The Guardian, 2016

Extract 5: Japan's credit rating cut as S&P deals blow to Abenomics' credibility

Standard & Poor's (S&P) downgraded Japan's credit rating by one notch from A+ to AA- as it warned that the country's performance would not be "strong enough" to justify a higher grade. The decision will reignite doubts about the efficacy of Prime Minister's Shinzo Abe's three-pronged package of measures intended to lift the Japanese economy out of deflation.

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Dubbed Abenomics, Tokyo's policymakers have sought to fend off weak inflation with a combination of monetary and fiscal stimulus, and supply-side reforms.

But S&P suggested that the much-heralded economic revival had failed to materialise. Its downgrade reflects "our expectations that modest growth and stabilisation of price levels will slow an increase in government indebtedness over the next two years and eventually stabilise it", it said. Japan's rating could be cut further if there was an indication "that the government debt burden could rise more significantly than we currently expect", S&P added.

Source: The Telegraph, 16 September 2015

Extract 6: Reduce long working hours to maintain economic vitality: The Japan News

To maintain economic vitality in society amid a declining population, it is essential to improve the environment so women and elderly people can better exhibit their ability and more actively participate in society. The biggest challenge is to address long working hours. Working hours of regular employees in Japan remain high, at around 2,000 hours a year. The ratio of workers with long working hours is also conspicuously high when compared with Europe and the United States. Current labour practices, under which overtime has become normal, have prevented women - whose time is limited because of child-rearing and nursing care of elderly people - from actively participating in society. This has made it difficult for them to balance their work and family life, which has also become a major factor in the declining birth rate. In moving ahead with work style reforms, it is vital to enhance the productivity of every worker.

Non-regular workers must be helped to develop their competence by improving vocational training programs for them or expanding opportunities for them to pursue continuing education at colleges. The bill to revise the Labour Standards Law has, as its central pillars, proposals introducing an employment pattern under which wages will be decided based on work results rather than by number of hours worked.

Source: The Straits Times, 30 September 2016

Extract 7: What's wrong with Japan's Economy

Japan's economy has been in trouble for decades. Massive monetary and fiscal stimulus have so far failed to spur faster growth. This week, the Bank of Japan meets to decide whether to apply yet more economic shock therapy. Here's the situation the country's leaders face:

Table 3

	Above 65 as % of population	**Fertility Rate (%)**	**International migrants as % of population**
Japan	26.3	1.4	1.6
United States	14.8	1.9	14.5
*Median**	*17.8*	*1.7*	*12.2*

*Median is based on OECD countries

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Japan has the world's oldest population, as well as a low birth rate and little immigration, but its growth problems go far deeper.

With the Japanese unwilling to spend, companies are increasingly investing overseas rather than at home. Wages are stagnant and growth has stayed low, with frequent recessions.

Japan's debt burden far outstrips that of other countries, largely a result of the stimulus introduced to help fix the economy. Higher debt led the government to consider a sales tax increase for revenue. Abenomics, Prime Minister Shinzo Abe's rescue plan, which initially relied too much on financial and fiscal measures, has run short of solutions for tackling the structural problems facing Japan's economy. Issues such as an aging population, a weak domestic market and erosion of Japanese firms' competitiveness in the global economic system have not been fundamentally addressed. Given that the real economy has not substantially improved, persisting with monetary easing policies can only be counterproductive. Abenomics has helped to weaken the yen and boost corporate profits but wages and domestic spending have remained fragile.

The monetary stimulus weakened the yen, and until earlier this year exporters felt the benefit but consumer spending hasn't followed and—with the central bank still far from its 2 percent target—neither has inflation.

The Bank of Japan says it will keep taking whatever action is needed to meet its targets and Abe has pledged "bold" measures this fall. Yet with stimulus failing so far to spur growth, economists and policy makers say broader, more dramatic strategies are needed.

Adapted from: Bloomberg and Guardian, 2016

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Questions

(a) Using Table 2, explain why any one indicator might have been a concern to the Japanese government. [2]

(b) Extract 5 mentions that there is a cut in Japan's credit rating.

(i) Explain why Japanese yen fell in value after the cut in credit rating. [2]

(ii) Using a diagram, explain how this fall in the value of Japanese yen might affect prices of goods and services in Japan. [3]

(c) Using Extract 4, discuss the factors that central banks should consider when deciding whether to extend quantitative easing. [7]

(d) Explain why the Bank of Japan introduces negative interest rates while US's Fed raises its interest rates. [6]

(e) (i) How is the rate of inflation and standard of living related to each other? [1]

(ii) With reference to the data where relevant, explain and comment on whether Japan will have a higher standard of living than US. [8]

(f) With reference to Extract 7, explain possible reasons why Japanese are unwilling to spend. [4]

(g) Using evidence from the case study and/or your own knowledge, discuss the policy options that Japan could adopt to address its economic challenges. [12]

[Total: 45 marks]

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Suggested Answer: CSQ 1

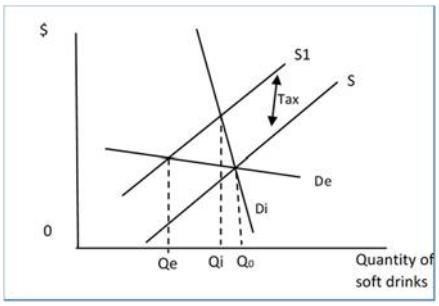
Qn	Questions	
a)(i)	**Why might the changes shown in Table 1 have led to a decrease in the world price of sugar?**	**[2]**
	Greater surplus of sugar in the world markets. (1m) Surplus in 2016/17 = 173,980 – 170,773 = 3,207 (,000 metric tons) Surplus in 2017/18 = 191,823 – 174,125 = 17,688 (,000 metric tons) The surplus grew bigger thus adding more pressure for prices to decrease in the price of sugar. (1m)	
a)(ii)	**Given the information contained in Table 1, identify the country that has had the greatest impact on world prices. Justify your answer.**	**[3]**
	The country with the greatest impact would be the one with the greatest change to supply or demand for cotton on the world market. (1m)	

	2016/17	**2017/18**	**2016/17**	**2017/18**	**2016/17**	**2017/18**
China	9,300	10,250	15,600	15,700	-6,300	-5,450
India	22,200	32,445	25,500	26,500	**-3,300**	**5,945**
European Union	18,313	21,150	18,700	18,800	-387	2,350
Pakistan	6,825	7,425	5,100	5,400	1,725	2,025
United States	8,136	8,393	10,979	11,181	-2,843	-2,788

India has had a large impact as it changed from a net importer (-3,300 000 metric tons) to a net exporter (5,945 000 metric tons) (From adding to supply to adding to demand). (2m)

b)	**Using diagrams, explain what determines the extent of the change in the quantity of soft drinks consumed by the different types of consumers following the imposition of the sugar tax in UK.**	**[4]**

- Identify the "different types of consumers"; those with price elastic dd vs those with price inelastic dd.
- - PED<1 include consumers with high income (expenditure on sugar is a small proportion of income).
- - PED>1 include consumers with low income.



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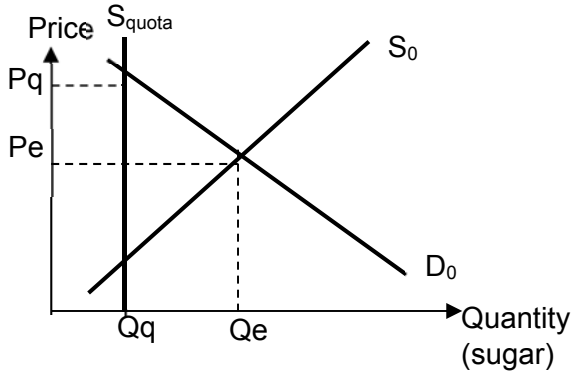
	• The factor that determines the extent of the change in price when an indirect tax is imposed is the PED. • Define PED. (1m) • Show the contrast in Price when PED>1 and when PED<1. (Q to Qi vs Q to Qe) (3m)	
c)	**Extract 2 refers to the effects of removing quota on sugar production.** **Using a supply and demand diagram, explain the effect on the market for sugar in UK of such quota removal.**	**[3]**
	 -Define 'Quota' (1m) -Price & Quantity with quota is Pq and Qq. (1m) -After the removal of the quota, Price will fall to Pe and quantity will rise to Qe. (1m)	
d)	**Explain the determinants of a rational consumer's decision on whether to consume sugary drinks.**	**[6]**

	- Explain what constitutes 'rational' decision making (to maximize net benefits) (1m)
	- Relate 'utility' to consumer's benefit. (1m)
	- Explain the marginalist principle: (2m)
	  • Define marginal cost and marginal benefit.
	  • Explain why net benefits is maximized at the consumption level where marginal benefit equals marginal costs.
	- Explain the determinants of marginal benefit. (tastes, price of substitutes, complements, intended and unintended benefits etc) (1m)
	- Explain the determinants of marginal costs. (price paid for the good, time given up for the consumption process, other goods forgone, intended and unintended costs etc) (1m)	

e)(i)	**Using Extract 3, explain why the Singapore government would want 'to reduce the amount of sugar in all the soft drinks consumed in Singapore'.**	**[5]**

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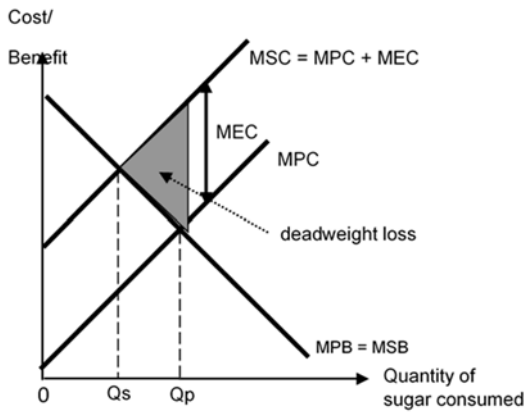
- State the Micro objective of government (Allocative Efficiency). To achieve this governments strive to eliminate (or reduce) deadweight loss, due to negative externality in consumption and information failure. (1m)
- Explain how the consumption of sugar leads to external costs (illness)

<u>Deadweight loss resulting from external costs:</u>



(2m)
Note: The MEC identified should be loss in efficiency due to illness (diabetes)

<u>Deadweight Loss due to information failure. (When Perceived Benefit > Actual Benefits)</u>

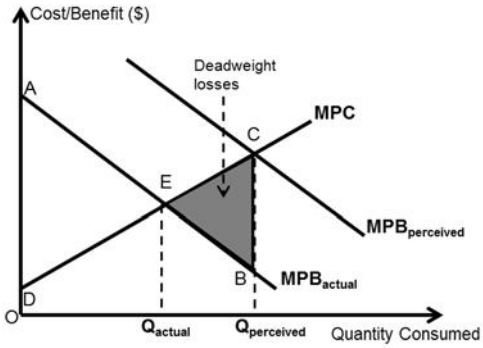


Figure 8: Reduction in net private benefit due to imperfect information

(2m)
Note: Equal credit should be awarded to those who take the costs approach i.e, (Perceived Costs < Actual Costs)

[Max of 3m is only ONE source of mkt failure is explained]

e)(ii) **Discuss whether the problem of increased incidence of diabetes in Singapore caused by the unlimited consumption of sugary drinks can better solved by education rather than indirect taxation.** **[10]**

INTRO: Outline the criterion by which policy solutions are assessed; including 'effectiveness' (ability to eliminate the deadweight loss) and cost of implementation (monetary costs & opportunity costs)

THESIS: Explain how education can be effective eliminating the d w loss resulting from overconsumption of sugary drinks.

- **Limitations**; effectiveness of internalising the external cost and/or correcting the misinformation, explicit costs of education programmes.

-**ANTITHESIS:** Explain how the taxation works.

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	- Outline the **limitations.** **ASSESSMENT** of the 2 approaches (compare limitations of education with taxation) **JUDGEMENT.** Come to a judgement (made here with SR and LR considerations)			
	L3	Question requirements are interpreted accurately - Both sources of mkt failure are addressed by the education & taxation. - The effectiveness of the two approaches are compared adequately - The criterion for assessment is clearly outlined. Appropriate concepts and diagrams are used accurately - MSB/MSC analysis is accurately used. - Clear understanding of $MPB_{perceived}$ and MPB_{actual} is demonstrated. - Diagrams are clearly drawn and accurately labelled (in context) - Shows a clear understanding of how the measures work.	5-7	
	L2	Addresses some questions requirement adequately Incomplete (inaccurate) use of MSB/MSC analysis Weak / unclear explanation of how the measures work. Little or no comparison of the two measures and their limitations.	3-4	
	L1	A sketchy inaccurate answer that shows misunderstanding of the question requirements.	1-2	
	E2	Good evaluation, well-reasoned and supported.	2-3	
	E1	Some unsupported evaluative statements.	1	
f)	**Instead of discouraging the consumption of sugary drinks, there should be subsidies on healthy dietary choices.** **Discuss whether subsidies on healthy dietary choices promote the efficient working of the price mechanism.**			**[12]**

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Intro: “Efficient working” (using market based intervention tools)

Thesis (subsidising the consumer)

- Show how subsidising the consumer can correct market failure caused by positive externalities. (promotes the efficient working of Price Mechanism)
- Subsidies achieve this as a market based tool
- Promotes the working of the price mechanism.
- Examine the limitations

Antithesis (subsidising producer)

- Show how subsidising the producer can correct market failure caused by positive externalities.(Promotes the efficient working of the Price Mechanism)
- Examine the limitations (generic limitations of subsidies)
  - The amount of subsidies given can lead to over or under consumption due to imperfect info and the inaccurate valuation of the MEB by the government.
  - Opportunity cost of using subsidies. Consideration of subsidies better utilised in other areas (e.g. healthcare)

Judgement: Considerations:

- Which kind of subsidy is better? Why?
- Are there any other approaches that promotes the working of the Price Mechanism better?

L3	Question requirements are interpreted accurately - Shows good understanding of market based vs non-market based approaches. - Recognises the relationship between ‘healthy food choices’ and ‘unhealthy food choices’. (can be viewed as merit vs demerit goods) - Clearly shows the limitations of using subsidies.	6-9
L2	Addresses some questions requirement adequately	3-5
L1	A sketchy inaccurate answer that shows misunderstanding of the question requirements.	1-2
E2	Good evaluation, based on the measure being supportive of the price mechanism.	2-3
E1	Some unsupported evaluative statements.	1

[Total: 45]

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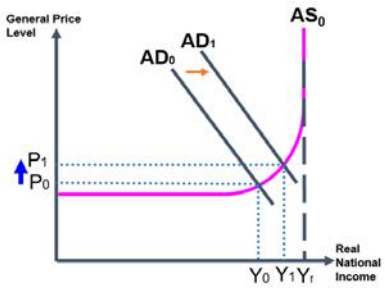
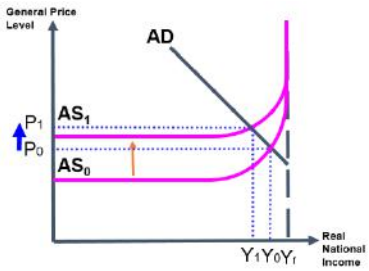
Suggested Answer: CSQ 2

(a)		Using Table 2, explain why any one indicator might have been a concern to the Japanese government. Percentage of government debt to GDP is high (twice of that of US) [1] → *Ext 5, Para 2: Japan's rating could be cut further if there was an indication "that the government debt burden could rise more significantly than we currently expect", S&P added."* → cut in credit rating → investors lose confidence → I falls → AD falls → fall in RNY → fall in actual growth [1] • Identity any indicator (other than unemployment) that might have been a concern [1] • Give reason [1]	[2]
(b)		Extract 5 mentions that there is a cut in Japan's credit rating.	
	(i)	Explain why Japanese yen fell in value after the cut in credit rating. • *Extract 2: "The decision will reignite doubts about the efficacy of Prime Minister's Shinzo Abe's three-pronged package of measures"* • Cut in credit rating → people lose confidence in the currency and sell Yen [1] → supply of Yen rises → value of Yen falls → depreciation [1] Alternatively, demand for Yen falls as (foreign) investor and business confidence falls	[2]
	(ii)	Using a diagram, explain how this fall in the value of Japanese yen might affect prices of goods and services in Japan. • Depreciation → price of exports fall in foreign currency → rise in demand for exports → rise in price and quantity of exports → rise in export revenue • Price of imports rise in Yen → assuming demand for imports is price elastic since there substitutes available → quantity falls more than proportionately → fall in import expenditure • Rise in net exports → rise in AD (diagram) → rise in GPL from P_0 to P_1 → rise in prices of goods and services in Japan  OR • Depreciation → rise in price of imported inputs in Yen → rise in COP → fall in SRAS → r ise in GPL from P_0 to P_1 → rise in price of goods and services  2m – explanation 1m – diagram	[3]

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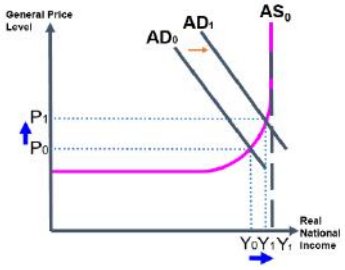
(c)		Using Extract 4, discuss the factors that central banks should consider when deciding whether to extend quantitative easing.	[7]

Intro

Explain purpose of QE → inject money into the financial system → i/r falls → boost spending → C&I rises → AD rises → boost growth and prevent inflation from being too low

Body

Factors to consider



- Benefits: AD rises → RNY rises → economic growth, fall in unemployment
  - *"US unemployment fell sharply after QE started and the US economy proved relatively solid" → beneficial for US*
- Costs: AD rises → rise in GPL → demand-pull inflation
- Unintended consequences: With lowered i/r → saving rates fell → disadvantaged pensioners and savers
  - *"The strategy has been criticised by groups representing savers and pensioners because savings rates, have all fallen"*

Evaluate

Which factor is the most important factor and provide reason depending on country

- E.g. "benefits" as the most important factor – central banks need to consider whether extension of QE will really bring in the intended benefits (whether there has been some results to signal that the policy is a step in the right direction) → US has been seeing some results (Extract 4 para 2: US unemployment fell sharply after QE started) vs abysmal results in Japan (Extract 4 para 1: GDP only grew 0.4 percent despite pumping in $1.4 trillion) → US can consider extending QE further but Japan might perhaps consider other policies instead of extending QE since the economy does not seem to be responding well

  OR
- "costs" as the most impt factor – US has been seeing results after implementing the QE but is afraid that it might result in demand-pull inflation if QE is too extensive (afraid that cost may outweigh the benefits) → may want to pull back and not consider extending QE (Extract 4 para 2: In 2016, the US central bank is expected to announce two to three interest rate hikes after it increased rates in December for the first time in nearly a decade)

Knowledge, Understanding, Application and Analysis		
L2	• Question requirements are interpreted accurately. **Provided at least 3 factors with examples from extracts.** • Appropriate economic concepts, theories and principles are used. Economic analysis is accurate, complete and well supported by contextual evidence.	3 – 5

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	• Appropriate diagrams are used to support economic analysis, where relevant.	
L1	• Question requirements are interpreted inaccurately. • Inappropriate economic concepts, theories and principles are used. Inaccurate economic analysis. • Inappropriate or wrong diagrams are used.	1 – 2
Evaluation		
E	Evaluative comments are well-explained and supported by economic analysis. **Made a stand on the most important factor.**	2
	Unexplained evaluative comments.	1

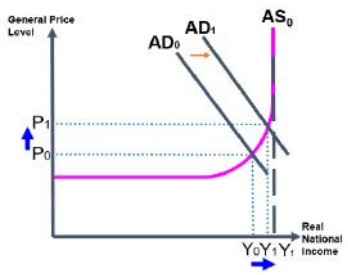
(d) Explain why the Bank of Japan introduces negative interest rates while US's Fed raises its interest rates. [6]

<u>Reason(s) why Japan introduces negative interest rates [2]</u>

1) Abenomics unsuccessful in pulling Japan out of deflation
2) *"Japan's GDP only grew 0.4 percent in 2015…With inflation worryingly low and consumer spending floundering…"* → Japan could experience a further contraction in the economy and a deflation if nothing is done

<u>Negative i/r [1]</u>

"encourage commercial banks to use excess reserves they keep with the central bank to lend to businesses." → makes cost of borrowing cheaper → rise in investment expenditure → rise in AD (diagram) → rise in RNY (actual growth) and GPL (inflation)

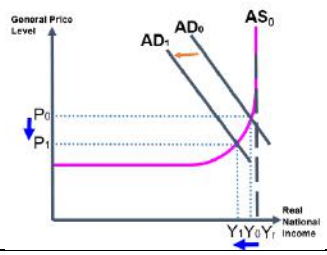


<u>Reason(s) why US raises its interest rates [2]</u>

1) *"US economy steadily improved… unemployment fell sharply… economy is forecast to grow 3.6% this year"* → substantial rise in AD → rise in GPL → inflation

<u>Raise i/r [1]</u>

COB falls → C&I falls → AD falls → GPL falls → lower inflation rate → ensure price stability



(e) (i) How is the rate of inflation and standard of living related to each other? [1]

Rising inflation rate is inversely related to the standard of living.

Alternative: Rising inflation due to AD rising will also result in RNY to rise, raising income and purchasing power and thus SOL.

(ii) With reference to the data where relevant, explain and comment on whether Japan will have a higher standard of living than US. [8]

<u>Intro</u>

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		Define SOL <u>Japan will have a higher SOL than US</u> • Table 1: Japan's unemployment rate is lower than US → more are employed → greater access to goods and services → higher material SOL • Table 1: Japan has a longer life expectancy → indicating better healthcare and quality of life → higher non-material SOL <u>Japan will not have a higher SOL than US</u> • Table 1: GNI per capita is greater for US than Japan → greater income accrued to one person in US than Japan → Americans are able to buy more goods and services → higher material SOL in US than Japan • Extract 3: *"The biggest challenge is to address long working hours. The ratio of workers with long working hours is also conspicuously high when compared with Europe and the United States."* → lesser leisure time than in US → lower quality of life → lower non-material SOL • Extract 4: Greater percentage of the aged in Japan than US & Lower fertility rates in Japan than US → percentage of people contributing to the economy is lower and with little immigration, Japan has to depend on their own population → lowers production of goods and services → material SOL falls [Up to 5 marks for above] <u>Comment [up to 3 marks]</u> • Make a stand → which country will have a higher SOL → US will have a higher SOL than Japan. Despite Japan having a lower unemployment rate than US, it is not comparable since US's economy is three times that of Japan (Ext 4). US's unemployment also fell sharply and economy proved relatively solid after QE (Ext 4) showing that the policy used for US worked and this enabled a rise in RNY and therefore material SOL. • Data is insufficient to make a conclusion: need other data → Although data points to Japan having a lower quality of life due to long working hours, this data on US is not provided as well as other indicators such as level of pollution → more data is needed to make a conclusion.	
(f)		With reference to Extract 7, explain possible reasons why Japanese are unwilling to spend. [2] Consumer confidence is low → C falls or Expectations of future fall in prices → C falls [2] Sales tax hike → rise in COP → fall in SRAS → fall in RNY → fall in income → fall in purchasing power → unwilling to spend →	[4]
(g)		Using evidence from the case study and/or your own knowledge, discuss the policy options that Japan could adopt to address its economic challenges.	[12]

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Intro

Economic Challenges (Explain any 2 challenges)

- Ageing population
- Declining birth rate
- Deflation
- Few immigrants → shortage of workers
- Stagnant wages
- Low growth, frequent recessions
- Weak domestic market
- Higher debt

Body

Policy Options to address the various challenges (Explain any 2 policies):

(i) Higher debt

- Raise sales tax → Rise in COP → fall in SRAS → rise in GPL → counters deflation
- Limitation → reduces RNY → slows growth even further

(ii) Stagnant wages (+low growth, frequent recessions)

- Revenue from taxes could be used to finance education and training (improving vocational training programs) to improve the productivity of workers → raise income
- Productivity of workers increase → quality of labour rises → LRAS rises → actual and potential growth
- Limitation → effect takes time

(iii) Weak domestic market

- Fall in direct tax → rise in C&I → rise in AD → rise in actual growth, rise in GPL
- Limitation → Fall in revenue since tax rates fall → doesn't help to reduce government debt

(iv) Few immigrants → shortage of workers, ageing population

- Encouraging immigrants policy → rise in quantity of labour → rise in LRAS → rise In actual and potential growth
- Encourage more women to join the workforce → labour reforms → increase in quantity of labour
- Limitation: Cultural workforce traditions are rigid limits the effectiveness of this policy

Conclusion/EV

- Most concerning economic challenge: Stagnant wages (+low growth, frequent recessions)
- *"Abenomics…which initially relied too much on financial and fiscal measures, has run short of solutions for tackling the structural problems facing Japan's economy. Given that the real economy has not substantially improved, persisting with monetary easing policies can only be counterproductive."* → ss-side policies more important
- The policy options may have addressed the economic challenges of Japan but it comes at a cost. Japan has a lot of economic issues that this is inevitable. Therefore rising sales tax must be accompanied by

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efforts to restructure the economy – in terms of investing in capital and labour to improve productivity or to attract firms to do so. This will ensure that with the greater income and profits generated from workers and firms respectively, they will be able to contribute greater revenue from paying income and corporate tax. This will then also mean that Japan's issue of higher debt can be resolved. Simply increasing the sales tax will not be a good option since it only seems to address the problem of higher debt at face value and later on result in consumers spending even lesser, contracting the economy further. The structural issues such as long working hours and difficulty of integrating women in the workforce also contributes to the falling productivity which needs another set of structural reforms and changing mindset of employers, and not just the policy options mentioned above.

Knowledge, Understanding, Application and Analysis		
L3	• Question requirements are interpreted accurately. **Addressed 2 economic challenges with different policies and its limitations.** • Appropriate economic concepts, theories and principles are used. Economic analysis is accurate, complete and well supported by contextual evidence. • Appropriate diagrams are used to support economic analysis, where relevant.	6 - 9

L2	• Addresses some question requirements accurately.
	  o **Addressed only 1 challenge but 2-sided answer**
	  o **Addressed 2 challenges but 1-sided answer**
	• Some appropriate economic concepts, theories and principles are used. Economic analysis is accurate but incomplete.
	• Attempts to address the context of the question but is incomplete.
	• Appropriate diagrams are used but might not be explained or used to support economic analysis.
		3 - 5

L1	• Question requirements are interpreted inaccurately. • Inappropriate economic concepts, theories and principles are used. Inaccurate economic analysis. • Inappropriate or wrong diagrams are used.	1 – 2
Evaluation		
E2	Evaluative comments are well-explained and supported by economic analysis. **Make a stand on the most concerning economic challenge to be addressed.**	2-3
E1	Unexplained evaluative comments.	1

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PIONEER JUNIOR COLLEGE, SINGAPORE
JC2 PRELIMINARY EXAMINATION 2018
Higher 1

ECONOMICS **8823/01**

Paper 1 13 September 2018

3 hours

Additional Materials: Answer Paper

*PJC/8823/Paper 1/ 2018

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.

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Answer **all** questions.

Question 1: Controlling the Price Mechanism

Extract 1: Price mechanism versus government intervention

In his 1776 book An Inquiry into the Nature and Causes of the Wealth of Nations, economist Adam Smith made the most famous observation in all of economics: Households and firms interacting in markets act as it they are guided by an "invisible hand" that leads them to desirable market outcomes. Prices reflect both the value of a good to a society and the cost to society of making the good. Because households and firms look at prices when deciding what to buy and sell, they unknowingly take into account the social benefits and costs of their actions. As a result, prices guide these individual decision-makers to reach outcomes that, in many cases, maximise the welfare of society as a whole.

Although the invisible hand usually leads markets to allocate resources efficiently, that is not always the case. Economists use the term market failure to refer to a situation in which the market on its own fails to produce an efficient allocation of resources. One possible cause of market failure is an externality, which is the impact of one person's actions on the well-being of a bystander. The invisible hand may also fail to ensure that economic prosperity is distributed equitably. In the presence of externalities and inequitable distribution of income, government intervention such as taxes, subsidies and price controls are used to enhance economic efficiency and achieve a more equitable distribution of income.

[Source: N. Gregory Mankiw, Euston Quah, Peter Wilson, Principles of Economics]

Extract 2: Pay-as-you-go government

As cash-strapped Western countries try to balance their books without raising unpopular taxes, they are charging higher fees for everyday services. Half the countries in the EU have increased health-care charges since the financial crisis. In Britain, where a severe fiscal squeeze is under way, new fees are popping up in unexpected places, from the criminal courts to municipal pest-control agencies.

Pay-as-you-go government has advantages. Charging for services helps allocate resources efficiently, deterring overconsumption, just as parking meters stop people hogging spaces. And far from being uniformly regressive, fees can be fairer than general taxation. Selling water by the litre, as Ireland controversially began to do in January, means frugal users pay less than those whose taps gush. Tuition fees reduce the subsidies paid to students by those who never enjoyed the benefit of university. Some of the biggest consumers of free or subsidised services are the middle classes, who ought to pay.

[Source: The Economist, 27 August 2015]

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Extract 3: The pill that costs $9,000 in US sells for $70 in India

Last month, generic manufacturer Natco announced that it would be supplying daclatasvir, a Hepatitis C drug, to 112 developing countries. In 2013, a medicine to treat Hepatitis C, sofosbuvir, hit international headlines for its price — $1,000 per pill. The sofosbuivir and daclatasvir combination used for the disease costs almost $150,000 per patient for the 12-week regimen in the US. But in India, it is priced at just $700 or a little over Rupees 46,500 per patient for the same regimen. And prices are expected to fall further.

Typically, the price of many expensive patented drugs in European countries like France, Spain or the UK is half of what these cost in the US. In countries like Brazil or South Africa, these are a third or a fifth of the US price. The Indian price is often 1/100th. This could be due to India's patent law which enhance competition by generic drug manufacturer.

Table 1: Prices of drugs in US and India

Disease	Drug	Cost per person per month ($)		Indian price as % of US price
		US	India	
Hepatitis C	Sofosbuvir + Daclatasvir	50,000	233	0.5
Lung cancer	Erlotinib	6,658	161	2.4

[Source: timesofindia.indiatimes.com, 7 February 2016]

Extract 4: India To Review Drug Price Control To Make It More Lucrative For Pharma Companies

In a move that could potentially result in higher prices of many essential drugs, the Indian government is considering a review of its current drug price control policy to encourage private investments in the sector, Economic Times reported.

According to the ET report that cited a senior government official, Niti Aayog Chief Executive Officer Amitabh Kant has asked India's health ministry to scrap all regulatory hurdles for pharma companies. Niti Aayog sees the drug control regime as hindering investments in the sector, it added.

The policy changing move, which is seeking to dilute the authority of the current drug price setting authorities, has backing from the Prime Minister's Office, according to the report.

India has had a long history of making its essential drugs affordable for its large population and has often sidestepped patents on certain major drugs. The country's regulators have been under increasing pressure from pharmaceutical companies to recognise patents that allow them to maximise profits.

[Source: Huffpost, 4 October 2016]

Extract 5: Electric cars 'will be cheaper than conventional vehicles by 2022'

Electric cars will be cheaper to own than conventional cars by 2022, according to a new report. The plummeting cost of batteries is key in leading to the tipping point, which would kickstart a mass market for electric vehicles, Bloomberg New Energy Finance (BNEF) analysts predict.

The large-scale roll-out of electric vehicles (EVs) is seen as vital in both cutting the carbon emissions that drive climate change and in dealing with urban air pollution, which leads to many premature deaths every year. But, despite subsidies in many countries, EVs remain more

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expensive than conventional cars and the limited range of battery-only cars is still a concern. Currently, just 1% of new cars sold are electric.

However, the analysis published by BNEF on Thursday predicts that the total cost of ownership – combining purchase price and running costs – of battery-only cars will dip below those with internal combustion engines in 2022, even if the conventional cars improve their fuel efficiency by 3.5% a year. The analysis uses the US government's projected oil price of $50-$70 (£36-£50) a barrel in the 2020s. If the price is $20, the tipping point is pushed back by between three and nine years.

[Source: The Guardian, 25 February 2016]

Extract 6: Which countries are speeding ahead with electric cars?

China
The emerging middle class in China represents a significant market for electric vehicles. Sales are on the up, boosted by a generous incentive programme such as subsidies. Infrastructure investment also aims to boost electric car ownership. Beijing plans to install more than 400,000 charging points by 2020.

Norway
Norway is often credited with leading the world in the charge towards electric vehicles. Although not a major auto market, the sales of all electric vehicles are reportedly growing faster than anywhere else. Very generous incentives, such as exemptions from value-added tax and free travel on toll roads, have been so successful that last year the Norwegian government was forced to review them.

[Source: https://www.weforum.org, 7 Apr 2016]

Table 2: Electric car stock in China and Norway (thousands)

	2010	2011	2012	2013	2014	2015
China	1.91	6.98	16.88	32.22	105.39	312.77
Norway	3.35	5.38	9.89	20.37	44.21	84.18

[Source: International Energy Agency]

Table 3: Market share of electric cars in China and Norway in 2015

	Number of electric cars as % of new car in 2015
China	1.2%
Norway	23.4%

[Source: International Energy Agency]

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Questions

(a) What is the main characteristic of a normative economic statement? Identify one example of such a statement from Extract 2. [2]

(b) **(i)** Suggest a possible value of price elasticity of demand (PED) for drugs in USA and explain **two** factors which bring about this value of PED. [6]

(ii) With reference to Extract 3 and using a demand and supply diagram, explain why the price of drug in Figure 1 is much higher in USA than India given this value of PED. [4]

(c) With reference to Extract 4:

(i) Using a demand and supply diagram, explain the effect of price control on the market for essential drugs in India. [4]

(ii) Discuss the factors that the Indian government should consider when removing the price control on essential drugs. [8]

(d) **(i)** With reference to Figure 2, compare the change in sales of electric cars from 2010 to 2015 between China and Norway. [2]

(ii) With reference to Table 3, give a reason for the difference in market share of electric cars in Norway and China in 2015 despite the differences in the change in sales of car in d(i). [1]

(iii) Comment on whether the change in sales in electric cars from 2011 and 2015 in China and Norway is due to price factor. [6]

(e) Using evidence from the case study and/or your own knowledge, assess whether the price mechanism will always allocate scarce resources in the most efficient manner for all goods and services in a market economy. [12]

[Total: 45]

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Question 2: The tale of BRICS

Table 4: Rates of growth of GDP, annual percentages, by year

Countries/ Year	2012	2013	2014	2015	2016
Brazil	1.9	3.0	0.5	-3.5	-3.4
Russia	3.7	1.8	0.7	-2.8	-0.2
India	5.5	6.4	7.4	8.1	7.1
China	7.9	7.8	7.2	6.9	6.7
South Africa	2.2	2.5	1.8	1.2	0.5

[Source: World Bank]

Table 5: Human Development Index, by year

Countries/ Year	2012	2013	2014	2015
Brazil	0.734	0.747	0.754	0.754
Russia	0.799	0.803	0.805	0.804
India	0.599	0.607	0.615	0.624
China	0.713	0.723	0.734	0.738
South Africa	0.652	0.660	0.665	0.666

[Source: United Nations]

Extract 7: The Mixed Fortunes of BRICS

The story of the BRICS begins with Goldman Sachs chief economist Jim O'Neill, who wrote a paper in 2001 arguing that these were the emerging superstars most likely to dominate the 21st century globalized economy. Taken together, these five countries cover 40 percent of the world's population and more than 25 percent of the world's land.

Roughly speaking, the BRICS can be broken into two groups—those that took advantage of globalization's march to integrate themselves into global supply chains (primarily China and India) and those that took advantage of globalization to sell their abundant natural resources (primarily Brazil, Russia and South Africa).

For India, instead of focusing on manufacturing, it went the services route instead. Today, services account for roughly 61 percent of its GDP, with a particular emphasis on IT—at $108 billion, India is one of the world's leading IT services exporters. And the rise of India's middle class resembles that of China's; Indians went from 1 percent of the global middle class in 1990 to 8 percent in 2015, with another 380 million Indians expected to join by 2030.

The picture is decidedly mixed, meanwhile, with the other BRICS countries, who rose mainly on the back of their vast natural wealth. Brazil sells commodities like soybeans, iron ore, and crude oil on global markets. South Africa also used its natural wealth—in this case rare gems and metals like gold, diamonds and platinum—to help get its economy on track following apartheid. In 1990, the country exported $27 billion worth of goods; by 2011, that number had increased nearly five-fold. And then there's Russia, which spent the 1990s rebuilding itself from the rubble of the Soviet Union. Thankfully, the country is blessed with abundant energy sources—crude oil, natural gas, metals and minerals—that helped it find its footing. But the fall in commodity prices in 2015 to 2016 has done significant damage in all three countries.

It would be easy to label India and China as the clear winners among the BRICS, but it's not that simple. Yes, India and China have the fastest growth rates of any major economies in the world, and citizens of these countries remain optimistic about the future. But nearly 50 percent of Indians

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remain vulnerable to a slide back into poverty, and China's economy has slowed as higher wages make manufacturing more expensive. Both countries are especially vulnerable to technological changes that bring automation into the workplace on a larger scale.

[Source: http://time.com, 1 Sept 2017]

Extract 8: Automation threatens jobs

Research has predicted that the proportion of jobs threatened by automation in India is 69%, while it is 77% in China, World Bank President Jim Yong Kim has said, citing data from the multilateral agency.

While the Narendra Modi government has promised to create millions of jobs to absorb thousands of youth coming to the workforce, critics say not enough jobs are being created in the economy. Quick expansion of automation could contribute to a rise in structural unemployment in the labour market and rising inequality, according to the World Development report.

From a technological standpoint, two-thirds of all jobs are susceptible to automation in the developing world but effects are moderated by lower wages and slower technology adoption. Kim called on creating resources for infrastructure to get developing countries to invest in people. "Countries need to increase their investments in people necessary to build a workforce that can be competitive in the economy of the future," said the World Bank president.

[Source: https://timesofindia.indiatimes.com, 6 Oct 2016]

Extract 9: Brazil's recession worst on record

The economy contracted by 3.6% in 2016, meaning it is now 8% smaller than it was in December 2014. The country has been hard hit by the fall in commodity prices and an internal political crisis that has undermined investor confidence. The situation has been made worse by the high debt levels. The two-year slump has seen the number of unemployed rise by 76% to 12.9 million, a rate of 12.6%.

Brazil was once one of the fastest-growing economies in the world, the 'B' in the BRICS group of nations regarded by many investors as having the world's best growth potential. Its key exports - including oil, soy and metals, were in hot demand. But as growth in the biggest element of that grouping, China, began to slow, so did demand for commodities and their prices.

But there are some signs that this recession may be soon over. Brazil's monthly inflation rates suggest prices in the economy are stabilizing, and interest rates are falling at a faster pace than expected. This could fuel consumption and investment and speed up the country's recovery. Also there could be tailwinds from the global economy, with prices of commodities on the rise again and possible growth coming from the US. But much of Brazil's recovery still depend on whether government reforms in public spending are successful.

[Source: BBC.com, 7 March 2017]

Extract 10: The strive for sustainable development in India

With a population rapidly approaching that of China crammed into just one third of the area, India suffers from resource scarcity on a level unlike any other nation. So while it nominally faces many of the same challenges as other BRIC nations – water scarcity, dirty energy supplies, human rights issues – India's population density makes its situation exponentially more difficult.

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A World Bank study in 2014 found that environmental degradation like air pollution, water pollution, deforestation and natural disasters cost India $80bn per year, or nearly 6% of its economic activity. Of that total, 52% is attributable to air pollution. If you thought China's smog was bad, Delhi's air pollution levels can be twice as high, with even less government action to show for it. India's air pollution is not only far worse than any of the other BRICs, it is so intense that it is reducing plants' ability to photosynthesize sunlight, cutting crop yields in half.

While pollution is a broad problem across India, poverty and general lack of access to basic human needs is more of a first order problem, and one that draws the lion's share of attention from government, businesses and people. In 2012, just 36% of India's population had access to improved sanitation, leading the nation's minister of rural development to call India "the world's capital for open defecations".

As a result, much of the sustainable development discussion in India has focused on inclusion and bringing the population into the 21st century. In 2014, Prime Minister Narendra Modi launched the Clean India Mission, a five-year effort to eliminate open defecation, provide access to improved sanitation, and clean up the River Ganges, among other targets. Corporations have joined up with the Clean India Mission, committing to invest in education for girls and adopting communities for cleanup, among others. During the UN climate talks in Lima, Peru, last fall, Modi announced a massive solar commitment: 100 gigawatts of solar capacity by 2022, creating as many as 1m jobs and giving rural Indians access to cheap, clean energy and greater economic opportunity as a result.

[Source: The Guardian, 4 May 2015]

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Questions

(a) Using Table 4, compare the growth performance of China and India with that of Brazil and Russia. [2]

(b) With reference to Extract 7,

(i) Extract 7 states that "the fall in commodity prices of recent years has done significant damage in all three countries."

Explain how this has impacted the macroeconomic objectives of Brazil, Russia and South Africa. [4]

(ii) To what extent does the data in Table 4 support the suggestion that the fall in commodity prices in 2015 to 2016 has done significant damage in Brazil, Russia and South Africa? Justify your answer. [3]

(iii) Using a diagram, explain how 'China's economy has slowed as higher wages make manufacturing more expensive.' [4]

(c) (i) Using Extract 8 explain how automation could contribute to a rise in structural unemployment in the labour market and rising inequality. [5]

(ii) In light of the negative effects brought about by automation, World Bank President Jim Yong Kim expresses the importance to increase investments in people necessary to build a workforce that can be competitive in the economy of the future.

Comment on whether such a policy would be effective in reducing the negative effects brought about by automation. [6]

(d) Extract 9 highlights the factors contributing to Brazil's recession.

Evaluate the policy options available to the Brazilian government to revive its economy. [9]

(e) "Data on GDP growth rates are no longer relevant in measuring the well-being of its citizens." Discuss this view. [12]

[Total: 45]

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Suggested Answers

2018 PJC H1 Economics Preliminary Examination Paper 1

Question 1: Controlling the Price Mechanism

(a)	What is the main characteristic of a normative economic statement? Identify one example of such a statement from Extract 2.		**[2]**
	Suggested answer**:** Normative economic statement is one that expresses value or normative judgments about economic fairness or what the outcome of the economy or goals of public policy ought to be. One example in extract 2 is "Some of the biggest consumers of free or subsidised services are the middle classes, who ought to pay." Or "fees can be fairer than general taxation"		
(b)	**(i)**	Suggest a possible value of price elasticity of demand (PED) for drugs in USA and explain **two** factors which bring about this value of PED.	**[6]**
	Suggested answer: Price elasticity of demand measures the degree of responsiveness of quantity demanded due to a change in the price of the same good, ceteris paribus. The demand for drugs tend to be price inelastic. Possible value of price elasticity of demand for drugs in USA is < 1. Nature of the good is one factor that affects the price elasticity of demand for drugs. As drugs is a necessity to cure diseases, the consumers have no choice but need to consume drugs even when the price rises, hence quantity demanded falls less than proportionately, making the demand for drugs price inelastic. Number and closeness of substitutes is another factor that determines the price elasticity of demand. As there are no or little substitutes for drugs to cure diseases due to patents by the US government, this makes the demand for drug to be price inelastic. When the price of the drug rises, consumers cannot switch to the relatively cheaper substitutes, hence quantity demanded of the drug falls less than proportionately.		
(b)	**(ii)**	With reference to Extract 3 and using a demand and supply diagram, explain why the price of drug in Figure 1 is much higher in USA than India given this value of PED.	**[4]**
	Suggested answer**:** **Explain difference of PED** The demand for drug is USA is price inelastic given that there is no or few substitutes for the good. This is shown by Dinelastic. For India, the demand for drug tend to be price elastic as there are other substitutes like the generic drugs. This is shown by Delastic.		

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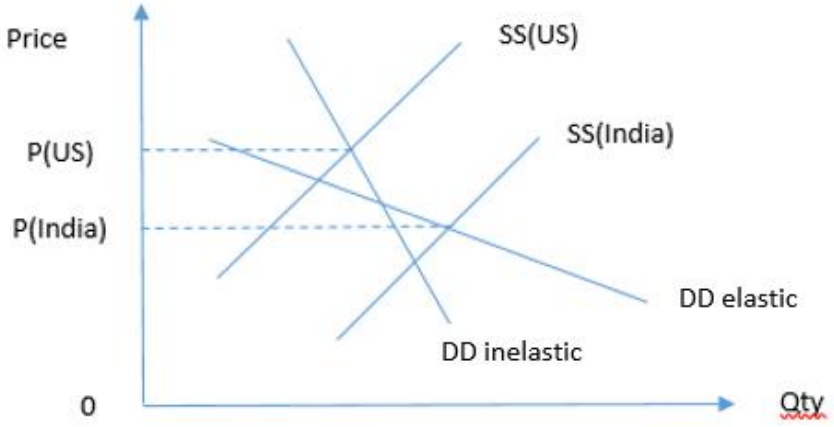
Correctly labelled diagram (accept answers that show 2 diagrams)



Explain difference in supply

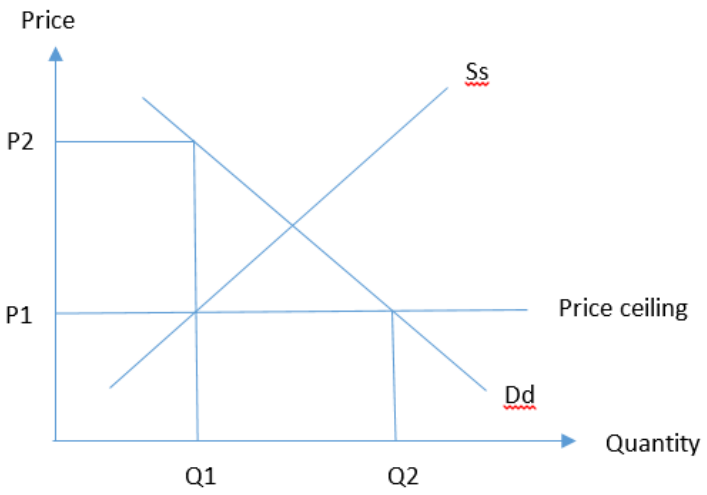
Given that the supply of drugs is lower due to the presence of patents in US, supply curve of US as shown by SS(US) is to the left of supply curve of India SS(India).

Explain combined effect

Hence, with a lower supply and more inelastic demand, price of drugs will be significantly higher for USA at P(US) compared to P(India).

(c)	With reference to Extract 4:		
	(i)	Using a demand and supply diagram, explain the effect of price control on the market for essential drugs in India.	**[4]**

Suggested answer**:**



Correctly labelled Diagram

Definition

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Price control is part of the governments' price and incomes policy to control prices and incomes in the country. Government can control the price of good either by setting a price ceiling (maximum price) or a price floor (minimum price) [1]

Explanation of how price control works and effect of price controls on the market

The government can control price through a price ceiling, that is, by setting a price below the market equilibrium price at P1. At this price, quantity supplied is at Q1, producers do not have the incentive to produce more. The quantity demanded is at Q2 which is greater than the quantity supplied creating a shortage.

Additional points
The final exchange of the good will be at P1 and Q1.

In the long run, the shortage may create a black market where the consumers resell the good at a higher price at P2 which is higher than the original equilibrium price and at quantity Q1.

	(ii)	Discuss the factors that the Indian government should consider when removing the price control on essential drugs.	**[8]**

Suggested answer**:**

Introduction
To remove the price control on essential drugs, the Indian government needs to consider the issue of equity and the ability to attract investments.

If price control is removed on essential drugs, the price and quantity will revert back to the original equilibrium level where the prices will be higher.

This will affect the lower income group of consumers where they may not be able to afford and access to basic essential drugs. As a result, it will affect their health and non-material SOL may fall. Poorer health may also lower their productivity. This will have a macro impact on the economy and AS may fall in the long run.

On the other hand, removing price control will attract pharmaceutical firms to increase their investment in India. As higher prices will give the firms incentives to invest in their production. Higher profits will also encourage these firms to engage in research and development of the products making the product to be better and cheaper. This will benefit the consumers if the firms pass down the cost savings to the consumers as lower prices (E). Government can also collect higher tax revenues from these profit-making firms and use the revenue to benefit the citizens through providing more public and merit goods.

On a macro level, an increase in investment by the pharmaceutical firms will lead to an increase in AD and this will result in a higher economic growth. These large investments also create job opportunities for the locals and it will have a knock-on effect on the economy through the multiplier process. This will benefit the locals and the other industries like retail, banking services, transportation etc.

(Evaluation) Hence, the Indian government needs to consider the benefit and cost of price control. In the event that the cost of lower investment outweighs the benefit of lower price of drugs, it might be better for the Indian government to remove the price

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	control. Instead, the Indian government can provide more targeted help or subsidies to the lower income consumers using the tax revenue collected from the pharmaceutical firms so that they can continue to afford the expensive drugs even without the price control.		
(d)	**(i)**	With reference to Figure 2, compare the change in sales of electric cars from 2010 to 2015 between China and Norway.	**[2]**
	Suggested answer**:** Both China and Norway are experiencing an increase in the sales of electric cars from 2010 to 2015. However, the sales of electric cars for China increase at a faster rate compared to Norway.		
	(ii)	With reference to Figure 3, give a reason for the difference in market share of electric cars in Norway and China in 2015.	**[1]**
	Suggested answer**:** Even though the sales of electric cars for China increase at a faster rate compared to Norway, the sales of non-electric cars for China probably rise even faster resulting in an overall small market share. **or** Even though the sales of electric cars for China increase at a faster rate compared to Norway, the number of non-electric cars for China is much higher than Norway which explains the small market share in China.		
	(iii)	To what extent is the change in sales in electric cars from 2011 and 2015 in China and Norway due to price factor.	**[6]**
	Suggested answer**:** From 2011 to 2015, the sales in electric cars are rising. This may be due to price and non-price factors. Price factor Given the high subsidies to the producers of electric cars, the firms are able to produce more at a given price and hence supply increases and shifts to the right. This will result in a fall in price. Hence a fall in price will lead to rise in quantity demanded for electric cars and that explains the rise in the sales of electric cars in China and Norway. [3] or Non-price factors However, the rise in the sales of electric cars may be due to non-price factors like income. With a higher economic growth in China, there will be a rise in income and hence citizens will have a higher purchasing power to buy luxury goods like electric car. In addition, “infrastructure investment also aims to boost electric car ownership. Beijing plans to install more than 400,000 charging points by 2020” shows that the consumers are changing their taste and preferences and are more willing to buy electric cars if they find it convenient to recharge their electric cars.		

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	In Norway, as citizens are more educated and are more concerned with environmental issues, the change in taste and preferences causes them to buy electric cars instead of non-electric cars and hence a rise in the sales of electric cars. Given the evidence in the extract, the rise in the sales of electric cars is likely due to a combination of both price and non-price factors.	
(e)	Using evidence from the case study and/or your own knowledge, assess whether the price mechanism will always allocate scarce resources in the most efficient manner for all goods and services in a market economy.	**[12]**

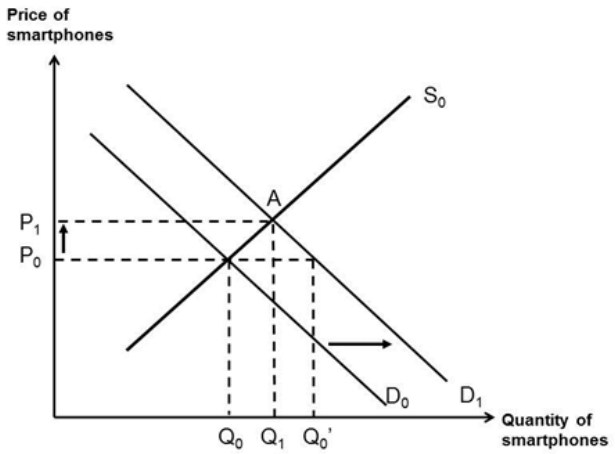
All societies face the problem of scarcity where there are limited resources (land, capital, labour and entrepreneurship) available to satisfy unlimited wants.

Price mechanism uses the changes in demand and supply to determine price. Demand is the amount of good or service that consumers are willing and able to pay over a given period of time, ceteris paribus. Supply is the amount of good or service that producers are willing and able to produce over a given period of time, ceteris paribus.

<u>Price mechanism will allocate resources in the most efficient manner for most goods and services</u>

Using demand and supply, the price mechanism serves as a signal to society to decide what to produce, how much to produce and for whom to produce in order to allocate scarce resources.

Since consumers and producers are rational decision makers, they are driven by their self-interest. Consumers aims to maximize their own welfare by ensuring that the marginal cost of paying for the good is equal to the marginal benefit they get from consuming the good. Producers aim to maximize their profit by ensuring that the marginal revenue is equal to the marginal cost of producing the last unit of good. Based on the self-interest of consumers and producers, the price mechanism will ensure that the quantity demanded of a good will always be equal to the quantity supplied, hence maximising society welfare which is made up of consumer and producer surplus leading to efficient allocation of resources.



Referring to the figure above, when there is an increase in the demand for a good such as smartphones from D_0 to D_1 , this will cause a shortage of smartphones of Q_0Q_0' at the original price P_0. As a result, there will be an upward pressure in price. As consumers bid up the prices, quantity demanded will fall. As price increases,

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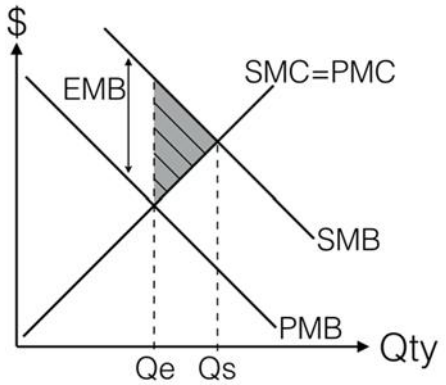
producers will be willing to increase quantity supplied as they will be able to earn a higher profit if they increase output for the production of smartphones. This process will continue on until a new equilibrium price P_1 is achieved where quantity demanded for the smartphones is equal to quantity supplied of smartphones at Q_1.

Therefore, price mechanism will allocate scarce resources in the most efficient manner for most of the goods and services in a market economy.

<u>Price mechanism will not always allocate resources in the most efficient manner in the presence of market failures</u>

However, this is only true when the goods do not exhibit externalities or the goods are not public goods which exhibit non-rivalry and non-excludability. For such goods, the price mechanism will fail to allocate resources efficiently and hence government intervention may be needed.

In the case material, where pharmaceutical drugs are considered as a merit good that yields positive externalities, the market may fail to be allocative efficient and underprovide such goods.



With reference to the figure above, pharmaceutical drugs not only benefit the person consuming it but also third parties such as their employers who now enjoyed the external benefits of having a more productive worker. Hence the social marginal benefits (SMB) is higher than the private marginal benefits (PMB). However, price mechanism only considers PMB and PMC and hence only Qe of pharmaceutical drugs will be provided in the market whereas the socially optimal level occurs at Qs where SMB is equal to SMC (social marginal cost). Hence, there is an under-provision of pharmaceutical drugs in the market of QeQs leading to welfare loss as shown by the shaded area and an inefficient allocation of resources in the market.

Thus, government intervention is needed when the market fails to be efficient due to the presence of positive externalities. This can take the form of subsidies and regulation. For example, in the market for electric cars, subsidies is used to lower the cost of producing electric cars hence increasing the supply of electric cars and lowering the price. This will encourage more consumers to buy electric cars instead of non-electric cars hence reducing pollution caused by the use of non-electric cars.

<u>Evaluation</u>

In conclusion, price mechanism may not always allocate scarce resources in the most efficient manner for all goods and services in a market economy due to market failures caused by presence of externalities. Hence, government intervention is needed to ensure an efficient allocation of resources.

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	However, government intervention will also lead to inefficient allocation of resources. Government does not have perfect information and may not know how much to subsidy. Over-subsidy can lead to over-production of a good resulting in an inefficient allocation of resources. Government may also have to incur an opportunity cost by cutting down on spending on other markets (e.g. education) leading to inefficient allocation in other markets. Hence, it is important for the government to do a cost-benefit analysis for its intervention. Government should only intervene when the increase in social benefit outweighs the social benefit. Thus, whether the price mechanism will always allocate scarce resources in the most efficient manner for all goods and services in a market economy depends on the extent of the market failure and whether government can do a better job in correcting the market failure.

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Question 2: The tale of BRICS

(a)		Using Table 4, compare the growth performance of China and India with that of Brazil and Russia.	**[2]**
		Suggested Answer: China and India have a positive growth in GDP throughout the entire period, while Brazil and Russia experienced negative growth from 2015-2016.China and India also have higher growth rates throughout the entire period.	
(b)		With reference to Extract 7,	
	(i)	Extract 7 states that "the fall in commodity prices of recent years has done significant damage in all three countries." Explain how this has impacted the macroeconomic objectives of Brazil, Russia and South Africa.	**[4]**
		Suggested Answer: Brazil, Russia and South Africa are commodity exporters. As such, when the prices of commodities fell, the total export revenue will be affected. Since the demand for commodities is likely to be price inelastic due to the lack of close substitutes, the fall in price leads to a less than proportionate increase in quantity demanded. Hence, total export revenue falls. This leads to a fall in net exports and aggregate demand, ceteris paribus. Real GDP falls and economic growth suffers. Furthermore, the fall in output also means that firms' demand for labour falls, leading to higher unemployment.	
	(ii)	To what extent does the data in Table 4 support the suggestion that the fall in commodity prices in 2015 to 2016 has done significant damage in Brazil, Russia and South Africa? Justify your answer.	**[3]**
		Suggested Answer: The data in Table 4 supports the suggestion that a fall in commodity prices would have a significant damage on the 3 countries' economic growth. This is seen in the data for Brazil and Russia that they are suffering from negative growth rates in 2015 and 2016 when commodity prices fell. South Africa also suffered a fall in GDP growth rates from 2015 to 2016 when commodity prices fell in the same period. However, the data might not fully support the suggestion as South Africa was still able to maintain a positive growth rate throughout the entire period despite the fall in commodity prices, indicating that it might not have experienced significant damage unlike that of Brazil and Russia.	
	(iii)	Using a diagram, explain how 'China's economy has slowed as higher wages make manufacturing more expensive.'	**[4]**
		Suggested Answer: Higher wages will lead to a rise in cost of production (COP). This leads to an upwards shift in Aggregate Supply (AS) from AS1 to AS2, leading to a rise in General Price Level (GPL) from P1 to P2.	

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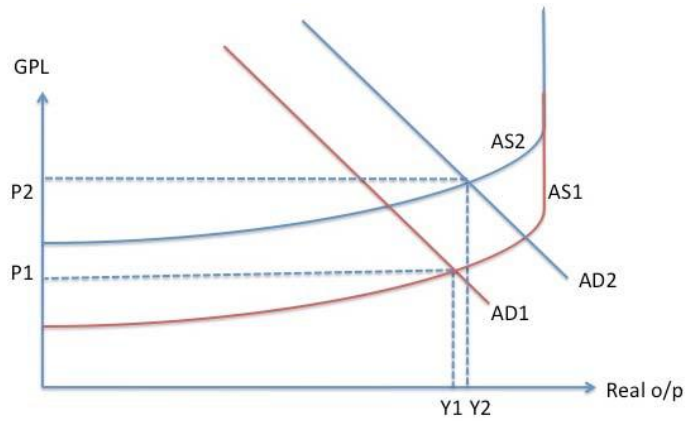

However, Table 4 shows that China's economy is still growing, as such, this indicates that the Aggregate Demand (AD) must be rising at a faster rate. Thus, real GDP still increases, but the fall in AS slows down the rate of growth.

(c)	**(i)**	Using Extract 8 explain how automation could contribute to a rise in structural unemployment in the labour market and rising inequality.	**[5]**
		<u>Suggested Answer:</u> Automation would indicate the greater use of machines in the workplace and a lower demand for labour, especially low skilled labour. Since automation is likely to affect labour-intensive industries which tend to replace the low-skilled labour in the firm, these workers might not have the ability to find new jobs easily as the economy progresses towards knowledge based industries where high skilled workers are needed in the economy. This thus cause a mismatch of skill and thus a rise in structural unemployment. As automation replace low skilled workers in the low end manufacturing industries, supply of low skilled workers would increase thus reducing the market wage rates for these workers. At the same time, there will be an increase in demand for high skilled workers to maintain machinery due to the rise in automation. Thus this would increase the wages for high skilled workers. As such, automation could lead to a widening of the income gap between the low skilled and high skilled workers.	
	(ii)	In light of the negative effects brought about by automation, World Bank President Jim Yong Kim expresses the importance to increase investments in people necessary to build a workforce that can be competitive in the economy of the future. Comment on whether such a policy would be effective in reducing the negative effects brought about by automation.	**[6]**
		<u>Suggested Answer:</u> As stated in Extract 8, a rise in automation could bring about negative effects such as structural unemployment and rising income inequality. As such, investment in people could be in the form of supply-side policies such as education and training would help to reduce the effects of structural unemployment and income inequality.	

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		Investment in people through education and retraining could allow low-skilled workers to acquire new skills which would enable them to take up jobs in the sunrise industries, thereby reducing structural unemployment. As these workers would gain higher skills through education and retraining, they are also able to bargain for higher wages at their new workplaces. This reduces the income inequality between the high skilled workers and low skilled workers in the economy. However, this policy might not be effective as it takes time to educate and train workers. Moreover, the success of the policy also depends on the receptiveness of workers. Less educated or older workers might be less receptive to education and re-training, which would render such a policy ineffective in reducing structural unemployment or income inequality. Conclusion: Overall, whether such a policy is effective would depend on the receptiveness of the people as well as the government's ability to implement it for the low-income and structurally unemployed.	
(d)		Extract 9 highlights the factors contributing to Brazil's recession. Evaluate the policy options available to the Brazilian government to revive its economy.	**[9]**
		<u>Suggested Answer:</u> Brazil is suffering from recession due to falling export revenue and fall in Investments. The large government debt is also causing firms to lose confidence in the government which thereby causes firms to withdraw their investments in Brazil. In order to revive the economy, the Brazilian government can adopt expansionary monetary policy together with austerity measures. This is so that while austerity measures may induce contractionary effects on the economy to cure the problem of public debt, the expansionary monetary policy can stimulate growth and revive the Brazil economy. However, there are several factors that might limit the effectiveness of these policies. The Brazilian government can implement austerity measures such as a rise of taxes and/or a cut in government expenditure to reduce the government debt. When taxes such as income tax or corporate taxes increase, government would be able to collect greater tax revenue. With a cut of government expenditure at the same time, the government debt would reduce. As stated in extract 9 that the high debt levels worsen investor's confidence, such an austerity measure would restore the confidence that firms would have on Brazil government. Thus, firms are likely to increase investments in Brazil thus stimulating AD to rise → real GDP increases → revives the Brazilian economy. However, there are limitations to the use of austerity measures to reduce government debt in to restore confidence in the economy. As stated in extract 9 that as much of Brazil's recovery depends on the whether the government's reforms in public spending are successful, it would infer that it is difficult for Brazil government to cut its budget as government spending would have been planned in advance and are often essential spending such as healthcare and education. To cut government spending, it would	

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		often have to go through parliamentary debates and discussion which may take a long time to come to a decision. Thus by the time decisions were made, firms may have lost their confidence with the economy and any austerity measures would have been useless in restoring confidence back to the economy. Furthermore, any cuts to government spending or rise in taxes would have a contractionary effect on the economy. Given that the economy is already in recession, the contractionary effect of an austerity measure may further sink the economy into deeper recession. Thus, there is a need for the Brazil government to complement the use of austerity measures with the expansionary MP to prevent such situation from happening. The Brazilian government can also implement expansionary MP to stimulate growth in the country. By reducing i/r → COB falls → consumers are more willing to borrow and less willing to save → increase C on big ticket items. Firms are more willing to borrow as investments are more deemed more profitable with the same expected returns → increase in I. With C and I increasing → AD increases → real GDP increases → revives the economy. However, there are limitations to the use of expansionary MP. Pessimism in firms may cause firms not to respond to lower i/r as they are not confident in the recovery of the economy. Thus, firms may deem new investments to be unprofitable and thus I may not increase → expansionary MP may not be effective in reviving the economy. Overall, there is some evidence in Extract 9 which suggests that EMP might be effective in reviving the economy. As i/r are falling by large extent, C and I might rise as the effect of a large fall in COB outweighs the effect of pessimism by firms. Furthermore, if the reforms in government spending are done successfully, it might boost the confidence of firms in the Brazilian government managing its economy. Thus FDIs might remain in Brazil and firms might even increase their I due to the confidence of the government. In conclusion, for recovery of Brazil's economy to happen, recovery of global demand for commodities must take place as Brazil is still highly reliant on X for growth. As expansionary MP only boosts C and I, it might not be as effective in stimulating recovery as these components of AD might only hold a small percentage of Brazil's GDP. *Note:* 1. *Analysis on LT policies such as SS side policies or trade policies could also gain credit but are poor application to the context as the context hints the use of ST policies to achieve recovery.*	
(e)		"Data on GDP growth rates are no longer relevant in measuring the well-being of its citizens." Discuss this view.	**[12]**
		<u>Suggested answers:</u> GDP growth rates measure the percentage change in value of final output produced within the geographical boundary of the country, regardless of factor ownership before depreciation in a year and after excluding the effects of inflation. While it is a useful data in assessing the change in	

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		material aspect of standard of living, it is limited in assessing the changes in the non-material aspect. Thus, it is important for countries to complement the use of GDP growth rate data with other data such as HDI so as to have a holistic view in assessing the overall well-being of its citizens. When GDP growth rates are positive, it implies that a country's real GDP has increased. The increase in real GDP means higher production of goods and services, which means more goods and services are available for consumption in the country. Furthermore, if the population growth is slower than real GDP growth, it would mean that real GDP per capita has increased. With higher real income per person, purchasing power increases. Each person can purchase more goods and services. Hence, material SOL will increase, indicating an improvement in the well-being of citizens. However, GDP growth rates are limited in measuring the non-material aspect of SOL. Since positive GDP growth rates imply higher levels of production, it could mean that air quality could have worsened due to the increase in emissions arising from production of goods and services. Thus, while the citizens could enjoy higher purchasing power and greater quantity of goods and services available, the worsening of air quality could lead to poorer health and higher healthcare costs. Hence, data on GDP growth rates are limited in measuring the non-material aspect of SOL for its citizens. Data on air quality or pollution (e.g. Pollution Standard Index) should be complemented with the use of data on GDP growth rates. This is evident in the case of India as even though it achieves outstanding GDP growth rates as shown in Table 1, it was at the expense of the environment and quality of life. Furthermore, GDP growth rates are limited in measuring the material aspect of SOL of its citizens as the data fails to take into account of factor incomes earned by residents overseas and non-residents in the domestic economy. Factor income includes wages, interest, profits and rent earned in this country by foreign residents and remitted abroad as well as incomes earned by domestic residents coming from abroad. As FDIs residing in the economy will remit part of their incomes back to the parent company in their home country, it would mean that these incomes are not passed down to the residents of the economy through wages or bonuses. Furthermore, residents residing abroad would remit incomes back to the home country. This would mean higher incomes for domestic households, enabling them to enjoy higher material SOL. As data on factor income is important in measuring the well-being of the citizens in the country, data on GDP growth rates is limited in representing the well-being of the citizens. Due to the limitations of data on GDP growth rates, countries might want to consider using Human Development Index (HDI) as a better indicator in measuring the well-being of its citizens. The HDI is a composite statistic of life expectancy, education and real GNI per capita, which are used to rank countries into four tiers of human development. Together, it accounts for both the material and non-material aspects of welfare as thus is a better representation of the well-being of the citizens in the country. However, there are limitations of HDI data as it only looks at one indicator for each aspect of economic, social and demographic aspects which does not provide a complete representation of well-being of the citizens in a country.	

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		Furthermore, as the calculation of HDI requires the use of multiple data sources to formulate, accuracy of data sources is often questionable and it often take a very long time for HDI data to be made available. In conclusion, while data on GDP growth rates has its limitations in measuring the well-being of its citizens, it is an indicator that is accessible and easily available. Thus, data on GDP growth rates are only relevant in measuring the well-being of its citizens when complemented with other data such as PSI, factor income from abroad, literacy rates and life expectancy as it would give a more holistic picture on both the material and non-materials aspect of SOL of its citizens.	

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RIVER VALLEY HIGH SCHOOL
YEAR 6 Preliminary Examination
in preparation for General Certificate of Education Advanced Level
Higher 1

ECONOMICS 8823/01

Paper 1 **11 September 2018**

3 hours

Additional Materials: Answer Paper

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.

Answer **all** questions.

You are required to hand in your answers for Question 1 and 2 separately.
At the end of the examination, fasten your work for Question 1 and 2 securely.

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

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

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Answer **all** questions.

Question 1: Issues in Japan

Table 1: Selected statistics for Japan

	2012	2013	2014	2015	2016
Real GDP growth (%)	1.5	2	0.4	1.4	0.9
Life expectancy at birth, (years)	83.1	83.3	83.6	83.8	84.0

Source: World Bank

Table 2: Price elasticity of demand (PED) of Japanese consumers for chilled beef imported from different countries

Australia	(-) 0.92
United States	(-) 1.13
Rest of the World	(-) 1.18

Source: Economic Research Service/USDA

Extract 1: Changes in the Japanese diet

In the last 60 years, almost every corner of the globe has experienced a change in lifestyle. One such example is the significant shift towards diets containing more meat and animal products. This has been branded as 'diet westernisation' and is occurring throughout the world. Such a change in food habits has resulted not just in massive increases in livestock production globally, but has also contributed to an 'obesity epidemic'. Obesity has resulted in an increase in the number of people seeking treatment for a range of health problems such as heart disease and diabetes and has affected productivity at work.

Since 1961, the production and consumption of many types of meat have increased significantly. Japan is the nation that has experienced the most dramatic shift in the diets of its citizens during the past decades from the consumption of fish to meat. This is due to a number of factors like rising incomes, changes in food supply chains (e.g. increase in the number of supermarkets and convenience stores) and also the Westernisation of Japanese diets.

This shift in the diets has resulted in Japan having to increase its import of beef consumed and cattle feed to meet its domestic beef production. And this low self-sufficiency has become a major concern for the Japanese government. The notion of self-sufficiency (a self-sufficient country is able to produce everything it needs by itself) has been featured as a top policy objective and the Japanese government is attempting to implement policies that aim to increase food self-sufficiency above the relatively low current rate of 40% (compared to other developed countries).

Therefore, Japan's changing diets and the associated food self-sufficiency challenge are not only critical for Japan but also for countries like Australia, Brazil and the United States (US). These countries are shouldering the environmental burden of supplying directly and indirectly to meet Japan's growing appetite for meat.

Source: Our World United Nations University

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Extract 2: The market for beef Imports into Japan

With its large population and limited agricultural land, Japan has consistently been one of the world's largest importers of food products, including beef. The primary sources for these imports are the US and Australia, which together represented approximately 90% of Japan's 2014 beef imports in terms of value.

Japan's beef consumption has exceeded 1 million tonnes every year since 1989. However, declining population and weak economic growth are expected to constrain Japan's demand for beef in the future. Japan's population growth has been negative every year since 2009. However, this may be offset by the fact that Japan's population is ageing and typically meat consumption increases as its population ages. Recent research suggests that demand for meat per person may increase in future counteracting the impact of population decline in Japan.

There is tendency for Japanese consumers to import more Australian beef products when US beef prices rise and vice versa. The results show a particularly strong competitive relationship for chilled beef across all sources, where a price increase in beef from one source leads to increased imports from other two sources, ceteris paribus.

In 2014, the Australian and Japanese governments signed the Japan-Australia Economic Partnership Agreement (JAEPA), which allows Australia to export[1] more beef into Japan.

Source: USDA, January 2016

Extract 3: Japan questions working habits

Long working hours and work culture are issues that the Japanese workforce and policymakers have to grapple with in Japan's quest for renewed economic growth.

A young woman newly recruited late last year by a powerful advertising agency in Tokyo, tragically committed suicide. Her death, linked to overwork, has given rise to a debate among the Japanese about their work habits.

A particular object of scrutiny is the long hours workers put in at the office, never daring to be the first to leave, or to knock off before their immediate bosses. More than a fifth of Japanese companies surveyed in a government study acknowledged that some staff work more than 80 hours of overtime a month, a level officials consider a threat to health.

Source: Channel News Asia, 26 July 2017

[1] Exports are the goods and services produced in one country and purchased by citizens of another country.

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Extract 4: Tax meat to cut emissions and save lives

Taxes on meat would lead to huge and vital cuts in carbon emissions as well as saving half a million lives a year via healthier diets.

Food production causes a quarter of all the greenhouse gas emissions that are driving global warming, largely from the raising of cattle and other livestock. These emissions are increasing as people around the world become richer and eat more meat.

The research, published in the journal Nature Climate Change, recommended a significant 40% tax on average on beef across the world. This is because beef has a heavy footprint, due to the deforestation and methane emissions associated with cattle and the grains they are fed.

Economists also examined the different tax regimes and found the optimum arrangement in terms of both emissions and health was to combine the taxes on production of meat with subsidies for production of healthy foods, such as fruit and vegetables.

Source: The Guardian, 7 November 2016

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Questions

(a) With reference to Table 2, state what is meant by the value of PED for chilled beef imported from the United States being -1.13. [1]

(b) Suppose the price of imported chilled beef rises. Explain why the total spending by Japanese consumers on imported chilled beef from Australia and the Rest of the World might differ. [3]

(c) Using Extract 1, explain **one** demand factor and **one** supply factor that have affected the market for beef in Japan and with the aid of a diagram, comment on the change in the price and quantity of beef. [8]

(d) Explain the impact of the Japan-Australia Economic Partnership Agreement (JAEPA) on the market for chilled beef from United States. [3]

(e) Extract 1 states that countries like Australia are 'shouldering the environmental burden of supplying directly and indirectly to meet Japan's growing appetite for meat'. Explain why this could be an example of negative externality. [4]

(f) Explain, using a diagram, why consumers are likely to bear a greater burden if a tax is to be placed on meat in Japan. [4]

(g) Discuss whether the data is sufficient to assess if the standard of living of Japan has increased over time. [8]

(h) (i) With reference to Extract 1, identify and explain **one** negative externality arising from the 'diet Westernisation' in Japan. [2]

(ii) Explain the policies that could tackle the market failure caused by diet westernisation and discuss whether these policies are helpful in raising Japan's self-sufficiency. [12]

[Total: 45]

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Question 2: Effects of Trumponomics

Table 3: Selected macroeconomic indicators: United States

	2013	2014	2015	2016
Real GDP growth rate (%)	1.7	2.6	2.9	1.5
Unemployment rate (%)	7.4	6.2	5.3	4.9

Table 4: Selected macroeconomic indicators: European Union

	2013	2014	2015	2016
Real GDP growth rate (%)	0.3	1.7	2.3	2.4
Unemployment rate (%)	10.8	10.2	9.4	8.5

Source: World Bank

Extract 5: Trump's macroeconomic gamble

'Trumponomics' equals infrastructure and defence spending, tax cuts and deregulation. While the big surge of spending on infrastructure is a positive policy to bring to the table, to combine it with tax cuts and deregulation is dangerous—especially at a time when the US is already close to full employment.

According to the Tax Policy Center, Trump's personal and business tax cuts would lead to an increase in the federal debt of US$7.2 trillion over the first decade.

Unlocking investment is the key to unlocking a strong cycle of domestic growth, as the IMF has argued. However, it is evident that Trump's tax plans would above all benefit the very rich. Lowering taxes on the ultra-rich, instead of increasing them, will have harmful social and political effects while letting public finances explode.

Higher deficit-financed public spending would put upward pressure on economic activity, which would prompt the US Federal Reserve to start tightening monetary policy faster than it intended to before the election.

In a recent speech on Capitol Hill, Janet Yellen, chair of the Federal Reserve, cautioned lawmakers that if they spend too much on infrastructure and run up the debt via tax cuts, there would not be enough fiscal space should an adverse shock to the economy require fiscal stimulus.

The lack of redistribution of GDP growth is also going to be a key problem. Domestic tax and transfer plans have not been capable of adjusting market income to a more evenly distributed household disposable income. This becomes even more important at a time when technology, automation, and the digital divide are expected to disrupt labour markets.

Source: Australian Institute of International Affairs, 16 January 2017

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Extract 6: Global market impact of Trump election

The biggest global market impact of the Trump election to date is the flood of capital into the US in anticipation of higher returns from fiscal stimulus and monetary tightening.

This has led to depreciation of the euro, yen, yuan, pound and emerging market currencies, with the ringgit and rupiah among the hardest hit. The Sing dollar has also fallen against the US dollar, but going forward it could strengthen against other Asian currencies. The increased burden of US dollar-denominated debt and rising interest rates could precipitate a financial crisis in some countries, in which case the Sing dollar would become a "safe haven" and strengthen.

Source: The Straits Times, 30 Dec 2016

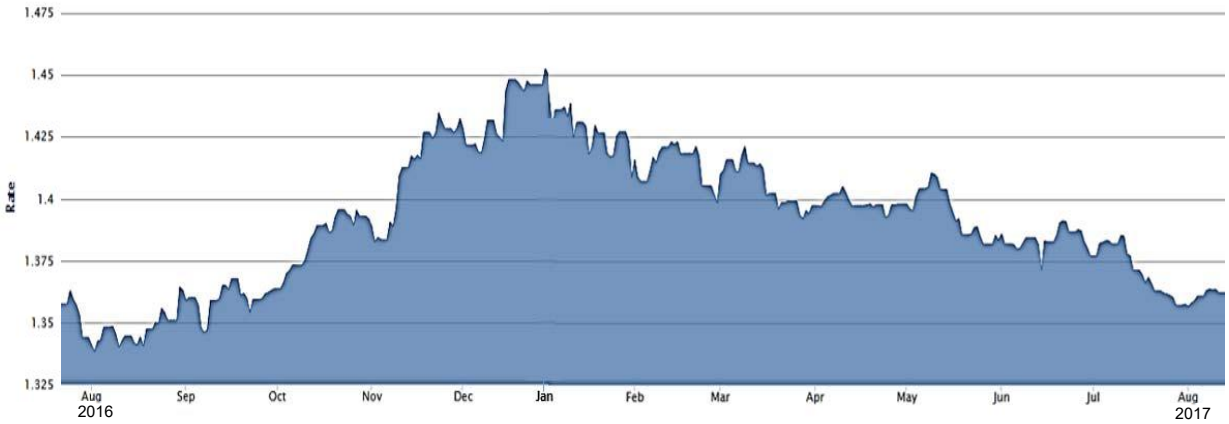
Extract 7: Trump to unveil $1 trillion infrastructure plan in 2017

U.S. Transportation Secretary Elaine Chao said the Trump administration would unveil a $1 trillion infrastructure plan later this year, but she did not offer details of funding for projects. Chao said at an event at the department's headquarters that the infrastructure initiative would include "a strategic, targeted program of investment valued at $1 trillion over 10 years. The proposal will cover more than transportation infrastructure, it will include energy, water and potentially broadband and veterans hospitals as well."

Chao's comments were the most detailed timetable from the administration about its plans to unveil a plan to modernize U.S. roads, bridges, airports, electrical grid and water systems. Chao said the administration plans to offer incentives for public-private partnerships rather than simply fund improvements.

Source: CNBC.com, 30 March 2017

Figure 1: Value of SGD (average rate per USD)



Source: Pound Sterling Live

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Extract 8: MAS maintains neutral stance for Sing dollar

Singapore's central bank said on Friday that it will maintain neutral stance for the Sing dollar as the city state's economic growth slows and inflation remains low. This mean that MAS is removing the modest and gradual appreciation path of the Singapore dollar Nominal Effective Exchange Rate (S$NEER) policy band that was in place. The width of the policy band and the level at which it is centred will therefore be unchanged.

Growth in the Singapore economy has weakened in recent months, said MAS, and is not expected to pick up significantly in 2017. Core inflation, a key policy consideration for MAS, is expected to rise only gradually next year. Over the medium term, core inflation is still expected to trend towards but average slightly below 2 per cent.

Source: The Straits Times, 14 October 2016

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Questions

(a) State **one** factor, other than the number of unemployed workers, that could cause the unemployment rate to change over time. [1]

(b) **(i)** State and explain the relationship between real GDP growth and unemployment rate as observed in Table 4. [2]

(ii) With reference to Table 3, explain how your above explanation could still be valid for the United States in 2016. [2]

(c) With the help of Extract 5, explain why economic growth could be positively related to the unemployment rate. [3]

(d) According to Extract 9, MAS would maintain the neutral stance for the Singapore dollar.

(i) State what is meant by 'maintain the neutral stance for the Singapore dollar'. [1]

(ii) With reference to Figure 1, how does the value of the Singapore dollar in December 2016 compare to its value in August 2016? [1]

(iii) Explain how your answers in (ii) could be consistent with MAS's neutral policy stance. [2]

(e) Explain how an increase in the federal debt might affect the future standard of living in the United States. [5]

(f) **(i)** Using an AD/AS diagram, explain why higher deficit-financed public spending could prompt the US Federal Reserve to start tightening monetary policy. [3]

(ii) Explain how tightening monetary policy is a response of the US Federal Reserve given the higher deficit-financed public spending and comment on its effectiveness. [9]

(g) Extract 6 stated Trump election to date has led to the depreciation of the euro, yen, yuan, pound and emerging market currencies.

Using a diagram, explain how Trump election has led to the depreciation of any of the above currencies. [4]

(h) Extract 5 suggests that combining big surge of spending on infrastructure with tax cuts and deregulation is dangerous. Explain the alternative viewpoint and assess whether doing do is indeed dangerous. [12]

[Total: 45]

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2018 RVHS Year 6 Prelims H1 Case Study Suggested Answers

Question 1

(a) With reference to Table 2, state what is meant by the value of PED for chilled beef imported from the United States being -1.13. [1]

A 1% increase in price of beef will lead to a 1.13% fall in quantity demanded for chilled beef imported from the US.

(b) Suppose the price of imported chilled beef rises. Explain why the total spending by Japanese consumers on imported chilled beef from Australia and the Rest of the World might differ. [3]

Given the PED values, the demand for imported chilled beef from Australia is price inelastic while the demand for imported chilled beef from the rest of the world is price elastic.

As such, an increase in the price of imported chilled beef from Australia will lead to a less than proportionate fall in quantity demanded of chilled beef from Australia while an increase in the price of imported chilled beef from the Rest of the World will lead to a more than proportionate fall in quantity demanded of chilled beef from the Rest of the World.

Since total spending by consumers is given by the product of price and quantity, consumer spending for chilled beef from Australia increases while that from the Rest of the World decreases.

(c) Using Extract 1, explain one demand factor and one supply factor that have affected the market for beef in Japan and comment on, with the aid of a diagram, the change in the price and quantity of beef. [8]

Change in DD

<u>Change in income</u>

Given that there is rising income in Japan as mentioned in Extract 1. This will increase the purchasing power of consumers and lead to an increase in demand for normal goods such as beef which results in a rightward shift in demand curve from D_0 to D_1.

OR

<u>Change in taste and preferences:</u>

There has been a change in taste and preferences for meat products in Japan due to the shift in the diet of its citizens towards more meat products. This has been branded “diet westernisation” mentioned in Extract 1.

This will lead to an increase in the demand for beef which results in a rightward shift in demand curve from D_0 to D_1.

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Change in SS

<u>No. of sellers</u>

According to Extract 1, there is an increase in number of beef sellers due to the increase in the number of super markets and convenience stores in Japan which leads to an increase in supply of beef. This results in a rightward shift in supply curve from S_0 to S_1.

<u>Comment on the change in the price and quantity of beef.</u>

An increase in demand combined with the increase in supply causes an increase in equilibrium quantity from Q_0 to Q_1 while the change in equilibrium price of beef remains indeterminate as it depends on the relative extent of the shifts in demand and supply.

Given that Japan has experienced the most dramatic shift in the diet of its citizen suggest that a significant proportion of the Japanese population has changed their diet in favour of meat hence significantly increasing the demand for meat over time. Hence the extent of increase in supply is less than the increase in demand for beef, leading to an increase in beef prices from P_0 to P_1.
OR
Given that Japan's population growth has been negative every year since 2009, this would decrease the number of consumers of beef and cause the demand for beef to decrease. This factor would mitigate the increase in demand for beef due to the change in taste and preference/ change in income (depending on what student wrote). Hence the increase in demand is likely to be less than the increase in supply, leading a decrease in the price of beef from P_0 to P_1.

Other answers also acceptable
Signing of the Japan-Australia Economic Partnership Agreement (JAEPA)

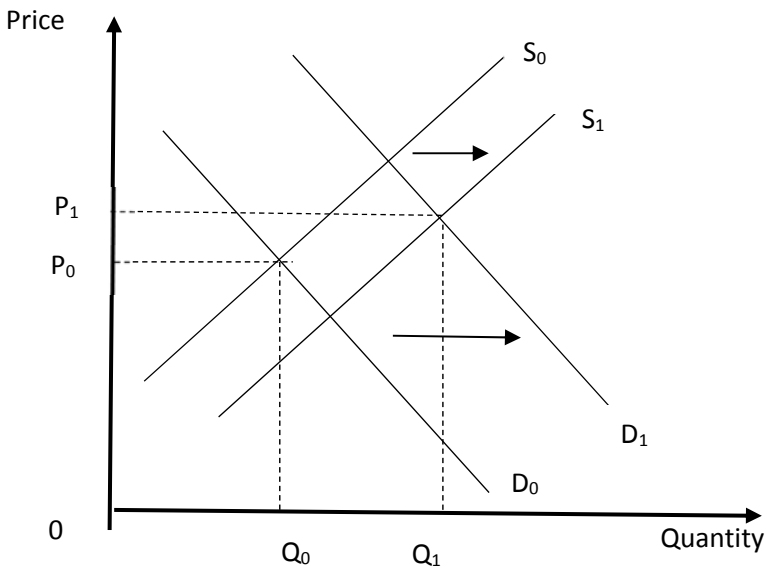

Figure 1: Market for beef

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(d) Explain the impact of the Japan-Australia Economic Partnership Agreement (JAEPA) on the market for chilled beef from United States. [3]

Signing the JAEPA allows Australia to export more beef to Japan, this increase in supply of Australian beef in Japan will lead to a fall in price of Australian beef in Japan and an increase in quantity demanded for Australian beef.

Since Australian beef and chilled beef from United States are substitutes in consumption, this will lead to a fall in demand for chilled beef from United States. With a fall in demand, there will be a fall in equilibrium price and quantity in the market for chilled beef from United States.

(e) Extract 1 states that countries like Australia are 'shouldering the environmental burden of supplying directly and indirectly to meet Japan's growing appetite for meat'. Explain why this could be an example of negative externality. [4]

Direct – Intensive livestock rearing is a major source of greenhouse gases because of the methane produced by the cattle, which causes global warming.

Indirect – As mentioned in Extract 1, Japan imports the bulk of the cattle feed used for its domestic beef production. As such, forests in Australia have to be cleared to meet the demand for cattle feed. With fewer forests, there will now be a larger amount of greenhouse gases entering the atmosphere, thereby increasing the pace and severity of global warming.

As such, third parties who are people living in countries like Australia, especially those staying nearer to farms, who are not involved in the production or consumption of meat particularly beef which are due for exports to Japan, are the ones bearing the external costs illustrated above i.e. global warming and they are not being compensated for the external costs incurred.

(f) Explain, using a diagram, why consumers are likely to bear a greater burden if a tax is to be placed on meat in Japan. [4]

If a tax were to be placed on meat in Japan, it is an indirect tax. As such, whether consumers or producers bear a gr S_1 burden of the tax depends on relative elasticities of demand and supply.

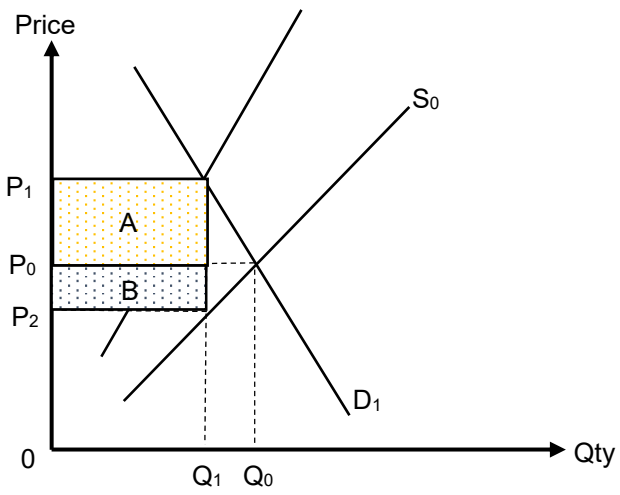

Figure 2 Relative price elasticities and tax incidence

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Given the shift in diets of Japanese towards meat during the past decades, it is likely that the demand for meat in Japan is price inelastic because of the lack of substitutes. Whereas the supply of meat in Japan is relatively more price elastic as Japan is able to import from various countries.

When an ad valorem tax, the supply shifts from S_0 to S_0+t. Due to the tax, equilibrium quantity falls to Q_1. Consumers bear P_0P_1 of the tax per unit while producers bear P_0P_2 of the tax per unit. In this case, where demand is likely to be relatively more price inelastic than supply consumers are less responsive to prices and as such, they bear a greater tax burden.

(g) Discuss whether the data is sufficient to assess if the standard of living of Japan has increased over time. [8]

Thesis: The data is sufficient to assess the standard of living of Japan over time

Real GDP and population growth rate data
Real GDP takes inflation into account by valuing the prices of goods and services produced in the country using base year prices. An increase in real GDP reflects an increase in goods and services produced and this leads to higher real income. With an increase in real income and higher purchasing power, the ability to consume material goods and services increases. In Japan's case, she experienced real GDP growth from 2012 to 2016, which represents an increase in material well-being.

Moreover, in order to have a better measure of the material aspect of standard of living (SOL) of a typical individual in a country over time, the population size has to be considered. According to Extract 2, population growth rate in Japan has been negative every year since 2009. Since there is an increase in real GDP while size of population has decreased, the real GDP per capita would have increased. Hence the material SOL of an average citizen in Japan would have increased over time.

Life expectancy
Life expectancy at birth refers to the average number of years that a new-born may expect to live for. It can be used as a proxy for the quality and accessibility of healthcare in a country. The life expectancy in Japan has increased over time from 83.1 to 84 years from 2012 to 2016. This suggests that individuals in these countries have access to more timely and high quality healthcare indicating an increase in the non-material SOL in Japan.

Working hours
The increase in real GDP may have been a result of people having to work for longer hours and this would worsen non-material SOL of the country. In Extract 3, it mentioned that a fifth of Japanese companies surveyed acknowledged that some staff work more than 80 hours of overtime. This might result in detrimental effects on the health of the citizens. In addition, with longer working hours, there would be lesser time for leisure. Hence, the long working hours lowers the non-material SOL of the Japanese.

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Anti-Thesis: The data is not sufficient to assess the standard of living of Japan over time

Externalities
The data does not take into account the negative externalities of production that reduce non-material SOL. For example, an increase in production of the economy in heavy industries might bring about polluted air and rivers. These are exacerbated with economic growth. The rise in negative externalities e.g. air pollution can adversely affect the human respiratory and inflammatory systems, hence significantly impacting the non-material well-being of Japanese. Thus, a higher real GDP per capita accompanied by more negative externalities generated may not necessarily mean that individuals are better off in the non-material aspect of standard of living. As such, other indictors like the air quality index would be required.

Income inequity
The data does not take into account the income distribution in Japan. If the effects of the increase in real GDP is experienced by only a small proportion of the population, the rest of the population may not experience higher material SOL. Hence despite achieving a higher real GDP per capita, the material standard of living of an average Japanese would be overstated if there is rising income inequality in Japan.

Hence, other indicators like the Gini Coefficient would be required to better assess the material standard of living in Japan over time.

Evaluation/ synthesis:

The data provided is sufficient to assess both the material (e.g. real GDP and population growth rate data) and non-material (e.g. life expectancy and working hours data) aspect of standard of living in Japan despite absence of other indicators.

There could be measurement issues, such as the reduction in the size of the non-monetised sector and the reduction in the size of the underground economy, which makes GDP figures inaccurate..

Level	Description	Marks
L2	A **developed** and **balanced** discussion that considers 2 data given in the case study as well as 1 other data not given in the case study in assessing the SOL of Japan over time.	4-6
L1	A **developed one-sided** response that only considers how the data is sufficient / not sufficient to assess the SOL of Japan over time. OR An **undeveloped** discussion that considers at least 1 data given in the case study and at least 1 data not given in the case study in assessing the SOL of Japan over time.	1-3

In addition, up to a further 2 marks for valid evaluative comment(s) on how adequate the data is to assess the SOL of Japan over time or other factors that need to be considered when interpreting the data.

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(hi) With reference to Extract 1, identify and explain one negative externality arising from the 'diet westernisation' in Japan. [2]

"Diet westernisation" contributes to obesity As one who is obese is likely to seek treatment, this affects the productivity of his co-workers who in this case are the third parties as the co-workers are not being compensated for covering the work of the absentee.

(hii) Explain the policies that could tackle the market failure caused by diet westernisation and discuss whether these policies are consistent with the aim of Japan raising its self-sufficiency. [12]

<u>Why market failure results [3m]</u>

As mentioned in part hi, the consumption of meat gives rise to negative externalities like obesity. Due to the existence of negative externalities, marginal social cost (MSC) is higher than marginal private costs (MPC).

Assuming there are no positive externalities, i.e. MSB=MPB, the market for meat in Japan could be represented in the diagram below.

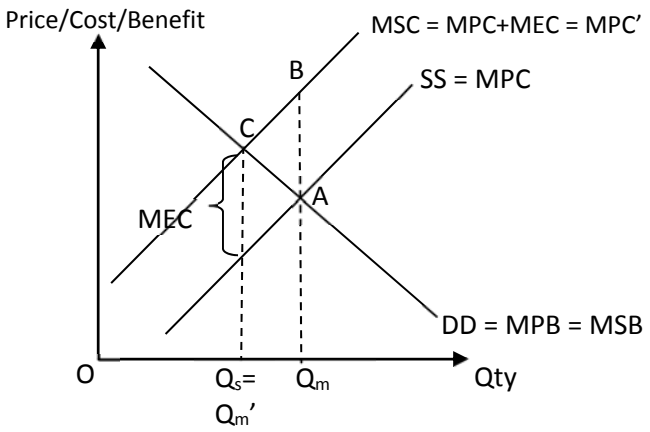

Figure 3: Over-consumption of meat due to negative externalities

With reference to Figure 3,

- Left to the free market, the consumption of meat occurs at Qm, where DD intersects SS (or MPB=MPC). When individuals decide how much to produce or consume, they only take into account their private benefits and costs.
- However, the socially optimal level of output is Qs, given by the intersection of MSB and MSC, since society's welfare is maximised when MSB=MSC.
- Since Qm > Qs, there is over-production/over-consumption of meat. In other words, too much resources are allocated to the market for meat.
- Due to the over-production/over-consumption of meat, the welfare loss to society (i.e. deadweight loss) is given by area ABC.

<u>Policies that help to solve market inefficiencies [3m]</u>

Imposing a tax on meat as mentioned in Extract 4 will increase the MPC of producing meat. If the amount of tax is equal to the amount of MEC at the socially optimum level of output, then this will shift MPC upwards to MPC' so that it coincides with MSC. The new market equilibrium, Qm', where MPB = MPC + tax, now coincides with the

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socially equilibrium quantity, Qs, where MSB=MSC. Thus, the imposition of tax can help to reduce the deadweight loss.

Extract 4 also mentioned about subsidies can be given for the production of healthy foods like fruits and vegetables. In the case of Japan, fish can also be included as Japan has an advantage in rearing or catching fish for consumption because of its geographical location. Provision of subsidies lower the cost of production and thus, reduces the price of healthy foods in Japan and since healthy foods and meat are substitutes in consumption, this helps to decrease the demand for meat. As MPB falls, Qm moves towards the socially optimum level of output, Qs.

Thesis: How the policies above help to raise Japan's self-sufficiency in food [3m]

Japan may raise its self-sufficiency in food through reducing consumption or increasing its domestic production of food.

Providing subsidies for the production of healthy foods like fruits and vegetables will probably help in the reduction of demand for meat so that Japan can be more self-sufficient in terms of meat. By providing subsidies to producers of healthy foods, this helps to reduce the cost of production of healthy food directly. This lowering of cost of production would incentivise current domestic farmers to expand their scale of production or attract new players into the market, thereby increasing the supply of healthy food and help Japan to be more self-sufficient in terms of healthy foods. The above is based on the assumption that Japan is able to produce healthy foods efficiently and that healthy food and meat are good substitutes in consumption.

Anti-thesis: How the policies above do not help to raise Japan's self-sufficiency in food

By imposing a tax on the production of meat will lead to a decrease in the production of meat as cost of production increases and this will cause the supply of meat to fall, which will reduce Japan's self-sufficiency in terms of meat production. Because of this, Japan might have to import more meat from other countries like Australia or USA.

Synthesis: Evaluate whether the policies help to raise self-sufficiency and what other factors might affect Japan's desire to be self-sufficient [Any two points well-explained – 3m]

The extent to which the policies help to raise self-sufficiency depends on the extent of fall in demand and extent of decrease in supply of meat. If the fall in demand for meat exceeds the fall in supply of meat, then Japan will be self-sufficient, especially together with the increase in supply of healthy foods like vegetables, fruits and fish.

The extent to which self-sufficiency is raised also depends on how well healthy food is a substitute to meat. If they are not good substitutes in consumption, the fall in demand for meat will be small and Japan will have to continue importing large amount of meat from other countries, thus reducing the extent to which the policies help to raise self-sufficiency.

Besides the above points that might affect the relative price of meat and healthy food, there exists other factors that might affect Japan's ability to achieve the self-sufficiency. Specifically, Japan's evolving demographics can be used to predict its future consumption pattern. As seen in Extract 2, Japan has an ageing population. With "population ageing and meat consumption increasing as its population ages",

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demand for meat in Japan will increase as taste and preferences changes, limiting Japan's ability to be self-sufficient.

Level	Description	Marks
L3	An answer that explains how taxes and subsidies work to solve market failure caused by diet westernisation and whether these policies help to raise Japan's self-sufficiency.	6-9
L2	An answer that explains the likely adverse effect on the allocation of resources when negative externalities exist OR that describes taxation and subsidies without linking them to the market failure OR that describes taxation and subsidies without linking them to self-sufficiency.	3-5
L1	An answer that merely identifies why the market fails.	1-2

In addition, **up to a further 3 marks** for valid evaluative comment. This should focus on the extent to which these policies help Japan to raise its self-sufficiency or other factors that might affect Japan in raising its self-sufficiency.

Question 2

Suggested answers:

(a)	State one factor, other than the number of unemployed workers that could cause the unemployment rate to change over time. [1]
	Labour force
(b)(i)	Explain the relationship between real GDP growth and unemployment rate as observed in Table 4. [3]
	When real GDP growth increased, national output increased. As demand for labour is derived from the demand for goods and services they produce, the demand for labour increases, which leads to a lower unemployment rate.
(b)(ii)	With reference to Table 3, explain how your above explanation could still be valid for the United States in 2016. [2]
	It is valid because output did increase in 2016 given that economic growth is still positive. As such, as pointed out in the above explanation, the demand for labour would increase, leading to a lower unemployment rate.

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(c)	With the help of Extract 1, explain why economic growth could be positively related to unemployment rate. [3]
	Economic growth could be driven by technology and automation. However, as highlighted in Extract 3, technology and automation are expected to disrupt labour market. Specifically, causing the current skill set to be obsolete. And if these workers do not have the necessary skills to take on the existing job, they will be structurally unemployed, thereby causing the unemployment rate to increase.
(d)	According to Extract 4, MAS would maintain the neutral stance for the Singapore dollar.
(i)	State what is meant by 'maintaining the neutral stance for the Singapore dollar'? [1]
	Keeping the rate of appreciation of the S$NEER is at zero per cent.
(ii)	With reference to Figure 1, how does the value of the Singapore dollar in December 2016 compare to its value in August 2016? [1]
	Depreciated
(iii)	Explain how your answers in (ii) is consistent with MAS's neutral policy stance. [2]
	The depreciation in (ii) is against the US dollar, which is just one currency in the basket of currencies, which is NEER is measured against.
(e)	Explain how an increase in the federal debt might affect the future standard of living in the United States. [5]
	An increase in federal debt would need the government to raise tax revenue in the future to service its debt and/or reduce its spending on certain areas so as to service the larger debt. This increase in personal income taxes would lower disposable income and purchasing power of the residents, causing the material SOL in the future to fall. With an increase in federal debt and more being set aside to service the loan, the government now has less expenditure to spend. As such, the government will not be able to spend as much on education, healthcare, environment and the poor. As such, both material and non-material SOL might could fall. In order to get 5m, at least one of the two points must link to non-material aspect of SOL 2 points on material SOL – max 4 marks 1 point on non-material SOL- 1 mark.

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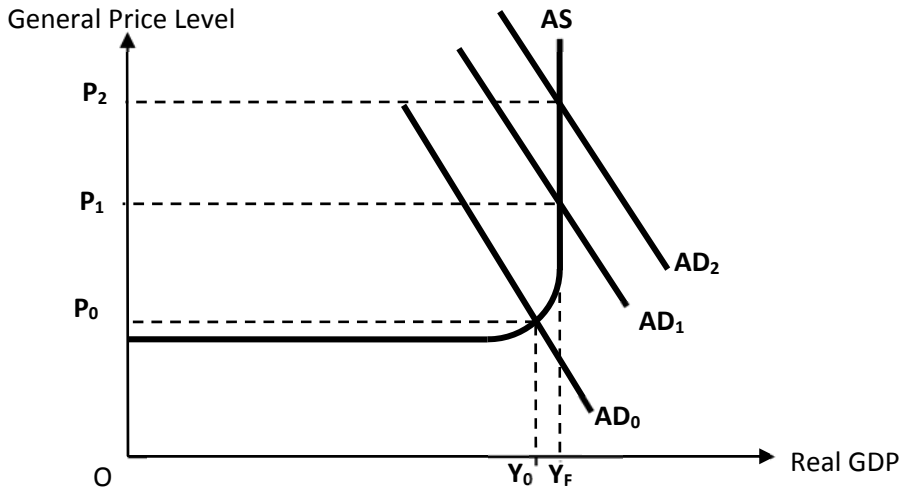
(f)(i)	Using an AD/AS diagram, explain why higher deficit-financed public spending could prompt the US Federal Reserve to start tightening monetary policy. [4]
	Higher deficit-financed public spending increase in AD from AD0 to AD1 and then to AD2 would lead to higher price level from P0 to P1 and then to P2 as the economy approaches full employment, leading to demand-pull inflation.  <u>Marking scheme</u> Up to 2 mark for the diagram. Up to 2 marks for the explanation.
(f)(ii)	Explain how tightening monetary policy is a response of the US Federal Reserve given the higher deficit-financed public spending and comment on its effectiveness. [9]
	As shown in f(i), a higher deficit-financed public spending will lead to demand-pull inflation. To prevent demand-pull inflation, tightening monetary policy, which involved raising interest rate, would have an effect of reducing C, I and NX. An increase in interest rate would increase cost of borrowing and in turn decreases consumption expenditure such as cars. Firms will also find it more costly to borrow to invest. As a result, investment in the economy will decrease because less investment projects will now regarded as profitable compared to when the interest rate was lower. A raise in interest rate relative to that of other countries would cause financial capital/ 'hot' money inflows into the country. This causes the demand for USD to increase and hence the USD to appreciate. As such, exports to be more expensive in foreign currency while imports become cheaper in domestic currency (USD). Assuming Marshall-Lerner condition is satisfied (i.e. PEDX + PEDM >1), this will reduce net exports (X-M).

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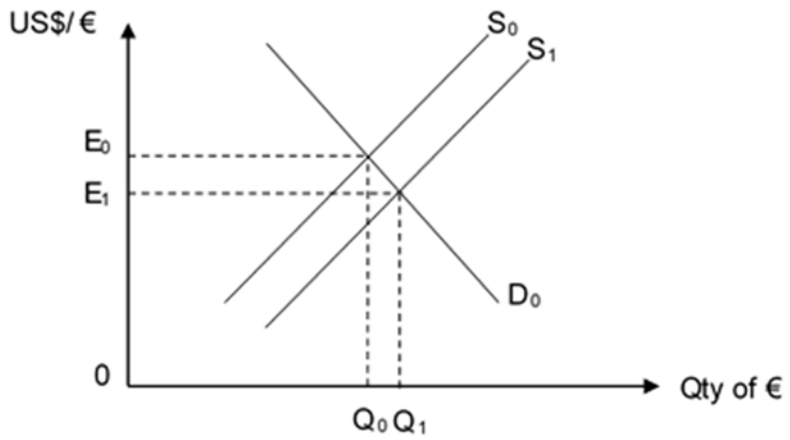
	This reduction in C, I and NX will cause AD to decrease and general price level to decrease, dampening the demand-pull inflation caused by the higher deficit-financed public spending. <u>Possible Comments</u> Tightening monetary policy might not be effective because of the following reasons • Positive economic outlook. • interest rate is still historically low • Trump might exert pressure on the Fed reserve
(g)	Extract 2 stated Trump election to date has led to the depreciation of the euro, yen, pound and emerging market currencies. Using a diagram, explain how Trump election has led to the depreciation of any of these currencies. [4]
	As highlighted in Extract 2, Trump election to date is the flood of capital into the US in anticipation of higher returns from fiscal stimulus and monetary tightening. With reference to the Euro market as shown in the diagram below, the initial value of euro in terms of US$ is E0 as determined by D0 and S0. With the increased preference to invest in the US and to hold USD, investors and speculators sell Euro, causing the supply of the Euro to shift to the right from S0 to to S1, leading to a fall in the value of the euro from E0 to E1. 
(h)	Extract 1 suggests combining big surge of spending on infrastructure with tax cuts and deregulation is dangerous. Explain the alternative view point and assess whether doing so is indeed dangerous. [12]

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	Combining big surge of spending on infrastructure with tax cuts and deregulation is dangerous. Specifically, based on the extracts, it can cause inflation, large fiscal debt and widening income disparity. Despite the possible dangers on the economy that these economists have warned against, there has been another viewpoint that these policy initiatives might not cause any dangers after all due to other effects that these initiatives might also bring about. The tax cuts and deregulation might result in increase in quantity and quality of capital. This may happen as the tax cuts would have prompted more investments as domestic and foreign investors are incentivized by the attractive after tax profits. Infrastructure spending on transportation, energy, water and hospitals as mentioned in Extract 7 could also help to create more business opportunities and make investments in US more conducive. These would increase the productive capacity of the economy and hence lead to a rightward shift of the LRAS resulting in potential growth. This can help to moderate the increase in general price levels and achieve price stability. These actions might also result in sustained economic growth as the increase in actual growth is accommodated by increases in productive capacity of the economy, allowing consistent increases in GDP. In addition, the increase in sustained growth will allow the government to reduce its fiscal debt as firms which are incentivized by the initial tax cuts will make more profits from their increased investments and they will have to pay more in corporate taxes eventually since their profits increase. The increase in GDP due to the policy initiatives will also mean the government will be able to collect more tax revenue as income of Americans increase. This will enable the government to have more financial ability to implement measures to redistribute income, like issuing grants and subsidies to the low income group to reduce the income gap. The increase in GDP and hence economic growth can also raise expectations about the US economy and this increase in optimism can spur the US economy even more in terms of increase in consumption and investment expenditure. This can further propel the economy. **Assess whether it is dangerous** Therefore, whether the policy initiatives that Trump advocates is going to be dangerous depends on the effectiveness of the policies. If the deregulation and the tax cuts can increase the productive capacity of the US, then the potential risk of demand-pull inflation will be significantly reduced It is also important to consider the time frame of the policy implementation. In the short run, the policy initiatives and aggressive government spending might bring about inflation but if the measures are successful in the long run, the increase in productive capacity would accommodate the potential increases in AD and reduce the risk of increase in general price levels. Also, it is important to consider the effects of achieving economic growth. If the government is going to actively redistribute the increase in tax revenue from the

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policy implementation, then the income gap in the country will not be widened and it will not be dangerous for the economy.

In conclusion, while Trumponomics might seem dangerous at first, if the policy measures are implemented on areas which can increase the productive capacity significantly, then the dangers to the economy might not be that great and might be even beneficial to the economy.

Level	Description	Marks
L3	A developed explanation of how these policies increases the productive capacity AND how supply-side policies bring about positive outcomes on inflation, fiscal debt and income gap.	6-9
L2	A developed explanation of how these policies increases the productive capacity OR how supply-side policies bring about positive outcomes on inflation, fiscal debt and income gap. An undeveloped explanation of how these policies increases the productive capacity, thereby bringing about positive outcomes on inflation, fiscal debt and income gap.	3-5
L1	A smattering of valid points	1-2

In addition, up to a further 3 marks for valid evaluative answer.

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ST. ANDREW'S JUNIOR COLLEGE
PRELIMINARY EXAMINATIONS – 2018 (JC2)
General Certificate of Education Advanced Level
Higher 1

ECONOMICS **8823/01**

Paper 1 **11 September 2018**

3 hours

Additional Materials: Answer Paper

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.

Start Question 1 and 2 on a fresh sheet of paper.
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.

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

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Answer **all** questions.

Question 1: Water and Plastics

Extract 1: Water is at the core of sustainable development

From food and energy security to human and environmental health, water contributes to improvements in social well-being and inclusive growth, affecting the livelihoods of billions.

Global water demand is largely influenced by population growth, urbanization, food and energy security policies, and macro-economic processes such as trade globalization, changing diets and increasing consumption. By 2050, global water demand is projected to increase by 55%, mainly due to growing demands from manufacturing, thermal electricity generation and domestic use.

Competing demands impose difficulties in the allocation of water resources and limit the expansion of sectors critical to sustainable development, in particular food production and energy. The competition for water also increases the risk of localized conflicts and continued inequities in access to it, with significant impacts on local economies and human well-being.

Economic growth itself is not a guarantee for wider social progress. In most countries, there is a wide – and often widening – gap between rich and poor, and between those who can and cannot exploit new opportunities. Access to safe drinking water and sanitation is a human right, yet its limited realization throughout the world often has disproportionate impacts on the poor and on women and children in particular.

Source: Adapted from *Water for a Sustainable World*, United Nations UNwater Report, 2015

Table 1: Price Elasticity of Demand for Selected Drinks in Indonesia

Type of drink	Coefficient of Price Elasticity of Demand
Water packaged in bottle	-0.716
Soft drink packaged in bottle	-1.602

Source: *Economics and Finance in Indonesia*, Vol. 63 No 1, June 2017

Extract 2: Cost of plastic bottles

Plastic bottles are ubiquitous but the cost of producing them varies dramatically around the world. The main type of plastic used, polyethylene terephthalate (PET), is made from naphtha, an oil derivative, which can be partly substituted with ethane, a natural-gas derivative. Very little ethane is traded internationally, so only places such as America and the Middle East where natural gas is cheap and abundant, use it to make PET.

Source: Adapted from *The Economist*, Nov 2014

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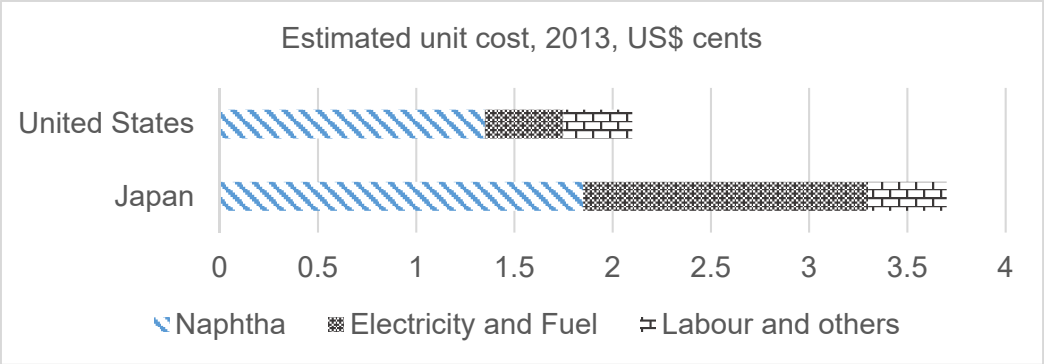
Figure 1: Cost of Making a Plastic Bottle



Source: Adapted from *The Economist, 2014*

Extract 3: The price of polyethylene terephthalate (PET)

A near 50 per cent fall in the cost of its major input would be a spectacular windfall for any industry. This is what has happened to European petrochemical companies over the past year, as the price of crude oil plunged. However, what was initially a windfall from lower oil prices, actually has turned into a moment of intense supply constraint.

The price of PET made by petrochemical companies, fell to a low of €1,085 per tonne in early February 2015, but it has subsequently jumped to about €1,635 in July 2015 — past its previous high of €1,452 in July 2014.

This is because years of chronic underinvestment has left petrochemical companies' plants facing a flurry of unscheduled shutdowns — leading to a shortage of plastic that has pushed up prices to new highs despite it costing less to make. Several of the big petrochemical companies have been hit by stoppages this year, including Shell, BP and Ineos.

Paul Hodges of International eChem, a chemicals and commodities consultancy, says the current situation is not simply an issue on the production side. He notes that the second quarter of the year is typically the strongest time for demand and that the limited rally in the value of oil at the beginning of 2015 caused buyers to rush to build plastics inventory in advance of expected price increases.

Source: Adapted from *The Financial Times*, July 2015

Extract 4: Addressing East Asia's growing environmental crisis

Eight million tons of plastics are dumped in the ocean each year – that is about one truck of garbage per minute. The same research lists China, Indonesia, Philippines and Vietnam – all in East Asia – as countries dumping the most plastic waste. Indeed, East Asia is producing waste faster than any other region in the world.

The financial toll is huge. Marine ecosystems globally suffer an estimated US$13 billion a year in damages caused by plastic waste. APEC estimates the costs to tourism, fishing, and shipping industries to be US$1.3 billion for the region. The adverse impacts on health, food chains and jobs are under study.

Countries in the region are responding to the growing problem. Indonesia launched a National Marine Debris Action Plan which targets a 70 percent reduction in marine plastic waste by the year 2025 included strategies such as giving incentives for its industries to use more recycled plastics. Others resort to fiscal instruments which can help to change producer

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and consumer behaviour. These mechanisms can include taxes on single-use plastics that help correct market inefficiencies.

New technologies and innovation supported by the government, including upstream product redesign and reduced packaging, will be critical to beat plastic pollution – and this space for research and solutions is growing. The potential 'greening' of ports and logistics chains are opportunities for capturing waste. Cambodia's entrepreneurs are offering consumers plastic bags made from cassava, a root vegetable widely consumed in developing countries.

Source: Adapted from *Planet over Plastic*, The World Bank, 8 June, 2018

Extract 5: Factors that make recycling plastic fall apart

As oil prices plummet, the market for recycled plastic is taking a huge hit surprisingly. Plastics, after all, are made from petroleum — so as the price of oil drops, so does the cost of making new plastic. In fact, making new plastic has become less expensive than the recycling process, since cleaning and preparing used plastics takes a lot of water, energy, and effort. The New York Times also reports that Waste Management — United States' largest waste hauler[1] — even shut down 20 facilities in 2014 and 2015, due in part to decreased demand and shrinking profit margins.

There are other factors that contributed to the decreasing value of recycling. Early recycling programs had smaller bins, for example, and required consumers to sort their waste according to type. Now that single-stream recycling — that is, the big blue bin where you toss all your recyclables — is widespread in the United States, tons of stuff that can't be recycled gets tossed in with the things that should be by well-meaning recyclers. This makes the sorting and cleaning process even more labour-intensive and costly. New plastics are more appealing to manufacturers than recycled plastics because the chemical composition is easier to nail down — recycled plastics can have issues, like rapid degradation or more limited uses.

Source: Adapted from Businessinside.com, 5 April, 2016

Extract 6: $180bn investment in plastic factories feeds global packaging binge

Despite the rising tide of concern, powerful corporations are pressing ahead with a new generation of plastic production facilities that will swamp United States' efforts to move the economy away from single use plastic products. The new facilities being built by corporations like Shell Chemical will help fuel a 40% rise in plastic production in the next decade, exacerbating the plastic pollution crisis.

But the American Chemistry Council said the plastics boom had brought huge economic benefits to the US creating hundreds of thousands of jobs and allowing the manufacture of a wide range of important products from medical supplies to auto parts, piping to technology.

Steve Russell, vice president of the American Chemistry Council cited a study from 2016 that found using advanced plastics reduces environmental damage. "Advanced plastics enable us to do more with less in almost every facet of life and commerce. From reducing packaging, to driving lighter cars, to living in more fuel-efficient homes, advanced plastics help us reduce energy use, carbon emissions and waste." Matthew Thoelke, an expert in the global chemical industry, said the expansion in the US will help meet growing demand for plastic in the existing big markets of the US, Europe and China.

Source: Adapted from *The Guardian*, 26 June,2017

[1] A company that transports solid and residual waste to the treatment or recycling plants

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Questions

(a)		"By 2050, global water demand is projected to increase by 55%, mainly due to growing demands from manufacturing, thermal electricity generation and domestic use." (Extract 1) Is this an example of a normative economic statement? Explain your answer.	[2]
(b)	**(i)**	With reference to Extract 1, and using a diagram, explain the opportunity cost involved in the allocation of limited water resources.	[4]
	(ii)	With reference to Extract 1, explain why the free market fails to achieve an equitable distribution of water resources.	[4]
(c)	**(i)**	Using Figure 1, explain ONE reason why the cost of producing a plastic bottle is different between Japan and the United States.	[2]
	(ii)	With reference to Extract 3, account for the sharp changes in the price of polyethylene in Europe from July 2014 to July 2015 and comment on whether the future price of polyethylene is likely to rise or fall.	[8]
(d)	**(i)**	Explain how the consumption of plastic-bottled beverages could result in a case of market failure.	[6]
	(ii)	Assess to what extent Table 1 is able to explain the relative effectiveness of imposing a tax to reduce the consumption of plastic-bottled water and plastic-bottled soft drinks.	[7]
(e)		With reference to the data, discuss whether the United States should adopt similar policies as those implemented in East Asia in the market for plastics.	[12]

[Total: 45]

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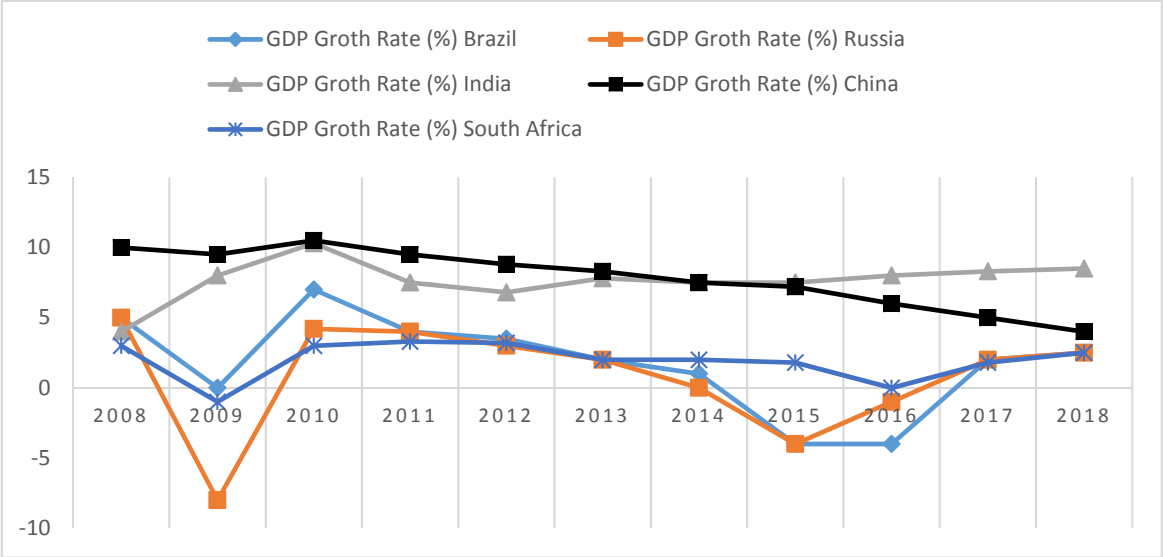
Question 2: Inclusive Growth in BRICS and Singapore

Figure 2: GDP Growth in BRICS Nations



Source: International Monetary Fund

Extract 7: Growth issues in BRICS

BRICS - Brazil, Russia, India, China and South Africa - registered solid rates of economic growth before the global financial crisis in 2009. While they were resilient in the first few years after the financial crisis, their growth pace has been slowing in recent years. BRICS are the largest emerging markets, accounting for about two-thirds of emerging market GDP.

An unfavourable external environment appears to have been the main source of the slowdown between 2010 and 2014. Among the most important external factors are weak global trade, a steady decline in commodity prices, and tightening global financial conditions. The steady decline in commodity prices has set back growth in commodity-exporting BRICS such as Russia, Brazil, and South Africa. Meanwhile, investment growth in BRICS has also slowed.

Since early 2014, domestic factors have become the predominant forces behind slowing growth in BRICS. These factors include a sustained decline in productivity and bouts of policy uncertainty. Also, the fiscal positions of BRICS have generally deteriorated.

Source: www.worldbank.org 1 Nov 2016

Table 2: Various Economic indicators of BRICS in 2017

Country	Brazil	Russia	India	China	South Africa
GDP per capita (in USD)	$10 220	$11 950	$2 130	$10 090	$6 460
GDP per capita PPP (in USD)	$16 200	$28 960	$7 780	$18 070	$13 840
Real GDP growth	2.3%	1.7%	7.4%	6.6%	1.5%
Population	209.2 million	156.9 million	1.33 billion	1.39 billion	57.7 million
Unemployment rate	11.8%	4.7%	3.4%	3.9%	26.7%
Life expectancy	75 years	70.5 years	68.3 years	76.1 years	62.9 years

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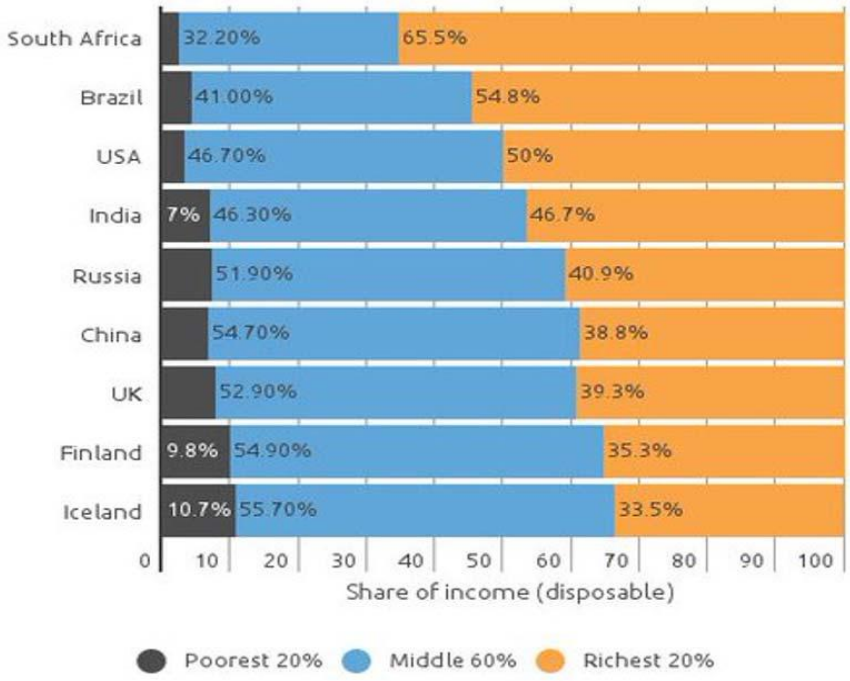
Figure 3: Income Distribution of BRICS in 2017



Source: Unu-wider Data

Extract 8: The mixed fortunes of the BRICS countries

BRICS countries — Brazil, Russia, India, China and South Africa (South Africa joined in 2010) — were arguably the emerging superstars most likely to dominate the 21st century globalized economy. These five countries cover 40 percent of the world's population and more than 25 percent of the world's land.

China is now the second-largest economy in the world by GDP and poised to overtake the US over the next few years. In 1990, China produced less than 3 percent of the world's manufacturing output when measured by value; by 2015, it produced roughly 25 percent. India is a similar story, but instead of focusing on manufacturing, it went the services route instead.

It would be easy to label India and China as the clear winners among the BRICS, but it's not that simple. India and China have the fastest growth rates of any major economies in the world. But nearly 50 percent of Indians remain vulnerable to poverty, and China's economy has slowed as higher wages make manufacturing more expensive. Both countries are especially vulnerable to technological changes that bring automation into the workplace on a larger scale. The World Bank estimates that 68 percent of all existing jobs in India are "at risk" from automation. In China, the figure is 77 percent. Leaders of both nations recognise that inflationary pressure might be a concern, but both are also confident that it will ease over time.

Source: Time.com, accessed on 06.07.2018

Extract 9: The Brazilian Competitiveness Cliff

Under OECD's Brazil 2018 Economic Survey, figures showed that its economy grew 1 per cent last year, its first year of positive growth since 2014. Prior to the recovery from recession, disappointing export performance is the centre of an economic policy debate raging in Brazil. It was sparked by the sharp decline of GDP rate of expansion from 2010 to 2017.

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Brazil has been facing considerable competitiveness challenges. A recent slowdown in industrial exports seemed to be related to supply-side difficulties stemming from a wide range of inefficiencies and rising costs, rather than insufficient demand. This diagnostic reinforces the urgency of the measures of increasing the investment-to-gross domestic product (GDP) ratio, and advancing toward better-skilled human capital.

Source: Worldbank.org, Feb 2013, accessed on 06.07.2018

Extract 10: China Pledges policy reforms in 2016 amidst slowing growth

China will make its monetary policy more flexible and expand its budget deficit in 2016 to support a slowing economy, state media said, citing top leaders who wrapped up an important meeting and vowed to push forward "supply-side reform". The meeting called for tax cuts to reduce burden on companies and a gradual expansion of China's fiscal deficit ratio. The government will take steps to expand aggregate demand while pushing supply-side reforms.

The People's Bank of China (PBOC) has maintained a prudent monetary policy since 2011, raising or cutting interest rates in line with shifts in the economy. The PBOC has cut interest rates six times since November last year. The government has also stepped up spending on infrastructure projects and eased restrictions on home buying to boost the sluggish property market. Top leaders also pledged to push forward "supply-side reform" to help generate new growth engines, while tackling factory overcapacity and property inventories. Supply-side reform means to increase the efficiency of major sectors, or to improve allocation of resources like labour and capital, it may not be effective to boost economic growth in the short term.

Source: Reuters.com, 21.12.2015, accessed on 06.07.2018

Extract 11: Infrastructure, investment, inclusive growth – key BRICS goals

Inaugurating the BRICS Business Forum in New Delhi, Indian Vice-President Hamid Ansari said the first priority was "to create a business-friendly environment for investors and entrepreneurs in all member countries, to promote mutual trade and investment; and facilitate market inter-linkages and enhance market access opportunities." Also, there is a need to build resilience to external economic shocks and strengthen policy coordination by promoting information exchange through agreed platforms and by deepening our interaction and cooperation with non-BRICS countries, international organizations and forums." The basic principles for enhancing the trade and investment relations is to build responsive, inclusive and collective solutions in BRICS. Innovation and start-ups form a very significant component in the first BRICS exhibition/trade fair.

Likhachev, First Deputy Minister of Economic Development of Russia, expressed his hope for the initiative to become a tradition and an incentive in furthering BRICS development work. He said that BRICS should focus on industries. The Russian delegation will visit the Indian state of Maharashtra and would focus on the shipbuilding and oil and gas industry sectors.

Source: Russian Beyond Publications, Oct 2016

Extract 12: Singapore's effort in ensuring more inclusive growth

Some changes may be made to social policies in the coming years to ensure a more inclusive society. One example is the $8 billion Pioneer Generation Package. It helps citizens aged 65

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and above in 2014 meet their healthcare costs for life, with further subsidies on services and medicine at polyclinics and outpatient clinics, among others.

Workfare, made permanent in 2007 and enhanced since, is a key pillar of social security, and has boosted the wages of low-income Singaporean workers. The Progressive Wage Model in 2012 has lifted wages of those in the security, cleaning and landscape sectors. The adequacy of government spending on social protection and social security, especially for the poor and underprivileged is as important as how progressive it is for the middle-class. Government has placed emphasis on ensuring social mobility, equal opportunities and an inclusive society.

Source: The Straits Times, Sept 2015

Questions

(a)	**(i)**	Using Figure 2, describe the trend in BRICS nations' GDP growth from 2010 to 2018.	[2]
	(ii)	With reference to Extract 7, explain **one** possible reason for the trend in GDP growth for BRICS nations.	[2]
(b)	**(i)**	From Table 2, identify the country that experienced the least improvement in material standard of living in 2017 and explain the reasons for your choice.	[3]
	(ii)	Using Figure 3, compare the income distribution between South Africa and India.	[2]
	(iii)	Comment on whether the data supports the view that South Africa experienced a lower standard of living compared to India in 2017.	[5]
(c)	**(i)**	Explain what it means by a fall in export competitiveness.	[1]
	(ii)	Extract 9 states that there was an "urgency of the measures of increasing the investment-to-gross domestic product (GDP) ratio, and advancing toward better-skilled human capital". Explain how one of these measures stated in Extract 9 could improve Brazil's export competitiveness.	[3]
(d)		Using Extract 8, explain why the "winners" of BRICS may continue to face economic challenges.	[7]
(e)		Discuss how China's policy reforms in Extract 10 will impact the Chinese economy.	[8]
(f)		In the light of the information provided in Extracts 11 and 12, discuss the relative appropriateness of the approaches undertaken by the Singapore government and BRICS nations in attaining inclusive growth.	[12]

[45 marks]

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ST. ANDREW'S JUNIOR COLLEGE
PRELIMINARY EXAMINATIONS – 2018 (JC2)
General Certificate of Education Advanced Level
Higher 1

ECONOMICS **8823/01**

Paper 1 **11 September 2018**

3 hours

Additional Materials: Answer Paper

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.

Start Question 1 and 2 on a fresh sheet of paper.
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.

This document consists of **10** printed pages and **1** blank page.

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Answer **all** questions.

Question 1: Water and Plastics

Extract 1: Water is at the core of sustainable development

From food and energy security to human and environmental health, water contributes to improvements in social well-being and inclusive growth, affecting the livelihoods of billions.

Global water demand is largely influenced by population growth, urbanization, food and energy security policies, and macro-economic processes such as trade globalization, changing diets and increasing consumption. By 2050, global water demand is projected to increase by 55%, mainly due to growing demands from manufacturing, thermal electricity generation and domestic use.

Competing demands impose difficulties in the allocation of water resources and limit the expansion of sectors critical to sustainable development, in particular food production and energy. The competition for water also increases the risk of localized conflicts and continued inequities in access to it, with significant impacts on local economies and human well-being.

Economic growth itself is not a guarantee for wider social progress. In most countries, there is a wide – and often widening – gap between rich and poor, and between those who can and cannot exploit new opportunities. Access to safe drinking water and sanitation is a human right, yet its limited realization throughout the world often has disproportionate impacts on the poor and on women and children in particular.

Source: Adapted from *Water for a Sustainable World*, United Nations UNwater Report, 2015

Table 1: Price Elasticity of Demand for Selected Drinks in Indonesia

Type of drink	Coefficient of Price Elasticity of Demand
Water packaged in bottle	-0.716
Soft drink packaged in bottle	-1.602

Source: *Economics and Finance in Indonesia*, Vol. 63 No 1, June 2017

Extract 2: Cost of plastic bottles

Plastic bottles are ubiquitous but the cost of producing them varies dramatically around the world. The main type of plastic used, polyethylene terephthalate (PET), is made from naphtha, an oil derivative, which can be partly substituted with ethane, a natural-gas derivative. Very little ethane is traded internationally, so only places such as America and the Middle East where natural gas is cheap and abundant, use it to make PET.

Source: Adapted from *The Economist*, Nov 2014

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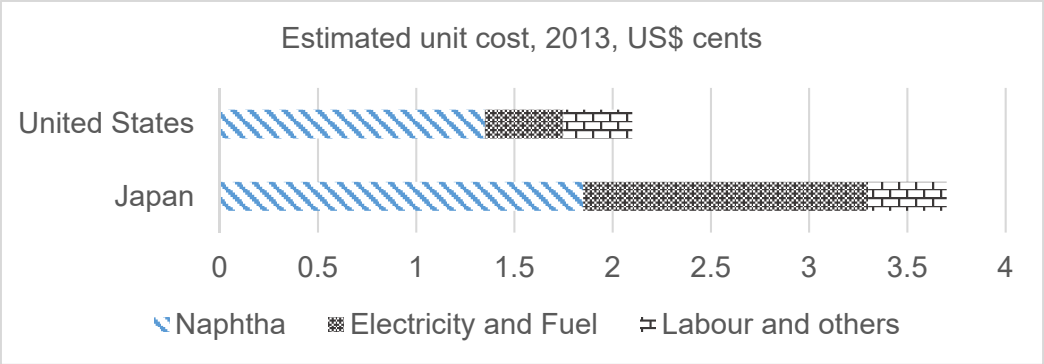
Figure 1: Cost of Making a Plastic Bottle



Source: Adapted from *The Economist, 2014*

Extract 3: The price of polyethylene terephthalate (PET)

A near 50 per cent fall in the cost of its major input would be a spectacular windfall for any industry. This is what has happened to European petrochemical companies over the past year, as the price of crude oil plunged. However, what was initially a windfall from lower oil prices, actually has turned into a moment of intense supply constraint.

The price of PET made by petrochemical companies, fell to a low of €1,085 per tonne in early February 2015, but it has subsequently jumped to about €1,635 in July 2015 — past its previous high of €1,452 in July 2014.

This is because years of chronic underinvestment has left petrochemical companies' plants facing a flurry of unscheduled shutdowns — leading to a shortage of plastic that has pushed up prices to new highs despite it costing less to make. Several of the big petrochemical companies have been hit by stoppages this year, including Shell, BP and Ineos.

Paul Hodges of International eChem, a chemicals and commodities consultancy, says the current situation is not simply an issue on the production side. He notes that the second quarter of the year is typically the strongest time for demand and that the limited rally in the value of oil at the beginning of 2015 caused buyers to rush to build plastics inventory in advance of expected price increases.

Source: Adapted from *The Financial Times*, July 2015

Extract 4: Addressing East Asia's growing environmental crisis

Eight million tons of plastics are dumped in the ocean each year – that is about one truck of garbage per minute. The same research lists China, Indonesia, Philippines and Vietnam – all in East Asia – as countries dumping the most plastic waste. Indeed, East Asia is producing waste faster than any other region in the world.

The financial toll is huge. Marine ecosystems globally suffer an estimated US$13 billion a year in damages caused by plastic waste. APEC estimates the costs to tourism, fishing, and shipping industries to be US$1.3 billion for the region. The adverse impacts on health, food chains and jobs are under study.

Countries in the region are responding to the growing problem. Indonesia launched a National Marine Debris Action Plan which targets a 70 percent reduction in marine plastic waste by the year 2025 included strategies such as giving incentives for its industries to use more recycled plastics. Others resort to fiscal instruments which can help to change producer

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and consumer behaviour. These mechanisms can include taxes on single-use plastics that help correct market inefficiencies.

New technologies and innovation supported by the government, including upstream product redesign and reduced packaging, will be critical to beat plastic pollution – and this space for research and solutions is growing. The potential 'greening' of ports and logistics chains are opportunities for capturing waste. Cambodia's entrepreneurs are offering consumers plastic bags made from cassava, a root vegetable widely consumed in developing countries.

Source: Adapted from *Planet over Plastic*, The World Bank, 8 June, 2018

Extract 5: Factors that make recycling plastic fall apart

As oil prices plummet, the market for recycled plastic is taking a huge hit surprisingly. Plastics, after all, are made from petroleum — so as the price of oil drops, so does the cost of making new plastic. In fact, making new plastic has become less expensive than the recycling process, since cleaning and preparing used plastics takes a lot of water, energy, and effort. The New York Times also reports that Waste Management — United States' largest waste hauler[1] — even shut down 20 facilities in 2014 and 2015, due in part to decreased demand and shrinking profit margins.

There are other factors that contributed to the decreasing value of recycling. Early recycling programs had smaller bins, for example, and required consumers to sort their waste according to type. Now that single-stream recycling — that is, the big blue bin where you toss all your recyclables — is widespread in the United States, tons of stuff that can't be recycled gets tossed in with the things that should be by well-meaning recyclers. This makes the sorting and cleaning process even more labour-intensive and costly. New plastics are more appealing to manufacturers than recycled plastics because the chemical composition is easier to nail down — recycled plastics can have issues, like rapid degradation or more limited uses.

Source: Adapted from Businessinside.com, 5 April, 2016

Extract 6: $180bn investment in plastic factories feeds global packaging binge

Despite the rising tide of concern, powerful corporations are pressing ahead with a new generation of plastic production facilities that will swamp United States' efforts to move the economy away from single use plastic products. The new facilities being built by corporations like Shell Chemical will help fuel a 40% rise in plastic production in the next decade, exacerbating the plastic pollution crisis.

But the American Chemistry Council said the plastics boom had brought huge economic benefits to the US creating hundreds of thousands of jobs and allowing the manufacture of a wide range of important products from medical supplies to auto parts, piping to technology.

Steve Russell, vice president of the American Chemistry Council cited a study from 2016 that found using advanced plastics reduces environmental damage. "Advanced plastics enable us to do more with less in almost every facet of life and commerce. From reducing packaging, to driving lighter cars, to living in more fuel-efficient homes, advanced plastics help us reduce energy use, carbon emissions and waste." Matthew Thoelke, an expert in the global chemical industry, said the expansion in the US will help meet growing demand for plastic in the existing big markets of the US, Europe and China.

Source: Adapted from *The Guardian*, 26 June,2017

[1] A company that transports solid and residual waste to the treatment or recycling plants

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Questions

(a)		"By 2050, global water demand is projected to increase by 55%, mainly due to growing demands from manufacturing, thermal electricity generation and domestic use." (Extract 1) Is this an example of a normative economic statement? Explain your answer.	[2]
(b)	**(i)**	With reference to Extract 1, and using a diagram, explain the opportunity cost involved in the allocation of limited water resources.	[4]
	(ii)	With reference to Extract 1, explain why the free market fails to achieve an equitable distribution of water resources.	[4]
c)	**(i)**	Using Figure 1, explain ONE reason why the cost of producing a plastic bottle is different between Japan and the United States.	[2]
	(ii)	With reference to Extract 3, account for the sharp changes in the price of polyethylene in Europe from July 2014 to July 2015 and comment on whether the future price of polyethylene is likely to rise or fall.	[8]
d)	**(i)**	Explain how the consumption of plastic-bottled beverages could result in a case of market failure.	[6]
	(ii)	Assess to what extent Table 1 is able to explain the relative effectiveness of imposing a tax to reduce the consumption of plastic-bottled water and plastic-bottled soft drinks.	[7]
(e)		With reference to the data, discuss whether the United States should adopt similar policies as those implemented in East Asia in the market for plastics.	[12]

[Total: 45]

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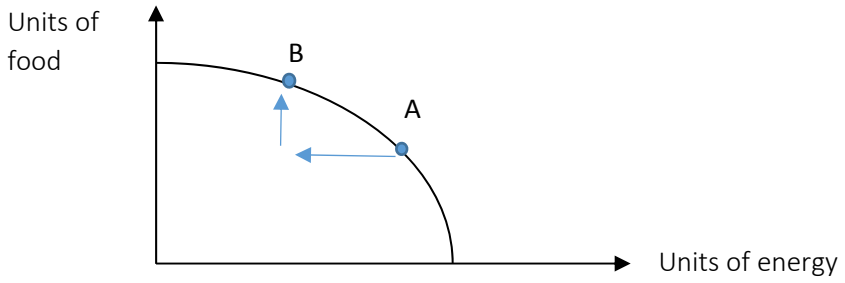
(a)		**"By 2050, global water demand is projected to increase by 55%, mainly due to growing demands from manufacturing, thermal electricity generation and domestic use." (Extract 1)** **Is this an example of a normative economic statement? Explain your answer.**	**[2]**
		This is not a normative statement as it is not an opinion/ value judgment. [1]. This is a factual statement/projection that is based on facts (i.e. growing demands from manufacturing….). It can be tested/proven true or false. [1]	
(b)	**(i)**	**With reference to Extract 1, and using a diagram, explain the opportunity cost involved in the allocation of limited water resources.**	**[4]**
		Water is limited/scarce as there are many uses for water. Examples include the use of water for producing food or for producing energy. [1] Competing demands for water implies that there will be a trade-off involved when deciding whether to produce food or energy. When more water is used for producing food, there will be less amount of water available to produce energy (i.e. moving from Point A to Point B).[1] There will be opportunity cost since the net benefit derived from the next best alternative (i.e. energy) will be foregone. OR, there will be opportunity cost in terms of units of energy forgone. [1] Using a PPC diagram [1], illustrate the trade-off/opportunity cost [1]  	
	(ii)	**With reference to Extract 1, explain why the free market fails to achieve an equitable distribution of water resources.**	**[4]**
		The free market determines the market <u>price</u> and <u>quantity</u> of water through the interaction of demand and supply.[1]	

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		People with higher income will be more willing and able to buy water than those with lower income, [1] The free market could result in excessively **high equilibrium price of water**. And as such **this market price will be out of their reach for the poor**, despite the fact that water is a basic necessity of life and should be accessible fairly regardless of income level. [1] Hence, **more quantity of water will be enjoyed by the rich than the poor**. OR Hence, **more quantity of water resources will be used to produce goods desired by the rich at the expense of the poor** (Extract 1). [1] Therefore the distribution of water resources is inequitable between the rich and the poor.	
c)	**(i)**	**Using Figure 1, explain ONE reason why the cost of producing a plastic bottle is different between Japan and the United States.**	**[2]**
		From Figure 1, one possible reason is the difference in raw-material costs and/or energy prices.[1] Any of the following points to explain the reason [1]: The cost of naphtha, electricity and fuel used to make a plastic bottle in Japan is higher than in the US possibly due to Japan using more of these factors of production. They could be using more due to lower productivity or lower levels of technology compared to the US. OR The unit costs of these factors of production could be lower in US due to their greater abundance of resources. For example, they have an abundance of natural gas which might result in lower prices of fuel/electricity. OR US has a greater abundance of natural gas which allows them to have cheaper ethane which can be used to substitute naphtha, in the production of plastic bottles. This would result in them using less naphtha than Japan.	
	(ii)	**With reference to Extract 3, account for the sharp changes in the price of polyethylene in Europe from July 2014 to July 2015 and comment on whether the future price of polyethylene is likely to rise or fall.**	**[8]**
		Price of polyethylene fell from €1,452 in July 2014 to €1,085 in Feb 2015 then rose sharply to €1,635 in July 2015. **<u>From July 2014 to Feb 2015,</u>**	

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		Oil is a factor of production for making polyethylene (PET). Price of oil fell during this period. Hence cost of production fell and supply of PET increased. The increase in PET supply led to surplus and a downward pressure on the price of PET at the old equilibrium price. Assuming that demand for PET is price inelastic (due to high degree of necessity of plastics in daily use or an essential raw material for producing plastic packaging etc), any fall in price would only result in a less than proportionate increase in quantity demanded. In order for the market to reach the new equilibrium, price would have to be much lower. Hence the sharp fall in price during this period. **<u>From Feb 2015 to Jul 2015,</u>** Both supply and demand factors accounted for the rise in price this period. <u>Supply factor:</u> Supply fell due to shutdowns of petrochemical plants. Given severe lack of investments past decades, the capacity to produce PET fell and output of PET fell. <u>Demand factor:</u> Furthermore, expectation of future price increases lead to buyers bringing forward their demand and seasonal high demand. Hence DD increased. Fall in supply and increase in DD led to an increase in the price of polyethylene. PES was likely to be <1 given the supply constraints from the remaining plants. Hence firms were not able to increase quantity supplied in response to price changes readily The increase in demand and fall in supply would result in a shortage as well as an upward pressure on price at the old equilibrium price. Since any rise in price would only lead to a less than proportionate increase in quantity supplied, the new price would need to be much higher in order for the market to reach the new equilibrium. Hence price rose sharply during this period. **Comment:** Whether the price would rise or fall in the future would depend on whether the rise in the strong demand is larger than the rise in the supply as plastic inventories are built. If the plastic inventories are built quickly in response to expectations of price increases, prices might not rise as quickly as the increase in supply could match the increase in demand. On the other hand, if the demand rises significantly and outstrips any increase in supply, prices would rise. **<u>Mark Scheme</u>** **Up to 4 marks for DD/SS analysis** on the fall in price of polyethylene. Up to 2 of these marks should be explanation of one correct factor leading	

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		a price fall and up to another 2 marks for explanation of one correct factor affecting a price rise. **Up to a further 2 marks for the use of at least one elasticity concept** to explain the sharp fall or sharp increase in the price of polyethylene. **Up to a further 2 marks for valid and relevant comment** on whether the price would rise or fall in the future.	
d)	**(i)**	**Explain how the consumption of plastic-bottled beverages could result in a case of market failure.**	**[6]**
		From Extract 4, there is presence of negative externalities in the consumption of plastic bottles. [1] Used plastic bottles that are inappropriately disposed into the river may become plastic waste that pollutes river. This result in external costs in the form of threatened marine life, lower tourism revenues and losses on fishing revenue on third parties such as the fishermen and related industries. External costs are not taken into account by the consumers as it does not fall on them.[1] With reference to the diagram, there is - Divergence between MSC and MPC due to presence of external cost. [1] - Consumers will consider their self-interest, and maximise utility at MPB=MPC at output Qp. whereas the society will maximise welfare at MSB=MSC at social optimal output Qs. [1] - As Qp>Qs, there is overconsumption of plastic bottles. [1] - Market fails and there is deadweight loss as additional cost incurred is higher than the additional benefit enjoyed for the amount overconsumed. [1] -	
	(ii)	**Assess to what extent Table 1 is able to explain the relative effectiveness of imposing a tax to reduce the consumption of plastic-bottled water and plastic-bottled soft drinks.**	**[7]**
		Analyse the effects of a tax A tax will have the effect of increasing cost of production (COP) for producers. This leads to a fall in supply of plastic-bottled soft drinks /bottled water. As such equilibrium price paid by the consumers will rise and equilibrium quantity will fall [1] **<u>Thesis:</u> Table 1 is able to explain that a tax might be more effective in reducing the consumption of plastic bottled soft drinks since PED of soft drinks is >1** According to Table 1, value of PED for bottled water is <1 while value of PED for soft drinks is >1 [1]	

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		Due to the elasticity values, **quantity consumed (or equilibrium quantity) for bottled waters will fall <u>less</u> than proportionately** to the increase in price of the plastic bottled waters whereas quantity consumed (or equilibrium quantity) for **soft drinks will fall <u>more</u> than proportionately** to the increase in price of the soft drinks. [1] Therefore the tax will be more effective in reducing the consumption of plastic bottled soft drinks.[1] **<u>Anti-thesis:</u> Table 1 may not be sufficient as other information is needed such (e.g the ceteris paribus condition might not hold).** Table 1 may not be sufficient in explaining the effectiveness as there could be changes in demand and supply that will affect the quantity consumed of both beverages. For example: • The rise in world population is increasing the demand for plastic bottled beverages hence overall consumption may still increase after the tax (Extract 1). • Increased urbanisation may lead to increasing demand for more uses of water after the tax (Extract 1). • The fall in oil prices could lead to changes to supply such as a fall in the cost of production of bottled beverages which increases supply and negate the effect of the tax (Extract 3). **NB: Give at least one evidence of a change in demand or supply** Overall consumption may not fall by the extent discussed above in the two markets. **Other possible answers that Table 1 is not able to explain the effectiveness of the tax include the reliability of the PED estimates as it changes over time.** For example, discovery of new substitutes to replace bottled water/soft drinks such as Ooho boffins (edible pouches of water/soft drinks) which may increase the PED value. This will made the tax be more effective in reducing consumption over time. **<u>Mark scheme</u>** **Up to 2m** for analysing the effect of tax on P and Q in the market for plastic bottled markets. **Up to 3 further marks** for explanation on how Table 1 explains the relative effectiveness of the imposition of a tax on the two different markets. **Up to 2 further marks** for explaining why Table 1 may not be sufficient with the use of at least 1 appropriate example. Alternatively, we can have **Up to 4m** for analysing the effect of tax on P and Q in the market for plastic bottled markets and for explanation on how Table 1 explains the	

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		relative effectiveness of the imposition of a tax on the two different markets. **Up to 3 further marks** for explaining why Table 1 may be insufficient with the use of appropriate evidence from the extracts. One valid point, well-explained and supported with an appropriate evidence, can be awarded the full 3 marks.	
(e)		**With reference to data, discuss whether United States should adopt similar policies as those implemented in East Asia in the market for plastics.**	**[12]**
		With reference to Extract 4, the three main types of policies practiced in East Asia (including SE Asia) are: 1. Incentives for its industries to use more recycled plastics. (Indonesia) 2. Fiscal instrument (taxes on single-use plastic) 3. New technologies on product redesign and reduce packaging/ greening of ports and logistics chain (A regional effort) **<u>Thesis:</u> The objective of the United States government is assumed to reduce the consumption of plastics or reduce the external cost generated i.e. reduce the plastic waste.** Hence, similar policies by East Asia should be used These policies can work to correct the market failure in United States. <u>Policy 1:</u> Increase incentives will increase the benefits of using recycled plastics (in the plastic bottled beverage market), this will lead to producers switching to use more recycled plastics. This will help increase the consumption of recycled plastics. This in turn make firms use less virgin plastics. Alternatively students may explain when more recycled plastics are used in the production of plastic bottled beverage market, plastic waste is reduced hence leading to lower external cost on the environment incurred in the consumption of the plastic bottled beverages. <u>Policy 2:</u> Explain how taxes on single-use plastics or plastic bottled beverages can reduce consumption of plastic bottled beverages. Explain with the implementation of the tax, it leads to an increase in MPC, leading to consumption to fall to be nearer social optimal output. <u>Policy 3:</u> Innovation such as use of cassava-based plastics or greener technology/logistics such as the use of biodegradable plastics will provide producers with better alternatives to plastic packaging. **<u>Anti-thesis:</u>** US may have other objectives besides to address market failure in the market for plastics. Despite the environmental concerns, US has allowed $180bn investment by plastic corporation to build plastic factories to feed global packaging binge based on Extract 6.	

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		The key reason for this investment is to increase In production of plastic plants that will lead to creation of more jobs and lower unemployment to the US economy via the multiplier effect. Some experts in US feel that innovation on advanced plastics will improve the environment via reducing energy use (Extract 6). Technology advancement in advanced plastics may also benefit other sectors and consumers in terms of the production methods and types of consumer products produced. As mentioned, plastics can reduce packaging, lead to production lighter cars, live in more fuel-efficient homes. Plastics may help to reduce energy use, carbon emissions and waste. Hence, East Asia's policies that reduce the consumption and production of plastic may run against US's objective to achieve economic growth. In addition, these policies by the East Asia countries have its limitations in the context of United States. <u>Policy 1:</u> According to Extract 5, there are difficulties in persuading firms to use more recycled plastic. Firstly, making new plastics has become less expensive than the recycling process due to fall in oil prices. Secondly, it is getting more expensive in the US to recycle after they adopt single-stream recycling. Thirdly, freshly produced plastics are more versatile as it can be food grade, producers using freshly produced plastics struggle less with chemical composition/ rapid degradation issues. Whether firms will use recycled plastic or virgin plastic depends on the relative price/benefits between them. The net benefit of using recycle plastic must be higher than that of virgin plastics. Incentives must be sufficiently high for producers to make the switch. This would lead to more burden on the government budget. <u>Policy 2:</u> As cost of producing plastic are relatively lower in US than other countries, producers may still prefer to use plastics over other materials. There could also be lack of cheaper substitutes. Given higher income and a high preference for convenience, plastic products such as plastic bottled beverages/packaging/disposables may be deemed as a necessity e.g. demand for plastic bottled beverage is less than 1, increase in price of plastic bottled beverage will lead to a less than proportionate fall in quantity demanded. A very large tax may be required to see the desired effect. It also depends on whether there are more environmental-friendly substitutes to plastics. <u>Policy 3:</u> Innovation takes time and may not see significant results. Cost of adopting the greener alternatives may deter producers from switching if cost of making plastics is lower. **<u>Conclusion</u>**	

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The policies implemented in East Asia is likely to have positive outcomes in addressing market failure in United States plastic market. However, US may not just want to implement policies to limit production and consumption of plastics.

US may even to want to marry its objective of achieving economic growth with the objective to reduce market failure. Hence, US could implement some policies similar to East Asia and at the same time pushes ahead with the investments in plastic facilities.

As US balances the 2 objectives, there will be trade-offs. If US prioritises economic growth, it may have to adopt a looser policies that limit plastics. If US believes in achieving a more sustainable world, then more resources may have to be allocated to implementing the similar policies as in South East Asia.

L3	*An answer that explains how the United States' adoption of at least two policies implemented by East Asia work to improve the market failure in United States.* *Cap of 7m (TBC) if answers did not consider the effects of the policies in the context of United States.*	*6-9*
L2	*An answer that explains policies* *-WITHOUT linking them to the market failure, OR* *-Only one policy is discussed, OR* *-Unbalanced argument for not considering the problems/limitations of the policies.*	*4-5*
L1	*An answer that superficially touches on the working of the policies.*	*1-3*

In addition, **up to a further 3marks** for valid evaluative comment. This should focus on "should US adopt those policies' aspect of the question such as comments on overall effectiveness, importance of factors that affect the success of these policies in US's plastic market.

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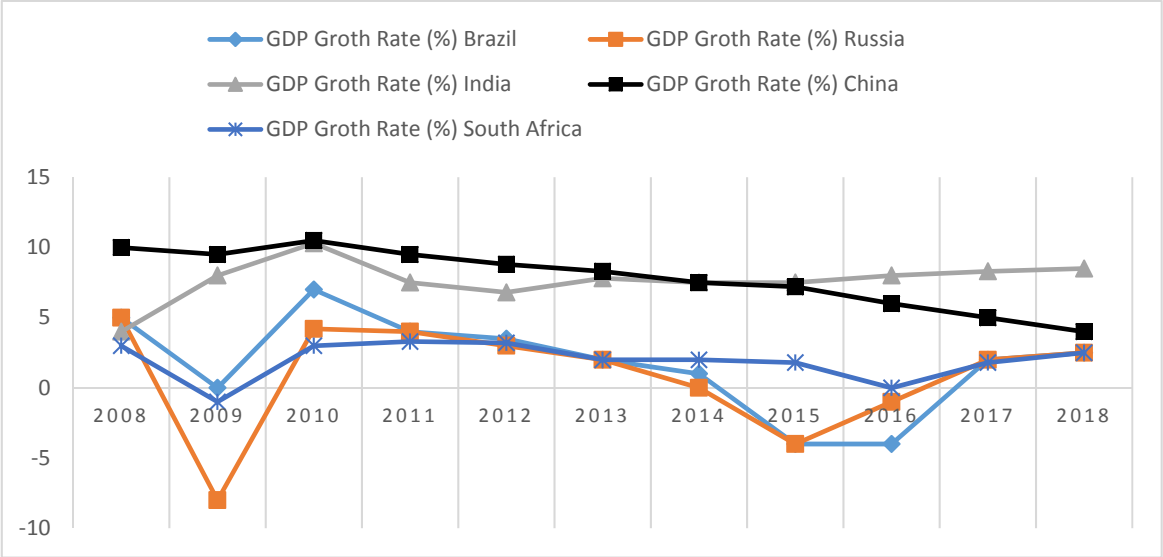
Question 2: Inclusive Growth in BRICS and Singapore

Figure 2: GDP Growth in BRICS Nations



Source: International Monetary Fund

Extract 7: Growth issues in BRICS

BRICS - Brazil, Russia, India, China and South Africa - registered solid rates of economic growth before the global financial crisis in 2009. While they were resilient in the first few years after the financial crisis, their growth pace has been slowing in recent years. BRICS are the largest emerging markets, accounting for about two-thirds of emerging market GDP.

An unfavourable external environment appears to have been the main source of the slowdown between 2010 and 2014. Among the most important external factors are weak global trade, a steady decline in commodity prices, and tightening global financial conditions. The steady decline in commodity prices has set back growth in commodity-exporting BRICS such as Russia, Brazil, and South Africa. Meanwhile, investment growth in BRICS has also slowed.

Since early 2014, domestic factors have become the predominant forces behind slowing growth in BRICS. These factors include a sustained decline in productivity and bouts of policy uncertainty. Also, the fiscal positions of BRICS have generally deteriorated.

Source: www.worldbank.org 1 Nov 2016

Table 2: Various Economic indicators of BRICS in 2017

Country	Brazil	Russia	India	China	South Africa
GDP per capita (in USD)	$10 220	$11 950	$2 130	$10 090	$6 460
GDP per capita PPP (in USD)	$16 200	$28 960	$7 780	$18 070	$13 840
Real GDP growth	2.3%	1.7%	7.4%	6.6%	1.5%
Population	209.2 million	156.9 million	1.33 billion	1.39 billion	57.7 million
Unemployment rate	11.8%	4.7%	3.4%	3.9%	26.7%
Life expectancy	75 years	70.5 years	68.3 years	76.1 years	62.9 years

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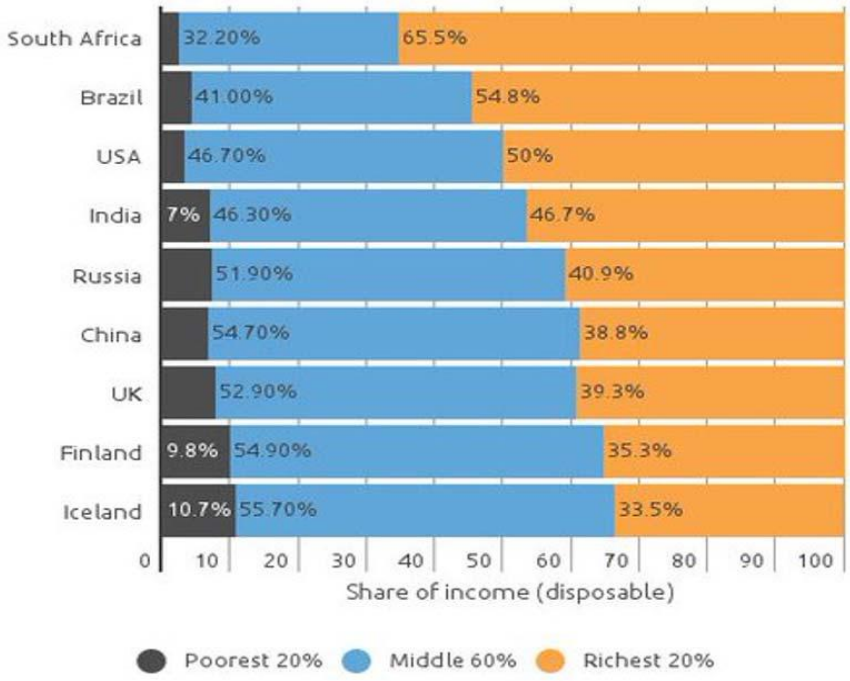
Figure 3: Income Distribution of BRICS in 2017



Source: Unu-wider Data

Extract 8: The mixed fortunes of the BRICS countries

BRICS countries — Brazil, Russia, India, China and South Africa (South Africa joined in 2010) — were arguably the emerging superstars most likely to dominate the 21st century globalized economy. These five countries cover 40 percent of the world's population and more than 25 percent of the world's land.

China is now the second-largest economy in the world by GDP and poised to overtake the US over the next few years. In 1990, China produced less than 3 percent of the world's manufacturing output when measured by value; by 2015, it produced roughly 25 percent. India is a similar story, but instead of focusing on manufacturing, it went the services route instead.

It would be easy to label India and China as the clear winners among the BRICS, but it's not that simple. India and China have the fastest growth rates of any major economies in the world. But nearly 50 percent of Indians remain vulnerable to poverty, and China's economy has slowed as higher wages make manufacturing more expensive. Both countries are especially vulnerable to technological changes that bring automation into the workplace on a larger scale. The World Bank estimates that 68 percent of all existing jobs in India are "at risk" from automation. In China, the figure is 77 percent. Leaders of both nations recognise that inflationary pressure might be a concern, but both are also confident that it will ease over time.

Source: Time.com, accessed on 06.07.2018

Extract 9: The Brazilian Competitiveness Cliff

Under OECD's Brazil 2018 Economic Survey, figures showed that its economy grew 1 per cent last year, its first year of positive growth since 2014. Prior to the recovery from recession, disappointing export performance is the centre of an economic policy debate raging in Brazil. It was sparked by the sharp decline of GDP rate of expansion from 2010 to 2017.

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Brazil has been facing considerable competitiveness challenges. A recent slowdown in industrial exports seemed to be related to supply-side difficulties stemming from a wide range of inefficiencies and rising costs, rather than insufficient demand. This diagnostic reinforces the urgency of the measures of increasing the investment-to-gross domestic product (GDP) ratio, and advancing toward better-skilled human capital.

Source: Worldbank.org, Feb 2013, accessed on 06.07.2018

Extract 10: China Pledges policy reforms in 2016 amidst slowing growth

China will make its monetary policy more flexible and expand its budget deficit in 2016 to support a slowing economy, state media said, citing top leaders who wrapped up an important meeting and vowed to push forward "supply-side reform". The meeting called for tax cuts to reduce burden on companies and a gradual expansion of China's fiscal deficit ratio. The government will take steps to expand aggregate demand while pushing supply-side reforms.

The People's Bank of China (PBOC) has maintained a prudent monetary policy since 2011, raising or cutting interest rates in line with shifts in the economy. The PBOC has cut interest rates six times since November last year. The government has also stepped up spending on infrastructure projects and eased restrictions on home buying to boost the sluggish property market. Top leaders also pledged to push forward "supply-side reform" to help generate new growth engines, while tackling factory overcapacity and property inventories. Supply-side reform means to increase the efficiency of major sectors, or to improve allocation of resources like labour and capital, it may not be effective to boost economic growth in the short term.

Source: Reuters.com, 21.12.2015, accessed on 06.07.2018

Extract 11: Infrastructure, investment, inclusive growth – key BRICS goals

Inaugurating the BRICS Business Forum in New Delhi, Indian Vice-President Hamid Ansari said the first priority was "to create a business-friendly environment for investors and entrepreneurs in all member countries, to promote mutual trade and investment; and facilitate market inter-linkages and enhance market access opportunities." Also, there is a need to build resilience to external economic shocks and strengthen policy coordination by promoting information exchange through agreed platforms and by deepening our interaction and cooperation with non-BRICS countries, international organizations and forums." The basic principles for enhancing the trade and investment relations is to build responsive, inclusive and collective solutions in BRICS. Innovation and start-ups form a very significant component in the first BRICS exhibition/trade fair.

Likhachev, First Deputy Minister of Economic Development of Russia, expressed his hope for the initiative to become a tradition and an incentive in furthering BRICS development work. He said that BRICS should focus on industries. The Russian delegation will visit the Indian state of Maharashtra and would focus on the shipbuilding and oil and gas industry sectors.

Source: Russian Beyond Publications, Oct 2016

Extract 12: Singapore's effort in ensuring more inclusive growth

Some changes may be made to social policies in the coming years to ensure a more inclusive society. One example is the $8 billion Pioneer Generation Package. It helps citizens aged 65

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and above in 2014 meet their healthcare costs for life, with further subsidies on services and medicine at polyclinics and outpatient clinics, among others.

Workfare, made permanent in 2007 and enhanced since, is a key pillar of social security, and has boosted the wages of low-income Singaporean workers. The Progressive Wage Model in 2012 has lifted wages of those in the security, cleaning and landscape sectors. The adequacy of government spending on social protection and social security, especially for the poor and underprivileged is as important as how progressive it is for the middle-class. Government has placed emphasis on ensuring social mobility, equal opportunities and an inclusive society.

Source: The Straits Times, Sept 2015

Questions

(a)	**(i)**	Using Figure 2, describe the trend in BRICS nations' GDP growth from 2010 to 2018.	[2]
	(ii)	With reference to Extract 7, explain **one** possible reason for the trend in GDP growth for BRICS nations.	[2]
(b)	**(i)**	From Table 2, identify the country that experienced the least improvement in material standard of living in 2017 and explain the reasons for your choice.	[3]
	(ii)	Using Figure 3, compare the income distribution between South Africa and India.	[2]
	(iii)	Comment on whether the data supports the view that South Africa experienced a lower standard of living compared to India in 2017.	[5]
(c)	**(i)**	Explain what it means by a fall in export competitiveness.	[1]
	(ii)	Extract 9 states that there was an "urgency of the measures of increasing the investment-to-gross domestic product (GDP) ratio, and advancing toward better-skilled human capital". Explain how one of these measures stated in Extract 9 could improve Brazil's export competitiveness.	[3]
(d)		Using Extract 8, explain why the "winners" of BRICS may continue to face economic challenges.	[7]
(e)		Discuss how China's policy reforms in Extract 10 will impact the Chinese economy.	[8]
(f)		In the light of the information provided in Extracts 11 and 12, discuss the relative appropriateness of the approaches undertaken by the Singapore government and BRICS nations in attaining inclusive growth.	[12]

[45 marks]

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Question 2: Inclusive Growth in BRICS and Singapore

Suggested Answers

(a)	**(i)**	Using Figure 2, describe the trend in BRICS nations' GDP growth from **2010 to 2018.** **General trend** • All BRICS nations' GDP growth generally fell from 2010 to 2018. [1] **Refinement of trend** • China and India still managed to enjoy +ve growth of above 5% throughout. OR • Brazil and Russia, however, both had negative growth between 2014 and slightly before 2017, with 2015 having the greatest fall in GDP at a rate of -4%	**[2]**
	(ii)	**With reference to Extract 7, explain one possible reason for the trend in GDP growth for BRICS nations.** **A fall in net exports due to weak global trade**. [1] For example, Extract 7 states that there was a steady decline in commodity prices and it had set back growth in commodity-exporting BRICS such as Russia, Brazil, and South Africa. This is assuming PED for the commodities was less than one, the fall in commodity prices would cause a fall in export revenue of BRICS nations. The fall in net export revenue would dampen the increase in AD of BRICS nations. Due to the slower increase in AD, BRICS nations experienced slower growth. [1] OR **A fall in investment.** [1] Extract 7 states that there was a sustained decline in productivity and bouts of policy uncertainty in BRICS nations. This means that due to the sustained decline in productivity, the firms in BRICS nations might experience a rise in unit cost of production, leading to a fall in expected returns of investment. Furthermore, due to policy uncertainty, the firms would not be able to predict about their expected returns of investment, causing them to lose confidence to invest in BRICS nations. As a result, the level of investment in BRICS nation might fall. [1] This fall in investment would dampen the increase in AD of BRICS nations. Due to the slower increase in AD, BRICS nations experienced slower growth. [1]	**[2]**

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		The student could also link to a fall/slower increase in AS curve of BRICS nations due to lower investment/decline in productivity. *Note for markers: If students say that AD falls (instead of explaining the slower increase in AD), cap at 1m*	
(b)	**(i)**	**From Table 2, identify the country that experienced the least improvement in material standard of living in 2017 and explain the reasons for your choice.** Answers: • South Africa experienced the least improvement of standard of living in 2017. [1] Reasons: • Assuming population size of all countries remained constant (or changed negligibly) over the course of one year in 2017 [1], South Africa experienced the lowest rate of real GDP growth, which means that an average household enjoyed the least increase in disposable income which allowed them to enjoy the lowest increase in the amount of goods and services consumed. [1]	**[3]**
	(ii)	**Using Figure 3, compare the income distribution between South Africa and India.** Answers: • South Africa's income distribution is worse than India's income distribution [1] Reason: This is because the 20% richest people in South Africa enjoyed a greater proportion of the national income as compared to the 20% richest people in India while the 20% poorest people in South Africa enjoyed a lower proportion of the national income as compare to the 20% poorest people in India. This suggests that the rich-poor gap is larger in South Africa as compared to India. [1]	**[2]**
	(iii)	**Comment on whether the data supports the view that South Africa experienced a lower standard of living compared to India in 2017.** Answers: <u>Side 1: Data supports the view that South Africa experienced a lower standard of living compared to India in 2017 [2]</u> ***Material SOL was lower in South Africa*** **Reason**: From Table 2, South Africa's **unemployment rate was higher** than India's in 2017. • When unemployment rate is higher in South Africa, it means that there was a greater proportion of the labour force in South Africa not being able to find a job and earn a living. • With lower income, an individual in South Africa might not be able to consume more goods and services as compared to an individual in	**[5]**

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India. Hence, material standard of living (i.e. SOL) is lower in South Africa, as shown by the unemployment rate data.

Reason: From table 3, South Africa's **income distribution is more unequal** than India's income distribution.

- Even though South Africa's GDP per capita PPP (in USD) is higher than India's as shown in Table 1, income distribution was more unequal between the rich and the poor.
- This shows that an average person living in South Africa might not necessarily earning higher income than an average person living in India as the higher national income in South Africa might be contributed by the minority rich.
- Hence, material SOL in South Africa might be lower as a greater proportion of household in South Africa might be earning lower income and hence consuming lower amount of goods and services.

Award 1m for any one of the above reasons.

Non-material SOL is lower in South Africa

Reason: From Table 2, South Africa's **life expectancy was lower** than India's in 2017.

- When life expectancy was lower in South Africa, it means that an average person in South Africa might not be able to access to better quality healthcare facilities. A typical South African might not be able to cure illnesses to enjoy better quality of life.
- Due to lower quality of life, South Africa's non-material SOL was lowered as compared to India's as shown by the data on life expectancy.

Award 1m for explaining non-material SOL in South Africa is lower.

<u>Side 2: Data does not supports the view that South Africa experienced a lower standard of lower standard of living compared to India in 2017 [2]</u>

Reason: Insufficient data to compare material and non-material SOL

Several relevant info missing. E.g.:

- Type/nature of goods produced in India. If India's output are mainly due to non-consumption goods/service. Its mat-SOL may not be higher.
- Pollution level. If India's pollution level is severe, non-mat SOL may not be higher too.

OR

Reason: The data shows that in some ways, South Africa might have a higher standard of living compared to India in 2017

E.g.

- South Africa had a higher GDP per capita (PPD-adjusted) than India in 2017 which suggested that the average person living in South Africa had access to more goods and services and thus could enjoy a higher material standard of living.

Conclusion,

Hence, even though the data found in Table 2 and 3 could help us to estimate that South Africa's material and non-material SOL was lower

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		than India's, it is hard to accurately conclude South Africa's SOL was indeed lower than India's due to insufficient data. [1]	
(c)	**(i)**	**Explain what it means by a fall in export competitiveness.** Answer: A fall in export competitiveness means that price of a country's exports is higher as compared to other countries' exports or that the quality of a country's exports is lower as compared to other countries' exports. [1] OR A fall in export competitiveness means that a country would not be able to compete with other countries in terms of price or quality of her exports. [1]	**[1]**
	(ii)	**Extract 9 states that there was an "urgency of the measures of increasing the investment-to-gross domestic product (GDP) ratio, and advancing toward better-skilled human capital".** **Explain how one of these measures stated in Extract 9 could improve Brazil's export competitiveness.** Answer: Increasing investment to gross domestic production means increasing the amount of investment which involves an accumulation of capital goods. Accumulation of capital not only increases the quantity of factors of production but could also mean better methods of production e.g. advancement in technology.[1] Hence cost of producing exports can be lowered, improving Brazil's export competitiveness in terms of price. [1] Better skilled human capital allows labour to better make use of advanced technology and embark on innovation. This could improve labour productivity [1] which in turn helps to reduce unit cost of production of exports. Due to fall in unit cost of production, Brazil's export competitiveness would improve in terms of price. **OR** Better skilled human capital allows labour to better make use of advanced technology and embark on innovation. This could help to produce better quality goods/service, i.e. with less defects and better meet consumers' tastes and preferences. This improves competitiveness in terms of quality.	**[3]**
(d)		**Using Extract 8 explain why the "winners" of BRICS may continue to face economic challenges.** From Extract 8, China and India are the clear "winners" of BRICS due to the high rates of growth experienced for the past decade. This means that China and India could have experienced large increases in actual growth as AD increases from within the Keynesian range of AS to the	**[7]**

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intermediate range of AS. There has been better utilisation of resources. Material SOL of Chinese and Indian citizens have increased.

However, they may continue to face economic challenges as inequality and poverty remain to be significant issues for the economy. Since the poor cannot gain access to essential goods/services, the microeconomic goal of equity is undermined.

Rising structural unemployment poses macroeconomic difficulties for the economies as seen from extract 8, "Both countries are especially vulnerable to technological changes that bring automation into the workplace on a larger scale." Technological disruptions may be due to structural reforms taking place in India and China. Existing industries find themselves less competitive and they may shut down. Workers' skills become irrelevant with automation. If unemployed workers cannot find jobs that match their skills, structural unemployment takes place.

Also, leaders of both nations recognise that inflationary pressure might be a concern as each of their economies continues to grow with rapid increase in AD in these two countries with the largest populations in the world. From extract 8 also, "China also faced increasing wage pressure" which show that cost-push inflation may hinder China's macroeconomic progress.

Hence, unless productive capacity increases, inflationary pressure will increasingly become a concern for both China and India.

L3	Well-elaborated explanation of economic challenges to China and India with clear link to economic aims	6-7
L2	Undeveloped explanation of economic challenges to China and India with link to economic aims	3-5
L1	There are some mention of economic challenges with no clear link to economic aims.	1-2

(e) **Discuss how China's policy reforms in Extract 10 will impact the Chinese economy.** **[8]**

INTRODUCTION
China has embarked on both demand and supply-side policies in 2016 in efforts to combat slowing growth. These reforms are likely to positively impact the Chinese economy

BODY
<u>Demand-side policies</u>
Expansionary monetary policy was undertaken and this can be seen from Extract 10 "PBOC has cut interest rates six times since November last year." A cut in interest rate will cause cost of borrowing to fall → expected returns to investments increase ➔ I increases. Also, since cost of borrowing falls, consumers will be more inclined to purchase big ticket items such as houses and cars ➔ C increases. Given the large population size of China and the rapid rise in income of middle class, AD is likely to increase significantly → Real NY increases via k → actual economic growth → combats slowing growth. Employment increases too.

In addition, there is an expansionary FP suggested by its budget deficit in 2016 to support a slowing economy. The government has also stepped

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up spending (G) on infrastructure projects and eased restrictions on home buying to boost the sluggish property market. Tax cuts will boost consumption since disposable income of households increase. Since C , I and G are components of AD → AD is likely to increase significantly → Real NY increases via k → actual economic growth → combats slowing growth. Employment increases too.

<students may use a AD/AS diagram to support the above analysis>

Limitations/Disadvantages:

- DD-pull inflationary pressure as AD increases
- Crowding out effects with FP since govt borrows to fund G
- Interest inelasticity of demand for investments or Nearing liquidity trap.
- Small multiplier → Chinese are huge savers

Supply-side reforms

"Top leaders also pledged to push forward "supply-side reform" to help generate new growth engines, while tackling factory overcapacity and property inventories." This means that China is aiming to increase the efficiency of major sectors, or to improve allocation of resources like labour and capital from inefficient to efficient sectors. As resources are re-allocated from inefficient sectors to more efficient sector, more innovation can take place within the efficient sectors. There can be more productive and cost-efficient production methods.

➔ Both LRAS and/or SRAS shift(s) will be accepted

Limitations/Disadvantages

Such policies take time, may not be effective to boost economic growth in the short term

SYNTHESIS/CONCLUSION

All in all, China's policy reforms are multi-pronged and are likely to bring about positive impact on its economy. With both DD and SS side policies in place, China is likely to be able to combat its slowing growth. Inflationary pressure will be the main concern of the government but given the amount of control the government has over its economy (China is still considered a command economy), they are likely to mitigate the inflationary pressures. Furthermore, Chinese government has huge reserves to see through its LR supply policies while implementing SR dd-side policies. Hence, the government should continue to monitor and refine its policies in order to ensure long-term success.

L2	An answer that explains how the reforms identified from Extract 10 work to create positive and negative impact on China's key economic indicators.	4-6
L1	An answer that superficially explain how the reforms work with no or little links on how they could impact on China's key economic indicators.	1-3

In addition, **up to a further 2 marks** for valid evaluative comment. This should focus on the overall effectiveness of the reforms to create positive impact on Chinese economy.

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(f)		**In the light of the information provided in Extracts 11 and 12, discuss the relative appropriateness of the approaches undertaken by the Singapore government and BRICS nations in attaining inclusive growth.** INTRODUCTION Inclusive growth refers to economic growth that is equitable and helps in reducing poverty. *Inclusive Growth is extended economic growth that is broad based across sectors and creates productive employment opportunities for all segments of the country's population. Inclusive growth distributes income from economic growth, in monetary and non-monetary terms, fairly across society. It should not worsen income inequality.* Singapore and BRICS economy are different by nature and state of development. Singapore can be considered as a relatively developed economy while BRICS are the emerging markets that have grown significantly over the past decade (extract 1). Hence, the approaches undertaken by the governments to attain inclusive growth differ greatly. BODY **Thesis 1: Singapore government's approaches to attain inclusive growth are appropriate** **(i) Pioneer Generation Package** Under the Pioneer Generation Package, senior citizens aged 65 and above are given benefits to meet their healthcare costs for life, with further subsidies on outpatient medical services. In this way, even though these senior citizens, who might have retired, are not earning an income, they would have access to more affordable healthcare services. Due to such redistributive measures through subsidies, inequity would be alleviated and hence achieve a more inclusive society. **(ii) Wage Credit Scheme** To help companies compensate rising wage costs, the Singaporean government introduced the Wage Credit Scheme (WCS), co-funding a proportion of the wage increases for low-wage workers (40% during 2013 – 2015 and 20% during 2016 – 2017). In this way, the income of lower-income Singaporeans, whose wages might have depressed by incoming foreign workers, would increase, enabling them cope with the rise in the cost of living. Furthermore, this scheme also flows back additional foreign worker levies collected in a meaningful way to support productivity and gainsharing. As government provides support for companies to manage rising wage cost in a tight labour market, it frees up resources for businesses to invest in productivity. Hence, the scheme not only helps to reduce income inequality but also helps employers share productivity gains with their employees, encouraging inclusive growth.	**[12]**

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(iii) **Progressive Wage Model**

The Progressive Wage Model (PWM) is a productivity-based wage progression pathway that helps to increase wages of workers through upgrading skills and improving productivity. It is mandatory workers in the cleaning, security and landscape sectors who have been earning low wages that hardly rose.

Under the PWM, the employers would have to pay their workers entry-level basic wages of at least S$1,000 a month. Furthermore, the employers must find ways to help their cleaners achieve better skills and higher productivity so that they can earn higher wages and meet higher service standards.

In this way, the workers under the PWM would be able to achieve sustainable wage increases through better skills and higher productivity and enable help companies make better use of and retain manpower, instead of retrenching workers.

An increase in productivity in all sectors with lower wage workers earn higher wages that help close the income gap between the rich and the poor, Singapore would be able to achieve sustainable and inclusive growth.

Anti-thesis 1: However, the approaches by the Singapore government may not be so appropriate

(i) Strain on government budget and hence the possibility of raising taxes to sustain approaches

- The above approaches require government to incur spending and hence might cause a strain on fiscal budget. Hence, in view of future uncertainty, the approaches might not sustainable.

  Evaluative comment (not necessary but possible points to get evaluation marks)

- Hence to ensure sustainability, it is inevitable to increase taxes to finance the increased social spending. Such tax increase to finance the increased social spending might end up causing work disincentive and hence lower labour productivity among higher income workers.

(ii) The government might face challenge in estimating the right amount of subsidies given to the senior citizens and wage increment to the lower income workers that ensures the effectiveness of the approaches.

- There might be a possibility that Singapore government might underestimate the amount of subsidies or wage increment given, resulting income inequality not alleviated effectively.

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(iii) There might be a tendency for companies to abuse the programmes.

- Take for example, under the wage credit scheme, employers have been caught making fraudulent claims under the Wage Credit Scheme. Some false claims include inflating wages for family members who were not employees. On some instances, company owners hired phantom workers to qualify for the payout.
- As a result, in order to curb such abuse or cheating cases from rising, the Singapore government might need spend resources to monitor appropriate behaviour among firms.

Thesis 2: BRICS nations' approaches to attain inclusive growth are appropriate

(i) To create a business friendly environment for investors in member countries; and to promote mutual trade

- Job creation, including quality jobs, is a necessary step towards inclusive growth in developing countries such as the BRICS nations. Hence, it is important for BRICS to achieve actual growth in the short run and hence create quality jobs.

(ii) Actual growth can be inclusive by engaging various sectors of the economy.

- Increase I → "create a business-friendly environment for investors and entrepreneurs in all member countries,
- Increase FDI and (X-M) → to promote mutual trade and investment; and facilitate market inter-linkages and enhance market access opportunities."
- Above underpinned by strengthened resilience to external economic shocks and strengthen macro-economic policy coordination → promoting information exchange through agreed platforms and by deepening our interaction and cooperation with non-BRICS countries, international organizations and forums.
- <<Explain with AD/AS>> → Due to an increase I and (X-M) → AD increase → illustrate that there is short run actual growth and creation of jobs.
- As GDP increases, residents and firms in BRICS would be earning higher income and higher profits. This would give rise to higher tax base which governments could raise higher tax revenue to fund more social services, thus ensuring equity.
- Without SR actual growth, not possible to have inclusive growth.

(iii) To encourage greater innovation and start-ups in BRICS

- **Greater innovation and start-ups through encouraging entrepreneurship in BRICS would help increase productivity and productive capacity.**

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- Innovation and start-ups involves accumulation of capital goods → productive capacity increase → LRAS increase.
- Greater innovation and start-ups might also involve technological advancement and this in turn increases future business productivity. An improvement in business productivity in the future would lower down unit cost of production→increase SRAS.
- This increase in aggregate supply would result in greater room for future growth to take place, leading to sustainable growth.
- Such increase in potential growth is important for BRICS countries to reduce inflationary pressure should they experience a fast increase in their aggregate demand near the full employment level of output.
- As GDP increases in the future, residents and firms in BRICS would be earning higher income and higher profits in the future. This would give rise to higher tax base which governments could raise higher tax revenue to fund more social services, thus ensuring equity.

Anti-thesis: However, BRICS nations' approaches may not be so appropriate

(i) Innovation policies tend to focus on productivity and growth objectives, rather than on how the fruits of growth are distributed. As a result, inclusive growth might not be attained in BRICS nations.

- As nations climb up the technological ladder or becoming an innovation-intensive economy, some groups (namely those holding assets and skills required) would benefit more than others. This means trade-offs between growth and inclusiveness can arise where policies focus strongly on supporting innovation in leading businesses, research institutions and activities. Such strategies provide few opportunities for those that do not aid the innovation or technological advancement.

(ii) Entrepreneurship in BRICS nations might not be effectively promoted especially in the rural areas. As a result, inclusive growth might not be attained in BRICS nations.

- In developing countries especially in the rural areas, would-be entrepreneurs might be from the poorer strata of society and as a result face even greater barriers, especially in access to finance such as bank loans or financial assistance such as grants for unemployed who wish to start a business.
- As a result, due to unequal access to financial capital, the growth would end up unequal in different segments of the economies of BRICS nation.
- Income inequality might happen → inclusive growth not achieved.

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		Evaluative comments *(not necessary but possible points to get evaluation marks)* **Hence, in view of the above limitations/challenges in achieving inclusive growth, it is important for BRICS nations to complement the approaches with inclusive and collective solutions as mention in Extract 11.** • Take for example, BRICS nation could implement policies to make entrepreneurship more inclusive by including more financial assistance for would-be entrepreneurs from rural areas or from poorer strata of society, even if their ideas could only result in small enterprises. • Furthermore, to ensure inclusive growth via innovation, BRICS could implement inclusive innovation that • ***Evaluative comment (not necessary but possible points to get evaluation marks)*** • The 5 governments may have different objectives at different times, difficult to have a collaborative/collective effort for inclusive growth. The poor tend to be left behind when these economies grow too fast SYNTHESIS/CONCLUSION **Compare relative appropriateness** *All in all, the measures undertaken by the Singapore government and BRICS nations differ due to the different nature of the economies and state of development.* *The measures can be considered appropriate to a large extent as they all has the same aim of attaining growth and improvement of their economies without leaving behind the lower incomes/poor.* *Given that BRICS nations' state of development are still emerging, the approaches mentioned in Extract 11 focus more on attaining more sustainable growth, with little plan to reduce existing poverty and inequity.* *On the other hand, Singapore state of development is more mature with higher growth that enable the government to enjoy greater fiscal budget. With greater budget and rich reserves, it is likely that Singapore are able to sustain the social spending or redistributive policies such as pioneer generation package.* *Hence, overall, it can be said that Singapore government's approach may be more appropriate in attaining inclusive growth given the current state of development, assuming there is no government failure in estimating the wage increment or subsidies.*	

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Nonetheless, in the longer run, if the BRICS governments refine policies to ensure that benefits of growth are well spread across different segments of populations, the current policies to attain sustainable growth for inclusive growth to take place are appropriate.

L3	An answer that explains how Singapore and BRICS nations could implement one approach in each of their countries to achieve inclusive growth + limitations.	6-9
L2	An answer that explains at least 1 approach each for Singapore and BRICS nations to achieve inclusive growth. **-**HOWEVER, there is NO attempt to discuss the limitation for the approaches. OR An answer that explains at least 1 approach that Singapore/BRICS nations could implement to achieve inclusive growth WITH limitations. **-**HOWEVER, there is NO attempt to explain the approach that BRICS nations/Singapore could implement to achieve inclusive growth.	4-5
L1	An answer that superficially touches on the working of the approaches identified from the extracts to achieve inclusive growth in Singapore and/or BRICS nations. The links to the concept of inclusive growth are weak.	1-3

In addition, **up to a further 3marks** for valid evaluative comment. This should focus on “comparing the relative appropriateness’ aspect of the question.

-THE END -

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SERANGOON JUNIOR COLLEGE
JC2 Preliminary Examination

ECONOMICS **8823/01**
Higher 1

10 September 2018

3 hours

Additional Materials: Writing Paper

READ THESE INSTRUCTIONS FIRST

Write down your name and civics group 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.

Start your answers to each case study question on a new sheet of writing paper.
After the examination, fasten your answers to questions 1 and 2 separately.

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

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

This document consists of **8** printed pages.

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Answer **all** questions.

Question 1: Building a Smart Nation

Table 1: Mobile and Broadband Internet Subscription in Singapore

	2012	2013	2014	2015	2016	2017
Total Mobile Phone Subscriptions ('000)	8,063	8,420	8,093	8,211	8,399	8,462
Total Broadband Internet Subscriptions ('000)	10,194	10,653	11,537	11,992	12,543	13,072

Source: Info-communications Media Development Authority, Singapore, accessed July 2018

Extract 1: Towards Smart Nation Singapore

The need for Singapore to be a "smart nation", using the latest technology to benefit the country, is about making life better for the people and more. Bringing the current piecemeal uses of technology into a cohesive, nationwide whole "will make our economy more productive, our lives better, and our society more responsive to people's needs and aspirations", Prime Minister Lee Hsien Loong said yesterday at the launch of the Smart Nation initiative. He also envisions it helping the nation to keep abreast of leading cities such as Shanghai, San Francisco and Sydney.

The Government embraced technology to integrate digital technology seamlessly across work, households and public services to boost efficiency and quality of life. One major initiative will be to let people access maps and build up geospatial databases by contributing information such as animal sightings, traffic incidents or the best eateries. During his 35-minute speech, Mr Lee also used an improved mobile application for planning bus journeys, to demonstrate how technology can make life more convenient. "If we can automate the things that are routine, then we can concentrate on the things that really matter."

Source: *The Straits Times*, 25 November 2014

Extract 2: Is Singapore's telecommunications market saturated?

The telecommunication industry is ending 2017 with the worrying prospect of a tougher new year. The frantic jostling for market share that marked this year can only intensify as new candidates such as Australian start-up Zero Mobile and TPG Telecom enter the market and get ready for battle.

The pressure has been keenly felt in the consumer mobile segment. As OCBC Investment Research analyst Eugene Chua puts it: "It is certainly crowded for a relatively small and saturated market, with little differentiation in network coverage." Juvanus Tjandra, who heads KPMG's telecommunications, media and technology practice, says: "Looking further ahead, telecommunication companies appear to be bracing themselves for a potential price war and fight for market share by offering lower-tier SIM-only price plans that consumers can leverage without the need of a long-term contract."

StarHub Pay-TV has also been affected, as offerings like Netflix and Amazon Prime Video chip away at "triple play" which refers to the bundle of mobile, broadband and cable TV services. Mr Tjandra notes that incumbents have worked to address the challenge. StarHub partnered Netflix last year to bring the service to set-top boxes and high-definition streaming.

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OCBC's Mr Chua notes: "The most obvious route so far is diversifying away from the traditional telco space - that is, voice and data services - towards providing enterprise digital solutions and related services." And incumbents such as Singtel have already made a play for the enterprise segment, in areas such as cyber security, digital advertising and data analytics.

Meanwhile, gazing into StarHub's crystal ball, Mr Tan, outgoing chief executive of StarHub says: "We believe two types of service providers will co-exist in the mobile market: a few full-service telcos, and many MVNOs that are focused on serving niche market segments, such as the youth, foreign workers, expatriates, tourists and so forth."

Source: *The Straits Times*, 28 December 2017

Extract 3: Info-communication technology sector needs more Singaporeans

Singaporeans were yesterday urged to join the information and communications technology (ICT) sector, which is set to be "abundant" in opportunities and growth potential. Minister for Communications and Information Dr Yaacob Ibrahim made the call, stressing that he needs Singaporeans due to the security concerns of some ICT sectors, particularly cyber security. He added that many industries depend on ICT and it can increase efficiency and productivity.

The growth of the industry will not only create thousands of jobs, but also open new frontiers for the businesses that take advantage of trends like artificial intelligence. Unveiling the Industry's Transformation Map yesterday, Dr Yaacob let some numbers speak for themselves: By 2020, the sector that already employs 194,000 people will create another 16,000 jobs.

Source: *The Straits Times*, 4 November 2017

Extract 4: Free Wi-Fi at all MRT and LRT stations by 2020

Following in the footsteps of major cities such as New York and Seoul, commuters here will be able to access free Wi-Fi services at all MRT and LRT stations as well as bus interchanges and terminals by 2020. The service has seen 700,000 logins daily at the MRT stations and the trial for the 33 stations cost about S$7.9 million.

Transport analysts agreed that providing wireless connectivity will enhance the commuting experience here but noted the need to have sufficient bandwidth to accommodate the anticipated high Wi-Fi usage. As providing large bandwidth can be costly, experts pointed out that one way to manage the situation could be to offer limited usage on a monthly basis for each commuter which was found to be sufficient for commuters during the trial period. National University of Singapore transport researcher, Lee Der Horng noted that the move to roll out wireless service is in line with the LTA's MyTransport.SG mobile application providing real-time bus and train-platform crowd updates. "Commuters will be better connected with traffic related updates when they are on the move and LTA can also use the data to generate insights on crowd behaviour and improve the delivery of our public transport services."

Source: *Channelnewsasia,* 13 Oct 2015

Extract 5: Measures to promote digitalisation in Singapore

The drive to be a Smart Nation - essentially adopting and reaping the benefits of technology - has made headlines in recent months, even taking centre stage in Prime Minister Lee Hsien Loong's National Day Rally speech in August.

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Some of us fear that technology will take away our jobs. On the flip side, going digital can empower and enable us to work more efficiently and effectively. Students would be better prepared for future jobs in a digital age, many of which we may not be able to imagine today. Workers would be better equipped with digital skills, and even more empowered in future workplaces. In addition, businesses can leverage digital capabilities to seize growth opportunities and new markets.

Digital transformation can lead to many opportunities for all and the authorities are making concerted efforts to ensure no one is left behind. Some initiatives to help with the digitalisation of the economy include:

- Silver Infocomm Initiative (SII)
  The initiative aims to bridge the digital divide with those over 50 and includes activities such as the Silver Information Technology (IT) Fest and mass IT training classes. The Silver IT Fest is an annual event organised by the Info-communications Media Development Authority (IMDA) with multiple components such as hands-on training workshops, exhibition and seminars held in heartland areas to allow people to experience technology in different ways.

- NEU Personal Computer (PC) Plus Programme
  The programme includes the provision of new computers bundled with three years of free broadband access, at an affordable price. Since its introduction in November 2006, the enhanced programme has benefitted 33,000 low-income households with school-going children or people with disabilities.

- SMEs Go Digital Programme
  The initiative has three components which takes aim at helping small and medium-sized enterprise (SMEs) build digital capabilities. SMEs can expect step-by-step advice on the technologies they can leverage at each stage of their growth through sectoral Industry Digital Plans (IDPs). They can also receive free business help at SME Centres when it comes to getting information on government schemes and pre-approved off-the-shelf technology solutions. Advice and funding support will also be prepared for SMEs that are ready to pilot emerging ICT solutions.

Source: Adapted from *The Straits Times*, 19 Nov 2017 and *www.guidemesingapore.com,* accessed July 2017

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Questions

(a) **(i)** With reference to Table 1, compare the trend of mobile phone subscriptions with that of broadband internet subscriptions from 2012 to 2017. [2]

(ii) Using a supply and demand diagram, explain how Singapore's "Smart Nation" initiative and the entry of new telecommunication operators have accounted for the trend of total broadband internet subscriptions as identified in (a)(i). [6]

(b) Explain how the competitive strategies adopted by the telecommunication operators would impact their revenue and comment on the sustainability of these approaches. [7]

(c) Extract 3 outlines various effects that an expansion of the information and communication technology (ICT) sector can have on the Singapore economy. Explain the effects and illustrate your answer with PPC diagram(s). [5]

(d) Explain why the statement "By 2020, the sector that already employs 194,000 people will create another 16,000 jobs" in Extract 3 is considered a positive statement. [1]

(e) **(i)** State the main characteristics of a public good and explain why Wi-Fi is not classified as a public good. [4]

(ii) With the aid of diagram(s), explain two reasons why the Singapore government would want to follow in the footsteps of major cities such as New York and Seoul to intervene in the provision of Wi-Fi. [8]

(f) Using case evidence and your own knowledge, discuss the effectiveness of alternative government policies to ensure allocative efficiency in the market for digital services. [12]

[Total: 45]

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Question 2: Issues on growth, employment and equity

Table 2: Macroeconomic indicators of Japan and the US, 2016

	Japan	US
Gross Domestic Product (% change)	1.3	2.8
Consumer Price Index (% change)	-0.1	1.3
Exports (US$ million)	644,899	1,451,011
Imports (US$ million)	607,602	2,315,253

Source: *www.imf.org*

Extract 6: US economy grew at 3.2% in the third quarter

The US economy in the third quarter grew at the fastest pace in two years. The latest look at GDP showed that consumer spending grew at a rate of 2.8%. Another area of strength was in export sales which grew at 10.1%. The economy was expected to grow 1.5% for the full year of 2016.

During the recent presidential campaign, Mr Trump said he wanted to set a national goal of reaching 4% growth during his administration. Some economists think that may be overly optimistic, given tepid labour productivity growth and the mass retirement of baby boomers. Other economists have said they will increase their economic growth forecasts if Mr Trump is successful in getting the government to pass his package of tax cuts and increased spending in areas such as military and infrastructure projects.

Source: *The Associated Press*, 29 November 2016

Extract 7: Eurozone prepares for quantitative easing

The European Central Bank (ECB) is expected to announce in 2015 that it is going to buy substantial volumes of government debt using newly created money – a policy known as Quantitative Easing (QE). QE is on their agenda because the traditional ammunition of lowering interest rates is ineffective as the ECB's interest rate is just about zero.

The problem the ECB wants to tackle is inflation that is too low. Indeed last month it turned into deflation, or falling prices. Deflation is partly a symptom of the Eurozone's persistent economic weakness. But it could also aggravate it. Deflation tends to be bad for debtors. The problem is that their incomes may fall, but their debt payments - if their debt involves fixed interest rates - may not. With governments, falling prices and incomes will hit revenue from income tax and value-added taxes.

Source: *BBC News*, 22 January 2015

Extract 8: A good but not perfect jobs report

After a year of solid job growth, the Labour Department reported that the unemployment rate dropped to 4.6% - the lowest since before the recession. The US economy added 178,000 jobs in November 2016.

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The numbers are once again indicative of steady economic growth, but there is less positive news. While the number of jobs added and the lower unemployment rate bode well for the state of the economy, economists have been looking for wage growth. This is because in October, wages rose at 2.8% but in November, wage growth was down to 2.5%.

Furthermore, the blue collar workers feel left behind in the economic recovery. President Trump promises to bring back manufacturing jobs from other countries and boost job growth overall. But one major challenge Trump will face is that many manufacturing workers who lost jobs do not have the advanced skills required for the new jobs. Meanwhile, the number of discouraged workers who have lost jobs, are not returning to the labour market to look for jobs.

Source: Various

Extract 9: Why we need to promote inclusive growth for healthy economies

The development challenges of the 21st century remain vast. Poverty has fallen in recent decades as economies have grown but many countries have experienced rising income inequality. Economies will need to be transformed if they are to ensure sustained improvements in living standards for all the world's citizens. Many transformations – wider access to healthcare, better quality education, basic services such as energy, and infrastructure that promotes industry and innovation – are important inputs to economic growth that is inclusive and sustainable.

Recent data analysis strongly suggests that rising income inequality is bad for growth. For instance, wealthier households typically spend a smaller percentage of their income, dampening aggregate demand while poorer households find it harder to invest in health and educational opportunities, which means a nation accumulates less human capital and finds it harder to make gains in productivity. At extreme levels, inequalities can threaten social unrest, thoroughly undermining economic activity. Spreading the gains makes growth more resilient to shocks and more sustainable in the long term.

Source: *www.huffingtonpost.com*, 20 January 2017

Extract 10: The Economic Strategies Committee (ESC) on fostering inclusive growth

Over the past decade, Singapore's economy grew by an average of 5% per annum. Singapore's productivity growth over the same period averaged about 1% per annum, a rate on par with that of other developed countries. The broad majority of Singaporeans also enjoyed real wage growth and a rise in living standards. Nonetheless, productivity gains have declined in recent years due to heavier reliance on labour inputs to generate economic growth, especially inputs of foreign manpower. Globalisation, increased competition and lack of relevant skills have also led to slower wage growth for low-wage workers; wages of the bottom 20th percentile worker grew by only 1.2% per annum over the period.

Only productivity-driven growth can continue to deliver sustainable and inclusive economic development, so as to improve the quality of life for all Singaporeans. Two of the recommendations of the ESC are:

Recommendation 1: Setting up a National Productivity Fund

Accelerating enterprise productivity will entail more than just changing work attitudes or raising quality – a focus of earlier productivity efforts. It will require significant transformations in the way companies manage their businesses, from their supply chain management, production methods to service provision. In addition, enterprises are expected to deliver innovative products and services that can command higher value and tap into new markets.

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One way to encourage enterprises to undertake initiatives at a national and sectoral level to accelerate large-scale productivity transformation is to set up a National Productivity Fund. This fund is to provide grants to support both industry-wide and enterprise-level productivity initiatives, in areas such as the adoption of innovative business models, processes or technology, research and benchmarking, and other proposals which would be useful for productivity improvements.

Recommendation 2: Review Workfare Income Supplement Scheme

As Singapore transforms its economy, it must make extra efforts to ensure that economic growth uplifts and upgrades low-wage workers as well. In 2007, the government introduced the Workfare Income Supplement (WIS) Scheme to help older low-wage workers supplement their incomes and build up their retirement savings. WIS rewards regular work and individual effort by providing cash and CPF payouts to help with expenditure needs and retirement savings of older lower-wage workers and persons with disabilities (PWDs) who work. What WIS does is help to boost what individuals may be earning, but without imposing that burden on companies that may be worried about their bottom line. This is meant to help individuals, to make sure they remain employable.

The government should review the WIS to ensure it is focused, timely and effective. The changes to WIS should aim to provide a more direct and timely reward for work effort, and ensure that WIS continues to provide a meaningful level of support for eligible workers.

Source: Adapted from Economic Strategies Committee (ESC), ESC Subcommittee on *Fostering Inclusive Growth* and *Factsheet on Enhancements to Workfare, Ministry of Manpower*

Questions

(a) Using Table 2, compare the economic performance of Japan and the US. [4]

(b) With the aid of an AD/AS diagram, explain the possible internal and external factors that could have contributed to the projected slow economic growth of 1.5% in the US (Extract 6) and comment on whether 4% is an achievable economic growth target. [8]

(c) With reference to Extract 7:

(i) Explain one reason why lowering interest rate is ineffective in tackling deflation in the Eurozone. [2]

(ii) Explain the impact of deflation on debtors and governments. [4]

(d) **(i)** Explain why wages are expected to rise when there is economic growth. [2]

(ii) Using Extract 8, discuss whether a drop in unemployment rate is indicative of an improvement in a country's standard of living. [8]

(e) Suggest one indicator that can measure income inequity and explain how rising income inequity (Extract 9) could hamper an economy's international competitiveness. [5]

(f) Using the case study and your own relevant knowledge, discuss the factors that the Singapore government needs to consider in deciding whether to take up the recommendations by the Economic Strategies Committee to 'improve the quality of life for all Singaporeans'. [12]

[Total: 45]

Commented [WKSJ1]: Decided to remove the first part about 'State how unemployment rate is calculated and.....' cos it is disjointed with 'explain why wages are expected to rise when there is EG' – I think we kept this because we tot it will help in (d)(ii) but not much help anymore I think. Shifted the additional 1 mark to (d)(ii)

Commented [SBA2]: Is this about benefits and costs of each recommendation?

Commented [SBA3]: They are to discuss the 2 recommendations right? I suppose the answer does not expect students to talk about other recommendations? But if they know of others, they can include. Am I right?

Also the 2 recommendations focused on low wage workers only. You have other recommendations not about low-wage workers?

Commented [SBA4]: Can I ask if they are expected to evaluate each recommendation's benefit and costs? You have two recommendations.

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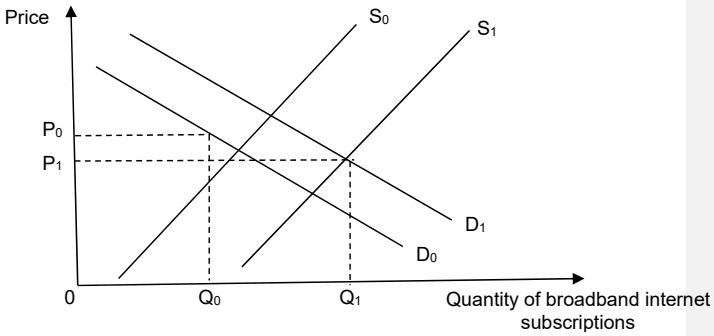
H1 CSQ 1 Suggested Answers

(a) **(i)** With reference to Table 1, compare the trend of mobile phone subscriptions with that of broadband internet subscriptions from 2012 to 2017. [2]

- Both mobile phone and broadband internet subscriptions increased.
- Broadband internet subscriptions increased at a faster rate (28%) as compared to mobile phone subscriptions (5%).

(ii) Using a supply and demand diagram, explain how Singapore's "Smart Nation" initiative and the entry of new telecommunication operators have accounted for the trend of total broadband internet subscriptions as identified in (a)(i). [6]

- Broadband internet subscriptions have increased sharply in (a)(i) due to a rise in both demand and supply factors which accounted for the large increase in equilibrium quantity.
- The Singapore's "Smart Nation" initiative suggested in Extract 1 drives up demand for broadband internet subscriptions where "The Government embraced technology to integrate digital technology seamlessly across work, households and public services" and "let people access maps and build up geospatial databases by contributing information such as animal sightings, traffic incidents or the best eateries". The government's initiative to go seamless might have served as a huge impetus for Singaporeans who does not have broadband subscriptions to sign up for one in order to access government provided services such as "maps and geospatial databases". Hence this led to a rise in demand for broad band internet subscriptions and caused a rightward shift of the demand curve,
- In extract 2, "new candidates such as Australian start-up Zero Mobile and TPG Telecom enter the market and get ready for battle" suggests the entry of new telecommunication operators into Singapore which led to an increase in the no of service providers of broadband internet. This rise in SS will cause a rightward shift of the SS curve.
- Together a simultaneous rise in supply due to the entry of more broadband internet operators and rise in demand due to more consumers now utilising broadband internet services to access government led to a large increase in the equilibrium quantity for broadband internet subscription from Q_0 to Q_1 as shown in the figure below.



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(b) Explain how the competitive strategies adopted by the telecommunication operators would impact their revenue and comment on the sustainability of these approaches. [7]

While telco operators have adopted various strategies to increase their TR in light of the rising competition, they need to be mindful of the fact that these approaches may not be sustainable as they can potentially have a negative impact on the profits of the firm.

Pricing strategy

- Since the different telcos provide the same service "with little differentiation in network coverage", the services provided by each telco operator is a close substitute of the others. Hence, demand for the telco service provided by each operator is highly price elastic (PED>1)
- To increase TR, telco operators would lower price ("fight for market share by offering lower-tiered SIM-only price plans").
- The fall in price will lead to a more than proportionate increase in quantity demanded of telco services. The loss in revenue due to the fall in price is more than offset by the gain in revenue due to the huge increase in quantity demanded. Hence, there will be an increase in revenue of telco operators.

Comment on pricing strategy

- The pricing strategy works to increase TR of a firm only under the ceteris paribus assumption, that is all other factors remaining constant, including the actions of other firms.

Non-pricing strategy: Partnerships with goods that are in complementary demand or targeting niche markets through product differentiation

- Since telco services such as broadband or mobile data are complements of online-streaming services, telco operators can tie up with such firms (e.g. Starhub with Netflix)
- The growing trend to watch online-streaming services due to more interesting programmes will mean that such consumers will also have to purchase broadband or mobile data services, hence leading to a rise in demand and TR for telco services.

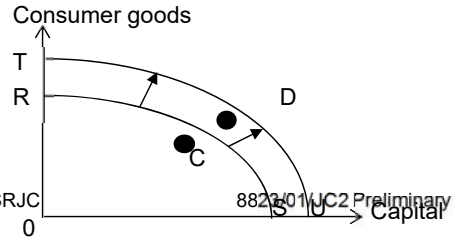
Comment on non-pricing strategy

- If the cost of doing so is greater than the increase in TR, overall the strategy may not be sustainable as it can lead to a loss of profits to firms.

(c) Extract 3 outlines various effects that an expansion of the information and communication technology (ICT) sector can have on the Singapore economy. Explain the effects and illustrate your answer with PPC diagram(s). [5]

Effect 1: Outward shift of the PPC

- As shown in Extract 3, "…many industries depend on ICT and it can increase efficiency and productivity", so the expansion of the ICT sector drives firms to leverage on the use of technology to develop new and more effective methods of production of goods and services which causes a rise in productivity.
- This increases the combination of the max quantity of two goods that Singapore can produce, thus increasing its productive capacity.
- Diagram with brief explanation: This is illustrated by a rightward shift of PPC towards from RS to TU.



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Effect 2: Movement from a point inside to a point closer to the PPC

- Assuming that the Singapore's economy is currently operating near full employment and resources are fully and efficiently utilised, it is at point C which close to the boundary of the PPC.
- With the expansion of the ICT sector, there will be a further outward shift of the PPC curve as shown in Effect 1 due to the rise in productivity. Extract 3 states that "growth of the industry will not only create thousands of jobs", which refers to more jobs now available in the ICT sector, such as in areas of cyber security and/or artificial intelligence. Existing labour which was previously not used or under-utilized can now take up the new jobs created.
- The rise in employment rate due to more people taking up jobs in this sector causes point C to move to point D, where it is closer to the new full employment of the economy (TU).

(d) Explain why the statement "By 2020, the sector that already employs 194,000 people will create another 16,000 jobs" in Extract 3 is considered a positive statement. [1]

- One of the characteristics of a positive statement is that it can be verified by looking at evidences. The above statement is positive because we are able to verify that there are 16,000 job vacancies available in the market in 2020 by examining the jobs market

(e) **(i)** State the main characteristics of a public good and explain why Wi-Fi is not classified as a public good. [4]

- The two main characteristics of public goods are non-rivalry and non-excludability.

Explain non-rivalry characteristic and explain why Wi-Fi is rivalry in consumption

- The good is non-rivalry in consumption when the consumption of the good by one person will not reduce the quantity available to the next user.
- Wi-Fi is rivalry in consumption because as stated in Extract 4 "… need to have sufficient bandwidth to accommodate the anticipated high Wi-Fi usage" which means that when one user taps on the Wi-Fi network, it will reduce the available bandwidth and speed of the connection available to the next user.

Explain non-excludability characteristic and explain why Wi-Fi is excludable

- Non-excludability means the government cannot prevent non-payers from consuming the good. One the service is provided, any user will be able to enjoy the service even if the user does not pay for it.
- Wi-Fi is excludable because users are required to sign up and login before they can use the public Wi-Fi network "The service has seen 700,000 logins daily" in Extract 4. It is hence possible to exclude selected users from enjoying the Wi-Fi services.

(ii) With the aid of diagram(s), explain two reasons why the Singapore government would want to follow in the footsteps of major cities such as New York and Seoul to intervene in the provision of Wi-Fi. [8]

- Due to the characteristics of rivalry and excludability, Wi-Fi is not a public good but a private good. The Singapore government intervenes in the provision of Wi-Fi because it is a merit good and there are large positive externalities that arises from the consumption as well as imperfect information. If left to the market, there will be under-consumption and inefficiency in resource allocation.

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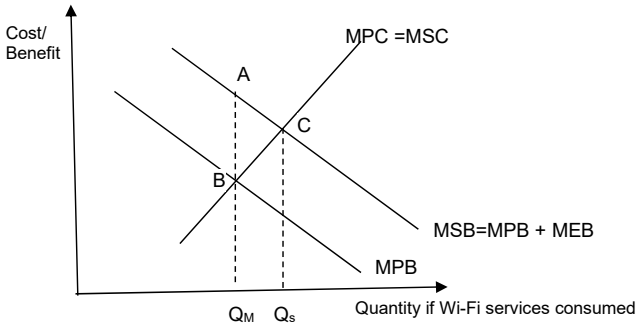
Explain how positive externalities in Wi-Fi leads to market failure

- Positive externalities are external benefits to 3rd party who are not directly involved in the consumption of the good and does not have to pay for it.
- The use of Wi-Fi as stated in Extract 4 will enhance productivity as "Transport analysts agreed that providing wireless connectivity will enhance the commuting experience" and "Commuters will be better connected with traffic related updates when they are on the move..."
- The 3rd parties who benefit are the firms and economy when commuters tap on the wireless network to plan their routes more effectively, they reduce travel time and firms and the economy enjoys a rise in productivity from more output due to less time spent on commuting.
- The presence of the external benefit causes a divergence between MPB and MSB by the amount of MEB. Referring to the diagram below, MSB lies above MPB as a result of the MEB. Assuming there are no external costs, MPC=MSC. Individuals will only consume Wi-Fi at the point where MPB=MPC where their private self interest are maximised at Q_M. However, socially optimum level of consumption of Wi-Fi by the economy is where MSB = MSC and all true costs and benefits have been taken into consideration at Q_s.
- From Q_M to Q_s, there is under-consumption of Wi-Fi if left to the individuals. The summation of the loss of net benefit not reaped from Q_M to Q_s where every unit that is under-consumed adds more to the society's benefit than cost forms the deadweight loss to society (Area ABC).
- Hence the government needs to intervene in the provision of Wi-Fi to reduce under consumption and improve efficiency in resource allocation.



- Consumption of Wi-Fi may also be under-consumed due to imperfect information. Some groups of consumers underestimate the benefits from the use of Wi-Fi services due to ignorance or lack of familiarity. Hence the MPB perceived is lower than the MPB actual resulting in under-consumption by the market.

(f) Using case evidence and your own knowledge, discuss the effectiveness of alternative government policies to ensure allocative efficiency in the market for digital services. [12]

<u>Public education</u>

- Silver Infocomm Initiative which "aims to bridge the digital divide with those over 50" and includes exhibitions and workshops
- Helps to enable consumers to experience and understand the benefits of using digital services to enhance the convenience in their lives
- Effectiveness of policy:
  - [Root cause] Addresses the market failure due to imperfect information

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        - Reduces the divergence between MPBperceived and MPBactual such that the consumption of digital services is closer to socially desirable level and allocative efficiency is achieved
    - [Conditions] Depends on availability of govt budget
        - Organisation of public roadshows and workshop will mean that government incurs an opportunity cost due to a limited government budget
        - To reduce the opportunity cost, government in Singapore uses public education to specifically target those above 50 and in heartland areas. This demographic profile may be less IT savvy because they do not use it in their day-to-day lives or at work.
    - [Conditions] Depends on willingness and ability of the older generation to embrace the use of digital services.
        - Older generation may have the perception that digital services are very complex and hence less willing to explore usage

    EV: While public education incurs recurring spending over a period of time, this is unlikely to have to persist in the long run for Singapore because younger generations are digital natives who are more IT savvy due to early exposure in school at work

Subsidies

- NEU PC Plus Programme that provides new computers with broadband at an affordable prices to students
- SMEs Go Digital Programme has govt funding support for SMEs that want to pilot ICT solutions
- Amount of subsidy equal to amount of MEB
- Cost of using digital services is reduced, MPC curve shifts downwards by full amount of subsidies.
- Consumption increases to the socially desirable level and allocative efficiency is attained
- Effectiveness of policy:
    - [Root cause] Addresses the market failure due to positive externalities
    - [Conditions] Depends on availability of govt budget
    - [Conditions] Depends on accuracy of govt information
        - If govt inaccurately estimates MEB, it may end up oversubsidising the provision of digital services, which leads to overconsumption and deadweight loss

    EV: Govt tries to avoid the situation of oversubsidising by only subsidising the lower income group of students, or SMEs rather than all individuals or firms. While such targeted subsidies may not bring the consumption of digital services to the socially optimal level, it is nonetheless still effective in reducing the extent of allocative inefficiency.

Free provision

- Free wifi provided in public transport network (Wifi considered an example of digital service
- Govt decides on the socially desirable level of wifi, produces that amount and provides it for free
- Effectiveness of policy:
    - [Conditions] Depends on accuracy of govt information
        - Some may argue that free provision leads to overconsumption when govt does not have accurate info about the socially optimal level

    EV: Likely that government has considered the social benefits of the consumption of digital services to be so high that it is worth it to provide the service for free.

Commented [AL1]: 1) This is from ext 4 while the earlier 2 policies were from ext 5. I wonder if students will be able to recognise that this is another policy given that it isn't in ext 5.

2) Should it be considered direct provision or free provision?

3) is there any concern about how this policy is targeted at wifi alone, and not digital services in general?

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H1 CSQ 2 Suggested Answers

2 (a) Using Table 2, compare the economic performance of Japan and the US. [4]

Real economic growth is slightly higher in the US compared to Japan.
On the whole, both countries enjoy real economic growth *(equals to nominal economic growth minus inflation)* of 1.5% (US) and 1.4% (Japan) → explain effects of slow growth.

Low inflation in the US is more likely to raise investors' confidence compared to deflation in Japan. US experience low inflation (below target of 2%) while prices in Japan are falling i.e. deflation → Explain benefits of low inflation of the US versus risk of prolonged period of deflation for Japan.

Overall, US looks like the healthier economy based on economic growth and inflation. [Justify + Synthesis]: Though both countries real GDP growth are close, there is a greater uncertainty of Japan's deflation which may result in negative consequences on falling prices in future and hence consumers and business may hold back both consumption and investment and hence future economic growth may not be sustained.

(b) With the aid of an AD/AS diagram, explain the possible internal and external factors that could have contributed to the projected slow economic growth of 1.5% in the US (Extract 6) and comment on whether 4% is an achievable economic growth target. [8]

Reasons for the projected 1.5% slow growth:

1. Internal factor of rise in "consumer spending" at 2.8%.
   - This could be due to the US economy has been growing for the past 2 years and hence, households are optimistic and bring forward purchase of goods and services.
2. The external factor is a "10.1% rise in Exports"
   - The rise in X could be due greater US efforts in global marketing and hence a favourable shift of taste and preferences raising demand of exports and thus rise in exports revenue.

Justify why there is only a projected slow economic growth

However there is only a small 1.5% rise in AD because US may also have imported more goods and services in production of both consumption goods and goods for export. The rise in C+X is still slightly greater than the rise in M, thus AD rises but by a smaller extent.

Draw and explain diagram of a **small** rise in AD from AD_0 to AD_2 (instead of rising to AD_1)

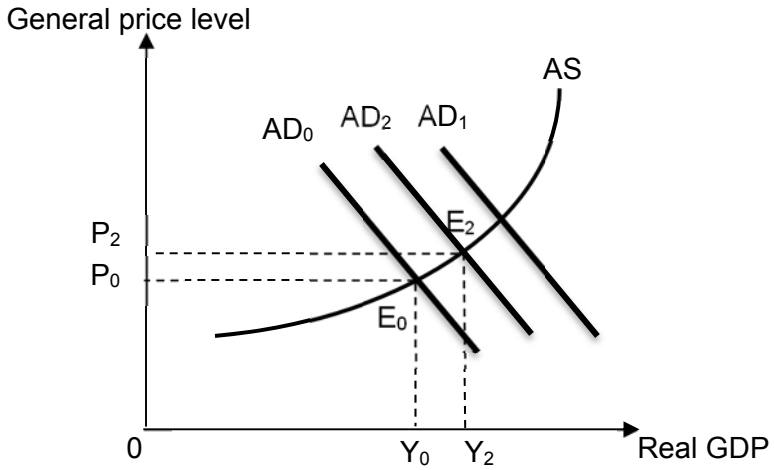

Figure 1: Small rise in aggregate demand

At P_0, there will be a shortage and firms will increase production. This will lead to a rise in incomes for factor owners who in turn will consume more. There will be multiple rounds of rise in incomes and induced consumption until real GDP rises from Y_0 to Y_2.

Evaluative Comments

Whether 4% is achievable or not depends on which is the stronger factors such as:

1) "Tepid labour productivity growth and the mass retirement of baby boomers" will result in a fall in AS while Trump's proposed tax cuts will raise investment spending and rise in G spending
2) If new tax cuts result in US having lower tax rates compared to its rivals, then the rise in investment can be substantial.
3) 4% target could be more difficult for a developed countries as the rise in G on infrastructure must be substantial to replace ageing roads, airports, etc (capital depreciation/obsolescence).

(c) With reference to Extract 7:

(i) Explain one reason why lowering interest rate is ineffective in tackling deflation in the Eurozone. [2]

- The fact that ECB interest rate has continuously cut since 2008 US subprime crisis till near zero shows that borrowers (households and investors) are pessimistic about the economic outlook especially if their incomes may fall and thus are not enticed to take up loans despite almost zero borrowing costs.

- Hence demand of loans for Consumption and investment will be interest inelastic. So, the demand for C+I will rise less than proportionately, thus causing a very small or negligible change in AD and hence a minimal rise in general price level.

(ii) Explain the impact of deflation on debtors and governments. [4]

For debtors, deflation will result in a rise in real value of debt. Debtors may have borrowed on "fixed interest rates" so even when nominal interest rates fall near zero, the debtors are still liable to pay fixed interest (e.g.5%) thus, debtors are worse off as real value of debt rises significantly (if deflation is -1%, then the real interest rates will be 6%).

For governments, deflation causes prices to fall, if consumers reduce consumption due to anticipation of lower prices in the future, the fall in quantities sold multiply by the unit tax will yield lower VAT collected (VAT is similar to GST i.e. tax on goods and services).

(d) (i) Explain why wages are expected to rise when there is economic growth. [2]

- When there is economic growth, firms raise production level of goods and services. This in turn lead to a rise in demand for labour as labour being a factor input is a derived demand.
- With a higher demand for labour, there is a shortage at original wages and an upward pressure on wages, resulting in a likely rise in wages.

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(ii) Using Extract 8, discuss whether a drop in unemployment rate is indicative of an improvement in a country's standard of living. [8]

- A country's SOL has two key aspects – material and non-material SOL
- Whether a fall in unemployment rate will indicate a rise in SOL depends on causes of the fall in unemployment rate and profile of workers who still cannot find jobs.

Thesis: A drop in unemployment that are **seen among most industries** is indicative of an improvement in a country's SOL

- If the fall in unemployment rate is due to more jobs added overall as seen as Extract 8 where 'the US economy added 178,000 jobs in November 2016', then there will be a rise in firms' and households' optimism and production rises and AD rises. As DD of workers rises, there will be wage growth, thus greater quantity of goods and services consumed leading to a rise in material SOL.
- As above, rise in AD leads to rise in real GDP and so the government collects more tax revenue which can be used to improve on education and healthcare and hence non-material SOL.
- When gains from economic growth is also redistributed to the poor and unemployed, the country's SOL rises for all segments of the population.

Evaluation

- Unemployment rate of 4.6% is the lowest even when comparing to before the 2007/8 subprime crisis. US was in economic boom in 2006 where it was near full employment level so the current 4.6% is remarkable. Hence, SOL is likely to improve for all.
- Can also evaluate that when there is rise in incomes for workers, the rise is not significant if wage growth is considered which is seen in wage growth having fallen to 2.5% in Extract 8. This means that even though economic growth may be responsible for the fall in unemployment, it actually results in rising income inequity where the rich is enjoying proportionately more gains of economic growth.

Antithesis: Fall in unemployment rate may not be indicative of a rise in SOL as there could be underlying issues of structural unemployment and discouraged workers that could not be revealed by unemployment data as seen in Extract 8

Unemployment numbers may fall due to "discouraged workers …not returning to the labour market to look for jobs" so the country's SOL may not improve. First, workers are discouraged when they are out of jobs for a long time. "blue collar workers feel left behind the economic recovery" means these manufacturing workers are now no longer able to land jobs due to changing economic structures as they "do not have the advanced skills required for the new jobs". These workers' material SOL falls as they may have to rely on unemployment benefits to get by.

In addition, loss of jobs can result in stress and fall in non-material SOL. Thirdly, the government must spend more on unemployment benefits when these workers require long-term support and government may have to raise taxes in the future which will result in a heavier burden on taxpayers. Hence, country's SOL may even fall.

Evaluation

- Depends on the profile of the jobless *(characteristics of economy)*, if there are many who are of low qualifications and low-skilled, then the risk of long-term unemployment (less ability to acquire higher skills) and being discouraged is higher.
- Leaving the workforce will reduce quantity of labour and fall in LRAS. This will reduce US competitiveness and real GDP, all will reduce material SOL of US especially in the long run.

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Conclusion/synthesis

- Fall in unemployment rate can be used to measure current material SOL to a certain extent assuming there will be corresponding wage growth. But from the data, wage growth can be too low even when unemployment rate has fallen. Thus, the author suggests looking at wage growth
- Moreover, healthy wage growth (but not to be excessive to cause wage push inflation) can sustain the country's consumption spending where maintaining healthy levels and growth of consumption can improve investors' confidence which can help future economic growth and raise future SOL.

(e) Suggest one indicator that can measure income inequity and explain how rising income inequity (Extract 9) could hamper an economy's international competitiveness. [5]

- Gini coefficient can help to measure income inequity
- International competitiveness can include **export-competitiveness** and **competitiveness in terms of drawing foreign direct investment**.

2 well-explained reasons:

1. Rising income inequity, especially at its extreme levels, as seen in Extract 9 will lead to social unrest, thoroughly undermining economic activity. This results in rising uncertainty among households and business and a fall in expected rate of returns for **foreign** investors. Hence there is a decrease in attractiveness for FDI as revenue falls while cost rises.
2. Rising income inequality also results in a 'smaller proportion of national income spent on accumulating human capital and finds it harder to make gains in productivity'. This translates to a rise in unit cost of production if the small rise in productivity is outpaced by higher wages. Hence it results in more expensive and **less price-competitive exports**.

(f) Using the case study and your own relevant knowledge, discuss the factors that the Singapore government needs to consider in deciding whether to take up the recommendations by the Economic Strategies Committee to 'improve the quality of life for all Singaporeans'. [12]

Intro

1. The factors that the Singapore government needs to consider in deciding whether to take up both recommendations are based on the:
   i. **Costs and benefits** of the recommendations: based on the core approach of the marginalist approach in weighing the costs and benefits
   ii. Understanding the **objectives** of the Singapore government: whether there are conflicts with other goals in adopting the recommendations
   iii. Other possible factors include the **constraints** that the Singapore government may be

2. Clarifying the endpoint of the question which is to 'improve the quality of life for all Singaporeans': achieve inclusive growth that can benefit different income segments within the Singapore economy and with that lead to a rise in both material (quantitative) and non-material (quality) of SOL.

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Body

P1: The 2 policy recommendations are lead to a rise in economic growth and in turn an improvement in the material SOL of Singaporeans. *[Analysis of how both policies work]*

Recommendation 1: National Productivity Fund (NPF)

With NPF, grants are provided for industries to adopt innovative business models, process or technology. This raises productivity of labour, capital as well as allow for technological improvement. All these improves quality of factors of production and a rise in AS. In turn, the productive capacity and potential economic growth of Singapore increases.

The above leads to higher rates of growth in tax revenue and allows for an improvement in future material SOL & non-material SOL. In addition, with higher labour productivity, workers can be more efficient and hence spend relatively less time to achieve a given output, and have the ability to have a greater work-life balance and improve non-material SOL

Furthermore, the National Productivity Fund as seen in Extract 10, may require enterprises to deliver innovative products which are new and/or of better quality in the market. Such high-value products can be sold to overseas markets helps to raise exports revenue, ceteris paribus improves BOP, AD and real GDP.

Recommendation 2: Review of WIS

Review of Workfare aims at raising social protection to match basic SOL level which can **raise consumption expenditure** of the economy. In particular, low-wage workers have higher MPC (MPC = change in C/change in Y) as they have more needs that have not been satisfied, the rise in C can be higher with WIS and correspondingly a rise in material SOL

Secondly, WIS as mentioned in Extract 10, can 'build up retirement savings' of the low-wage workers. This can raise savings which is a source of funds for investments and hence raising investments to some extent. The rise in investment can lead to an increase in both AD & AS and raise material SOL for especially for the group of low-wage workers.

In addition, since WIS rewards regular work and individual effort, it provides incentive for older lower-wage workers and PWDs to be incentivise to continue working (preferred recommendation than unemployment benefits) and hence help to reduce the income inequality in a sustainable way and government faces less drain on its budget.

Clear explanation of any 2 factors in influencing government policy decisions

P2: [Factor 1 – Constraint] The possibility of funding constraints that could also lead to a worsening budget position is one other consideration for Singapore government

- **Constraint** of a limited government budget and therefore may not be able to carry out both at the same time. This is especially so in determining the choice of which economic goal to focus on as there could also be other pressing macro/micro economic problems that are important for the Singapore government to solve such as rising inflation.
- With increased spending in adopting these 2 policy recommendations to achieve inclusive economic growth for all Singaporeans, there would be **opportunity cost incurred** on the next best alternative given up, such as spending on infrastructure to draw in more foreign direct investments to Singapore. Hence, there is a need to do a detailed cost-benefit analysis in order to **rank the net benefits** of the various choices and choose the one that yields the **highest net benefit** for Singapore.
- Risk of crowding out effect if prolonged use: If government borrows from private equity markets, such demand for loans will raise interest rate. As cost of borrowing rises,

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consumption and investment fall and there will be minimal impact on the economic growth and quality of life.

Evaluation

- In view of the prudent fiscal stance of the Singapore government in past few decades as well as reinvestment of earlier budget surpluses to grow it further, the funding constraints is less of a concern for the Singapore government. Hence it has greater ability to take up the policy recommendations by the ESC to improve the quality of life for all Singaporeans.
- Even so, firms may become over-reliant on government handouts whenever they lose competitiveness and need to massively change structure, machines, processes. Such frequent applications for funding can be a strain on government funds.

P3: [Factor 2 – Accuracy of information] Another factor that will affect the decision of the Singapore government to take up the recommendations would be the availability of accurate information.

- In order to make sound decisions, the government has to gather information, both quantitative and qualitative, on the costs and benefits of every available choice. Moreover, as time passes, some information will be out-of-date for instance the CPF payout could be insufficient for firms to hire the low-wage workers (likewise the cash payout may not be sufficient in the midst of rising inflation and cost of living). Vice versa, due to lack of information, the government could also have over-subsidised.
  - In fact, the government would also need to gather information on the reasons/root causes of why firms are reluctant to hire older workers. E.g. it could be the job requires manual strength. If so, encouraging firms to apply for funding for job redesign (NPB) to address the need for strength could be a more effective method to raise quality of life of these workers. Ultimately, firms aim to maximise profits, thus while WIS lowers costs, firms want output and revenue growth to justify hiring.
- A second group of economic agents who need to have accurate access to information would be the low-income workers.
  - It serves the economic agents well to have a fairly accurate understanding of the costs, benefits, trade-offs and intended consequences pertaining to each choice, before deciding.

- For NPF: firms may lack knowledge on the new markets because of language and cultural barriers and thus unwilling to tap into the fund to innovate products for these markets.

- For WIS:
  - WIS only benefits a selected group of low-wage workers. But how about other income groups – perhaps middle-income groups (E.g. PMET who lose their jobs) may also need help to reskill and need assistance in supplementing their incomes.
  - As seen from Extract 10, there is a need for WIS to provide a timely and meaningful level of support for eligible workers: However due to possible time lag in information/data collection -> decision-making -> implementation -> these low-wage workers may not be able to receive help when they need it most.
  - In addition, there could also be imperfect information among the low-wage workers to understand all the qualifying criteria and amount that they are eligible for. This could be due to their low literacy level to fill up forms and comply with the administrative requirement of WIS.

Evaluation

- As a small country and active involvement of different social and community agencies, the Singapore is more likely able to overcome the factor of information availability to low-income workers compared to other larger economies. In particular, the government has

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put in institutionalised assistance to low-wage workers and vulnerable families and in recent years, also shifted the focus towards more upstream interventions for low-income families such as helping the children of these family so that the next generation has improved access to education (childcare, kindergarten and student care) and employment opportunities.

- Similarly, the government can set up business information hub and trade visits to familiarise small-medium enterprises (SMEs) with overseas markets, business regulations, etc so that these firms are more able to make better use of the NPB scheme.

Synthesis/Conclusion

All in all, there are a number of factors that the Singapore government needs to consider in its decision-making process. Consideration of the net benefits that the recommendations can yield vis-à-vis other economic goals, collecting accurate information such as potential root causes as to why quality of life for Singaporeans may be falling or stagnating are various as well as considering intended and unintended consequences from perspectives of different economic stakeholders are important.

Knowledge, Application, Understanding and Analysis	
L3	**2 measures and 2 factors for high L3.** • Clear explanation of both policy recommendations from case study, anchored clearly with AD-AS analysis • Clear explanation of 2 factors that Singapore government needs to consider **2 measure and one well-explained factor for low L3.**
L2	• **Some** explanation of both policy recommendations **or sufficient** explanation of one policy recommendation (analysis not fully developed) • Adequate explanation of 2 factors that Singapore government needs to consider **or** 1 factor clearly explained. • Low L2 for a largely theoretical answer that only applies to a context incidentally.
L1	▪ Smattering of points. ▪ A vague, descriptive or list-like answer on either measures or factors. • Points raised are not relevant to addressing the question.

Evaluation/Personal Opinion	
E2	Synthesises stated arguments to arrive at well-reasoned judgements and decisions focusing on 'improve the quality of life for all Singaporeans': Further developing stating 'C.C.C.' framework or 'CBA' framework that Singapore government can use to base its decisions on with clear justification.
E1	For an unsupported judgement of relevant factors. For example some awareness 'C.C.C.' criteria or 'CBA' framework

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TEMASEK JUNIOR COLLEGE
Preliminary Examinations 2018
General Certificate of Education Advanced Level
Higher 1

ECONOMICS 8823/01

Paper 1

Friday 24 August 2018
3 hours

Additional Materials: Answer Paper, Cover Page

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.
You may use an HB pencil for any diagrams or graphs.
Do not use staples, paper clips, highlighters, glue or correction fluid.

Answer **all** questions.

Begin each question on a separate sheet of answer paper.
At the end of the examination, fasten your work for each question separately.
Attach the cover page to your work for Question 1.

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

This document consists of **8** printed pages.

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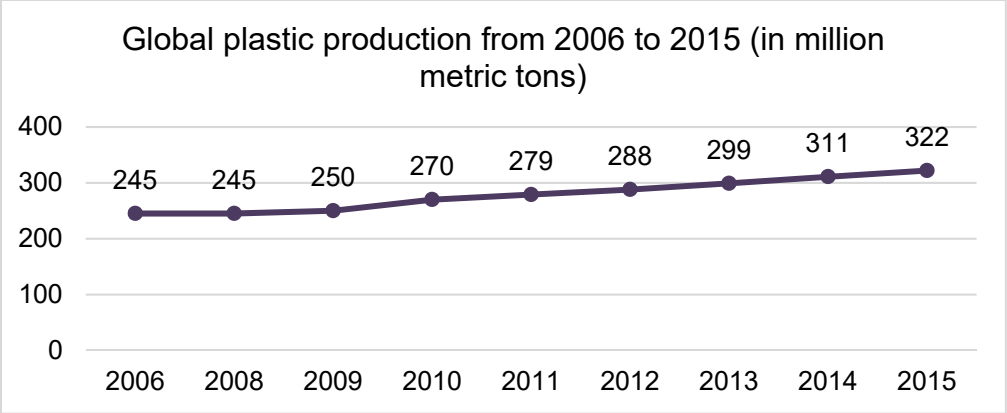
Answer **all** questions.

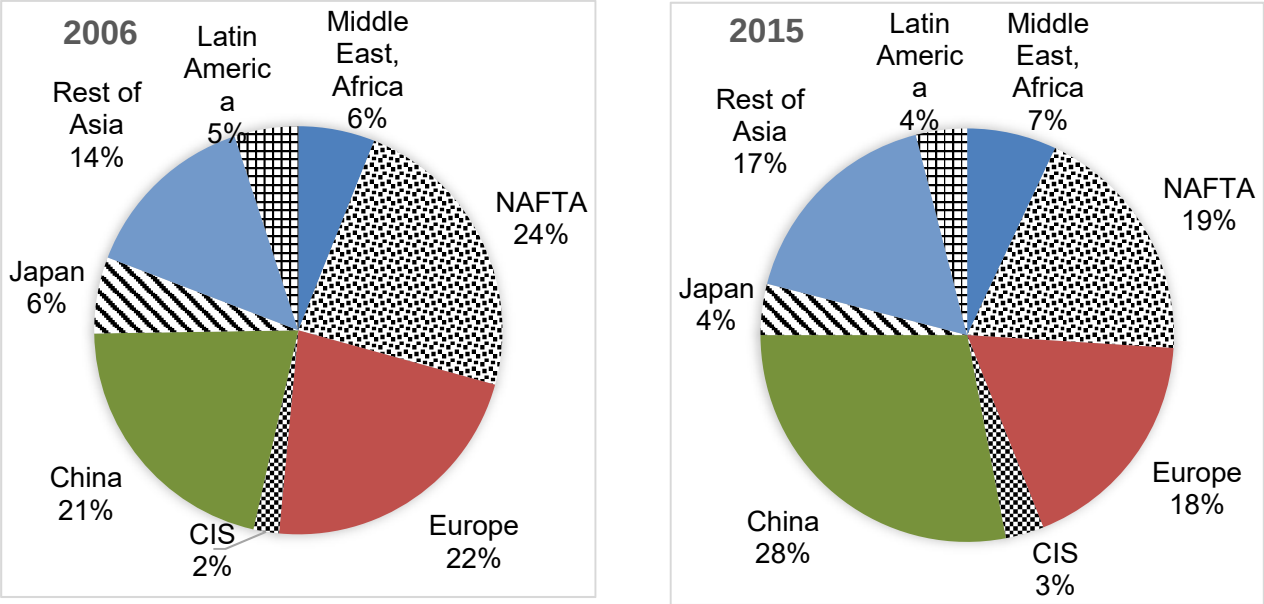
Question 1: Tiny Plastic, Big Problem?

Figure 1: Global plastic production from 2006 to 2015 (in million metric tons)



Source: *Statistica and Power Plant CCS*

Figure 2: Share of global plastic production



Source: *PlasticsEurope Market Research Group (PEMRG)*

Extract 1: Global plastic production

The growth of the plastics industry goes hand-in-hand with economic development. The more an economy grows, the more plastic is used in construction, infrastructural development, electrical and electronic industries, and transport. Single-use plastic packaging – the nemesis of environmental activists – is also in strong demand in developing countries. Even in Europe, where anti-plastics campaigning has been especially vigorous, packaging accounts for 40 per cent of consumption. But the world's leading producer of plastic is China. Today it holds a whopping 29 per cent of the market share, up from 15 per cent just a decade ago. European, US and Japanese plastic manufacturers have meanwhile seen their market share shrink.

Source: *Business Times*, 9 July 2018

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Extract 2: Global plastic crisis

The impacts of global plastic use have reached an alarming level. Based on the latest data, 9 billion metric tons of plastics have been produced since the 1950s, creating 7 billion tons of waste. Plastic waste not only damages the environment and threatens animal life but also harms human populations. One of the most dangerous elements of plastic waste is tiny pieces of debris known as microplastics, which are damaging the environment. These tiny particles can end up in people's stomachs via drinking water or eating seafood, which could present health risks.

Various attempts to minimise plastic use have been introduced. One involves developing plastic materials, known as biodegradable plastics or bioplastics, that decompose naturally in the environment. The materials commonly used to produce bioplastics are corn, sugarcane, vegetable oil and starch. However, using these ingredients for plastics has raised some concerns. First, the production of bioplastics requires a huge investment in the land, fertilisers and chemicals. Second, the use of these plants for plastics will trigger a competition between plants for food versus plants for plastics, which will likely lead to food price hikes.

Source: *The Jakarta Post*, 6 May 2018

Extract 3: Banning single-use plastics

A Senate report recommended a ban on single-use plastics such as takeaway food containers and plastic-lined coffee cups by 2023. This will see Australians take a significant step towards a plastic-free future, with this initiative following an outright ban on free plastic bags at shops in Queensland and Western Australia.

Single-use plastics are often used to package food and water. While this is unnecessary in most settings, certain situations do require single-use packaging to ensure food and water safety. Domestic food aid, emergency responses, and international aid efforts all require food and water that can be stored without refrigeration and distributed when and where it's needed. Often this means packaging it in lightweight, single-use plastics.

Source: *The Conversation*, 28 June 2018

Extract 4: Tax on plastic bags?

Singapore used about three billion plastic bags in 2011, according to the Singapore Environment Council (SEC). A plastic bag tax could be one way to reduce this number. Singapore's four main supermarket chains – FairPrice, Dairy Farm Group, Prime Supermarket and Sheng Siong – are discussing plans to impose a surcharge for plastic bags of 5 to 10 cents per bag. A surcharge is a tried-and-tested way of curbing excessive use of plastic bags. In October 2015, shoppers in Britain had to pay five pence (about nine Singapore cents) for each single-use plastic bag received. It resulted in the number of bags used by shoppers dropping by more than 85 per cent, reported The Guardian.

Source: *The Straits Times*, 5 Oct 2017

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Extract 5: Plastic Industry in India

The Indian plastics industry made a promising beginning in 1957 with the production of polystyrene. Thereafter, significant progress has been made, and the industry has grown and diversified rapidly. The industry is dominated by conventional plastics production and hosts more than 2,000 exporters. It employs about 4 million people and comprises more than 30,000 processing units, 85-90 per cent of which are small and medium-sized enterprises. The Indian plastics industry is supported by a large number of polymer producers, and plastic process machinery and mould manufacturers in the country. Among the industry's major strengths is the availability of raw materials in the country. These raw materials, including polypropylene, high-density polyethylene, and PVC, are manufactured domestically.

Source: *India Brand Equity Foundation,* July 2018

Extract 6: Bio-plastic industry in UK

Presently in the UK, supportive regulation and legislation has encouraged more environmentally sustainable business practices and consumer behaviour. For example, the government's drive towards achieving a 'zero waste' economy, through reducing waste and increasing recycling, has fostered an increased consciousness of resource efficiency. This awareness has indirectly promoted the use of bio-plastic products.

Due to their biodegradability in the right applications, bio-plastics can help divert organic waste from disposal so avoiding the additional costs of Landfill Tax. This can act as an incentive to businesses and municipalities to use bio-plastics, instead of conventional plastics. In addition, initiatives to reduce food and packaging waste have fostered research and innovation into more carbon neutral forms of plastics. Already, advances in the technical properties and functionality of bio-plastics have increased their attractiveness and the extent to which they can substitute for conventional plastics.

Based on the current annual domestic demand for bio-plastic products of 4,000 tonnes, it is estimated that in 2014 the gross output impact of the bio-plastics sector amounted to £103.4 million. This supports roughly 1,000 jobs and contributed £43.4 million of direct output to the UK economy.

Source: *Bio-based and Biodegradable Industries Association (BBIA)*, October 2015

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Questions

(a) **(i)** Describe the trend in global plastic production in Figures 1 and 2. [2]

(ii) Explain whether the change in Europe's share of global plastic production meant that Europe's plastic production fell from 2006 to 2015. [2]

(iii) Account for the trend in global plastic production **and** the extent of change in price of plastics. [5]

(b) Analyse how the use of agricultural commodities, such as corn, to produce bioplastics could lead to "food price hikes" (Extract 2) and comment on why this might not happen. [7]

(c) Using an example from Extract 2, explain the concepts of scarcity and opportunity cost to farmers. [3]

(d) **(i)** Explain how the use of single-use plastics can lead to an inefficient allocation of resources. [6]

(ii) Discuss whether imposing a ban or levying a tax on single-use plastics is more appropriate in addressing such inefficient allocation of resources. [8]

(e) Using the information provided and/or your own knowledge, evaluate the view that the Indian government should develop the biodegradable plastic industry like the UK. [12]

[Total: 45]

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Question 2: Donald Trump and the US economy

Table 1: US Macroeconomic Indicators

	2013	2014	2015	2016	2017
GDP (USD per capita)	52 726	54 651	56 420	57 591	59 535
Change in Consumer Price Index (%)	1.46	1.62	0.12	1.26	2.13
Unemployment (%)	7.38	6.17	5.29	4.87	4.35
GINI Coefficient	0.396	0.394	0.390	0.391	-
Net Exports (million USD)	- 459 602	- 485 036	- 609 603	- 652 823	-

Source: *OECD*

Extract 7: Donald Trump proposes law to cut immigration numbers by half in 10 years

Donald Trump announced plans for new immigration laws on Wednesday that would cut the total number of immigrants admitted to the US by half over a decade and prioritise those who can speak English or are well-educated.

The proposed legislation, unveiled at the White House, would also cap the number of refugees admitted to the US every year at 50,000, and eliminate the diversity visa lottery, which currently allocates 50,000 visas a year to residents of countries that do not currently send significant numbers of migrants to the US.

An estimate provided by the office of one of the bill's sponsors, the Republican senator Tom Cotton, stated that if passed, the Reforming American Immigration for Strong Employment (Raise) Act would reduce the number of immigrants admitted to the US by 41% in its first year and by 50% over a 10-year-period.

Source: *The Guardian*, 02 Aug 2017

Extract 8: Why US GDP shrank

The US economy faltered in the first quarter of 2015, according to Commerce Department data released on Friday. Here's a quick look at the report.

US Gross Domestic Product (GDP) contracted at a 0.7% seasonally adjusted annual rate in the opening months of the year, a significant downward revision from an initial estimate of 0.2% growth. This marks the third time since the recession ended that the official measure of GDP fell into negative territory. The latest numbers highlight the fragility of the expansion but also raise questions about potential statistical quirks in government data that may be depressing first-quarter figures.

Trade was the biggest drag on top-line GDP figures in the opening months of the year. US exports of goods fell by the most since the first quarter of 2009 – the midst of the recession – while overall imports climbed. The widening deficit subtracted 1.9 percentage points from economic growth. A stronger dollar has tamped down overseas demand for US-made goods while making foreign products cheaper to import. Meanwhile, congestion at West Coast ports constrained trade earlier in the year.

Source: *The Wall Street Journal*, 29 May 2015

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Extract 9: Donald Trump's speech on jobs and the economy

Today, I'm going to outline a plan for American economic revival – it is a bold, ambitious, forward-looking plan to massively increase jobs, wages, incomes and opportunities for the people of our country.

My plan will embrace the truth that people flourish under a minimum government burden, and it will tap into the incredible unrealised potential of our workers and their dreams. Right now, 92 million Americans are on the sidelines, outside the workforce, and not part of our economy. It's a silent nation of jobless Americans.

We are going to turn this around. By lowering tax rates, streamlining deductions, and simplifying the process, we will add millions of new jobs. In addition, because we have strongly capped deductions for the wealthy and closed special interest loopholes, the tax relief will be concentrated on the working and middle class taxpayer. They will receive the biggest benefit – it won't even be close.

One of our greatest job creation measures is going to be our 15% business tax rate – down from the current 35% rate, a reduction of more than 40 percent. An explosion of new business and new jobs will be created. It will be amazing to watch.

Source: *TIME*, 15 September 2016

Extract 10: President Obama is handing over a strong economy to his successor

According to the government's report on Friday, Donald J. Trump can expect to inherit an economy that has added private sector jobs for 80 months, put another 178,000 people on payrolls last month and pushed the unemployment rate down to 4.6 per cent today from 4.9 percent the previous month. Wage growth, though slower, is still running ahead of inflation, and consumers are expressing the highest levels of confidence in nearly a decade.

For all the improvements, tens of millions of Americans understandably feel that the recovery has passed them by. Those without skills are relegated to low-paying positions without steady schedules, security and benefits. Breadwinners who once held well-compensated manufacturing jobs are angry about being forced to settle for lower-wage service jobs – or no jobs at all.

Betsey Stevenson, an economist at the University of Michigan and a former economic adviser to Mr. Obama, said that manufacturing, while still a driving force in the economy, employed fewer and fewer people. More than 80 percent of jobs are now in the service industry, Ms. Stevenson said, and Mr. Trump should be thinking more about how to match workers with those jobs.

Source: *The New York Times*, 02 December 2016

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Extract 11: Energy surge sends US consumer prices up 0.5% in September

US consumer prices rose 0.5% in September, the largest increase in eight months. The result reflects another big jump in energy prices in the aftermath of Hurricane Harvey, which shut Gulf Coast refineries and caused gasoline prices to spike around the country.

The September increase in the closely watched consumer price index was the biggest one-month gain since a 0.6% rise in January, the Labour Department reported Friday.

Energy prices shot up 6.1%, led by a 13.1% surge in gasoline. Analysts believe the impact of the hurricane will be temporary.

Source: *USA Today*, 13 October 2017

Questions

(a) **(i)** Summarise the trend in the net exports in Table 1. [2]

(ii) Using a diagram, explain how the overall trend in net exports affects the external value of the USD. [4]

(b) Using a Production Possibilities Curve, explain how the proposed immigration law will impact the US economy. [3]

(c) **(i)** Using Extracts 8 and 10, identify and explain **two** sources of unemployment in the US economy. [4]

(ii) Discuss whether low unemployment can be achieved through the lowering of direct and indirect taxes. [8]

(d) Using Extracts 10 and 11 and with the aid of a diagram, account for the change in general price level in US between 2016 and 2017. [5]

(e) Comment on whether the data provided is sufficient to conclude that there has been inclusive and sustainable growth in the US economy. [8]

(f) "Low unemployment is the main factor contributing to a higher standard of living in an economy." Discuss this view. [11]

[Total: 45]

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H1 CSQ1 Suggested Answers
Question 1: Tiny Plastic, Big Problem?

(a) (i) Describe the trend in global plastic production in Figures 1 and 2. [2]

- Using Figure 1: Global plastic production generally increased from 2006 to 2015. [1]
- Using Figure 2:
  - Some countries/regions experienced an increase in the share of plastic production (e.g. China, the Rest of Asia, CIS and Africa) while the share of plastic production fell for other countries/regions (e.g. NAFTA, Europe, Japan and Latin America). [1]
    <u>OR</u>
  - The top share of plastic production shifted from NAFTA in 2006 to China in 2015. [1]

<u>Marker's Comments:</u>

- This question was generally well done with most students being able to describe the trend in Figure 1 and 2.
- Students appeared to have greater difficulty describing the trend in Figure 2. A handful of scripts failed to describe the trend in Figure 2 at all.
  - Some students considered the share in 2006 or 2015, failing to describe the trend from 2006 to 2015.
  - Some students claimed that the share remained relatively constant instead of recognising that the data showed significant changes in the share of plastic production, particularly a shift in the top share of plastic production.
  - Some students selectively focused their description on one of the 8 countries/regions shown in Figure 2, and failed to show good interpretation of the data presented.

(a) (ii) Explain whether the change in Europe's share of global plastic production meant that Europe's plastic production fell from 2006 to 2015. [2]

- Even though Europe's share of global plastic production fell [1], Europe produced more plastic in 2006 than in 2015 as the global production increased in the same period. [1]

- *Mathematically, the amount of plastic produced by Europe can be calculated using the data in Figure 1 and Figure 2:*
  - *2006: 22% of 245 million metric tons = 53.9 million metric tons*
  - *2015: 18% of 322 million metric tons = 57.96 million metric tons*

<u>Marker's Comments:</u>

- Many students recognised Europe's share is determined by:
  - Absolute amount of plastic produced in Europe
  - Total global plastic production
- Some students failed to recognise that the data presented in Figures 1 and 2 could be used to determine the absolute amount of plastic produced in Europe.

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- Some students presented all possible scenarios (i.e. it could have remained constant, it could have increased).
- A few students erroneously presented a demand and supply analysis of the situation in Europe to determine the possible change in Europe's production during this period.

(a) (iii) Account for the trend in global plastic production <u>and</u> the extent of change in price of plastics. [5]

- Accounting for the trend in global plastic production [3]
  - Economic growth → rise in income and purchasing power → increase demand for normal goods and services in industries such as 'construction…' (Extract 1)
  - Increase derived demand for plastics which is used to produce bottles, plastic bags etc. → increase equilibrium quantity of plastics i.e. increase in global plastic production
- Accounting for the extent of change in price of plastics [2]
  - Supply of plastic is likely to be price elastic given the "availability of raw materials" to produce plastics (Extract 8)
  - Given an increase in demand and a price elastic supply, the price of plastic would increase by a small extent

<u>Marker's Comments:</u>

- The first part of the question was better attempted than the second. In fact, a handful of students ignored the second part of the question and did not attempt to account for the extent of change in price of plastics.
- Most students attempted to use the information given in the case material to support their analysis. However, this was done to varying degrees of success.
  - Some students recognised that the question was on the global trend instead of plastic production in one specific country/region, and were able to identify the appropriate case material to support the global trend.
  - Some students focused their analysis on one specific country, e.g. China or Europe, and failed to accurately account for the global trend.
- Many students failed to recognise that supply, quantity demanded/supplied and equilibrium quantity are different concepts, and were inaccurate in accounting for the increase in global plastic production.
  - In this context, given that the case material and the analysis pointed to an increase in demand, producers will respond by increasing quantity supplied (shown by a movement along the supply curve) instead of an increase in supply (shown by a rightward shift of the supply curve).
  - Some students failed to relate the increase in global plastic production to the increase in equilibrium quantity, which is a market outcome resulting from the increase in demand for plastics.
- A large majority of students failed to recognise that price elasticity of supply would be relevant in accounting for the extent of change in the price of plastics.
  - Some students resorted to explaining, at length, the extent of increase in demand and hence used this to conclude the extent of increase in price. These

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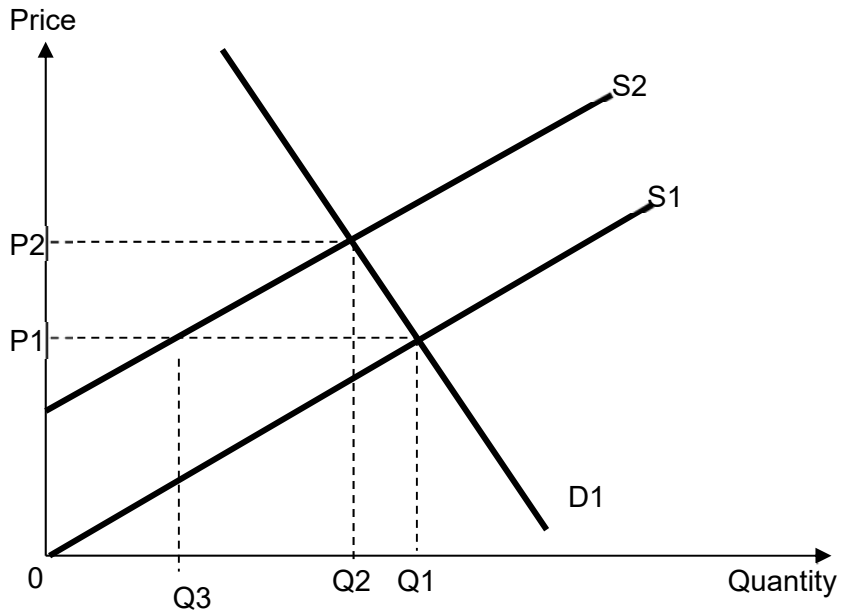
students failed to recognise that the price elasticity of supply plays a part in determining the eventual extent of increase in price.
  - Many students inaccurately applied price elasticity of demand (PED) to explain the extent of change in price, failing to recognise that PED is irrelevant when there is an increase in demand (i.e. shift of the demand curve).

(b) Analyse how the use of agricultural commodities, such as corn, to produce bioplastics could lead to "food price hikes" (Extract 2) and comment on why this might not happen. [7]

- Up to 5 marks for explanation of price hike
  - Rise in demand for agricultural commodities to produce bioplastics would lead to an increase in price of those commodities
  - Increase price of the commodities, which could be used to produce food products could increase the cost of production of food which leads to a fall in supply of food. Hence there is a shortage of Q3Q1 units of food at the initial price level, which exerts an upward pressure on price of food.

Figure 1: Market for food



  - As food has a high degree of necessity, demand for food is price inelastic. Hence the fall in supply of food with a steep demand curve results in sharp increase in price of food, as shown in figure 1.

  - *Alternatively students could explain the following*
    - Given an increase in demand for agricultural commodities, the increase in price would be significant.
    - This is due to the long gestation period and the perishable nature of the agricultural commodities which imply that their supply would be price inelastic.
    - This could lead to a huge increase in cost of production of food and hence a large fall in supply of food, leading to a food price hike.

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- Up to 2 marks for comment on why there may not be food price hikes (*any one of the following reasons well-explained would suffice)*
    - There could be increase in supply of food over time due to technological advancements in food production, which could help to lower food prices
    - There could be new innovations to produce bioplastic such that agricultural commodities are not needed as inputs and there would be reduction in competition for agricultural commodities between food and bioplastics, thus less likely for food price hike.
    - Extract 2 mentions that production of bioplastic requires "huge investment" and this could discourage producers from producing bioplastics hence the increase in demand for agricultural commodities may not be that significant and the competition for agricultural commodities may not be that significant as well, and less likely for food price hike to happen

Marker's comments:

- Many students did not realise that the market for agricultural commodities and the market for food were different markets, and wrongly focused on the market for agricultural market only. In the context of this case study, the agricultural commodities are used as an input for the production of food.
- Many students were confused between the concepts of competitive demand and competitive supply. When two goods are in competitive demand, they are substitutes. Bioplastics and food production are in **competitive supply** as they **use the same factor inputs** (land, chemicals, fertilisers, plants).
- Some students were confused with the cause and effect relationships between price and quantity. Students should learn that change in price of food leads to a change in quantity supplied or quantity demanded, not the other way around.

(c) Using an example from Extract 2, explain the concepts of scarcity and opportunity cost to farmers. [3]

[1m for precise definition of scarcity]

- Scarcity is defined as the situation where there is **limited resources** and **unlimited wants**.

[1m for explaining the choice to be made given the limited resource and competing uses of the resource]

- As farmers have **limited "land" space**, they have to **make a choice** between the use of land to produce crops for food or to produce crops for making bioplastics.

OR

- The plants grown by famers such as **corn and sugarcane are limited** and farmers have to **make a choice** between using the plants to produce food or for the production of bioplastics.

[1m for the correct application of opportunity cost to farmers]

- When farmers chose to produce more crops to make bioplastics, they have to incur an opportunity cost and forgo the value of the next best option, which is the potential **revenue/profit** earned from producing more crops for food.

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Marker's comments:

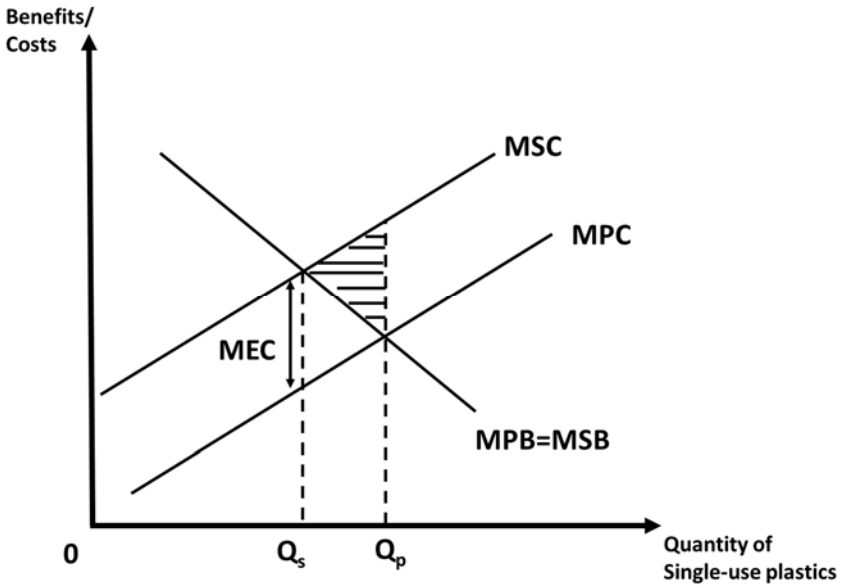
- Quite a number of scripts had a misconception between the concepts of scarcity and shortage. The following table shows the differences between the two concepts:

Scarcity	Shortage
• Arises because of limited resources (factors of production) relative to unlimited human wants	• Arises because quantity demanded is greater than quantity supplied at the equilibrium price
• Cannot be resolved by the price mechanism, may be **alleviated** by technology advancement and/or an increase in the quality and/or quality of resources	• Can be eliminated through the price mechanism
• Necessitates choice and incurs an opportunity cost when a choice is made.	• In the free market, a shortage will lead to a higher price which will reduce quantity demanded and increase quantity supplied until a new equilibrium is reached

- Definitions of scarcity and opportunity costs were imprecise. The importance of precise definitions has been emphasised thoroughly and yet there are many students who lost marks due to imprecise definitions.
- The application of the concept of opportunity cost to farmers were relatively weak. The majority of students either did not identify the "value" of the next best alternative forgone, or did not explain the opportunity cost to "farmers", choosing to talk about food prices hikes and a food crisis or other consequences for consumers instead.

(d) (i) Explain how the use of single-use plastics can lead to an inefficient allocation of resources. [6]

Figure 2: Market Failure for Single-use Plastics



- Up to 3m for explanation of external cost, including divergence
    - Use of single-use plastics generate **negative externalities in consumption** and impose external costs of third parties who are not involved in the production or consumption of plastics. [1]
    - Inappropriate disposal of plastics has resulted in external costs due to marine pollution and the microplastics particles that could be consumed by **third parties**. These third parties include residents not involved in the production or consumption of the plastic wastes but who drink the water or eat seafood near the waste sites, thus falling sick and incurring medial costs [1]
    - The presence of the external cost results in a **divergence** between the marginal private cost (MPC) and the marginal social cost (MSC), where MSC > MPC [1]
- Up to 3m for explanation of overconsumption and deadweight loss
    - Consumers only consider their private costs (e.g. price of plastic bottles/bags) and benefit when consuming plastics (e.g. the convenience derived from the use of plastic bottles/bags) and do not take the external cost into account. Hence they consume at **Qp where MPB = MPC**. However, the socially optimal level of plastic consumption is at **Qs where MSC = MPC**. [1]
    - There is an **over-consumption** of plastics as Qp > Qs, [1]
    - From Qs to Qp, each additional unit of plastic consumed adds more to society's cost than benefit, hence there is a **deadweight loss** as indicated by shaded area in Figure 2. Too much resources are allocated to plastic consumption and there is an inefficient allocation of resources [1]

<u>Marker's Comments:</u>

- This question was generally well done with most students being able to support their analysis with well-drawn diagrams
- There were a handful of scripts that identified the market failure to be a demerit good issue. This is incorrect as there is little imperfect information in the use of the plastic to the consumer himself/herself.
    - These students often have a misconception on what exactly imperfect information is – imperfect information is ignorance of the cost/benefits of consumption to the **consumer himself/herself**. Those who made this effort often (incorrectly) associate the microplastic consumption with the consumer's ignorance to his/her personal health, rather than a neglect of the external costs due to waste disposal.
- There were several scripts who identified animals as third parties who suffer from the use of single-use plastic. **Third parties are supposed to be humans** – focus on the costs to humans (sorry if you feel strongly for the animals, but they do not feature for this particular purpose of economic analysis, unless you are able to make a link to costs to humans!)
- In such market failure questions, there are two key opportunities for students to contextualise. While many students do 1, few did 2 well, which is a shame, as it is really not that difficult!
    1. In the description of the external cost
    2. In the description of the private costs and benefits

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(d) (ii) Discuss whether imposing a ban or levying tax on single-use plastics is more appropriate in addressing such inefficient allocation of resources. [8]

Question interpretation

Command word/phrase	*Discuss whether … most appropriate*	This question requires students to present analysis for two policies before comparing them.
Content	*ban … tax … inefficient allocation of resources*	The focus of the question should be on efficiency and how the two policies can be used to attain this goal. Other non-efficiency arguments can be used to judge 'appropriate-ness' as well.
Context	*single-use plastics*	There are several good examples the benefits and costs of this good in the case and should to be used in the discussion.

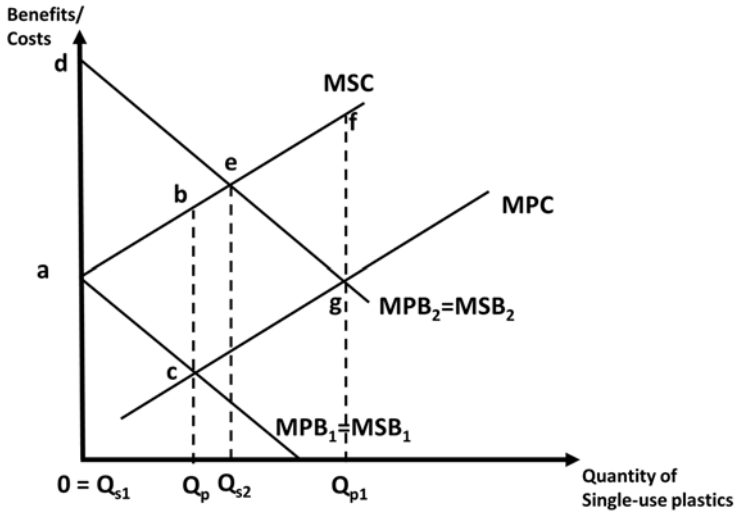
This answer requires students to analyse how a tax and ban work to address the market failure of negative externalities in consumption presented in part (d)(i) and present some limitations of both policies as well. Students should actively use the case/context of plastic to argue for whether a tax or ban is more appropriate. It is likely easier to argue for the former.

Introduction

- Both a ban and a tax on single-use plastics can be used to curb the over-consumption of plastics (as illustrated in (d)(i)) so as to achieve allocative efficiency

Key argument 1: Explain how ban on single-use plastics can achieve allocative efficiency and its limitations

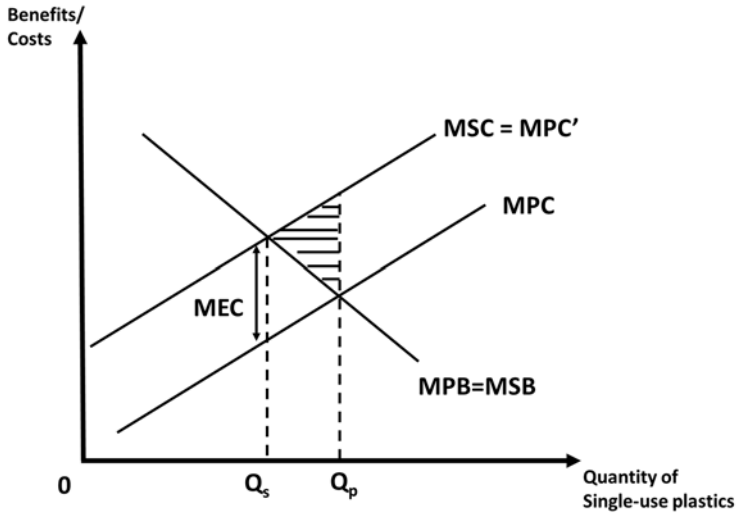
Figure 3: Ban for Single-use Plastic



- Ban on single-use plastics would eliminate the use of plastics completely. Such a ban would be optimal if the marginal external cost of using single-use plastics is very large such that the socially optimal level of plastic usage is zero, as shown in the intersection of MSB1 and MSC in Figure 3 above. The imposition of the ban will eradicate the DWL of area abc completely.
- However, the imposition of a ban is a very extreme measure and may not be appropriate in this case.
    - As indicated in the case, while there exists an external cost to the consumption of plastic, there also exists a high MSB of consumption as single-use plastics are often used "to ensure food and water safety. Domestic food aid, emergency responses, and international aid efforts all require food and water that can be stored without refrigeration and distributed when and where it's needed."
    - If MPB and MSB is high (as shown by $MPB_2 = MSB_2$ in Figure 3), then the use of a ban might lead to a DWL of area ade which is larger than the initial DWL of area efg, which worsens allocative efficiency.
- The ban is relatively quick to implement and understand. However, there might be some enforcement issues if black markets appear due to the strong benefits and a lack of substitutes for some plastic products.

Key argument 2: Explain how tax on single-use plastics can achieve AE and limitations

Figure 4: Taxes for Single-use Plastic



- Tax = MEC at Qs could be imposed on single-use plastics would increase private cost of consuming plastics and shift MPC upwards to MPC'. As a result, the new equilibrium output where MPB = MPC' would coincide with the socially optimal level of output at Qs. This would eliminate the deadweight loss and result in allocative efficiency.
- The imposition of tax would force consumers to internalise the negative externalities and reduce their usage of plastics to the socially optimally level at Qs.
- However, given imperfect information, the government may not be able to estimate the MEC accurately and the amount of tax imposed may be insufficient to reduce plastic consumption to the socially optimal level, which could still lead to DWL due to over- or under-consumption. However, as the amount of tax could be adjusted to achieve

allocative efficiency, it is likely to be a more appropriate measure as compared to a ban.

- Similar to the ban, extra resources will be spent on enforcing the tax. However, revenue can be collected from the tax which can be used for R&D purposes for more effective waste disposal methods.

Evaluative conclusion

- **[Stand]** In conclusion, a tax on single-use plastics is likely to be more appropriate as it is less extreme, unlike a ban. A ban is a blanket measure that restricts all forms of single-use plastic usage, even when it could be necessary "to ensure food and water safety" as mentioned in extract 3, and this could bring about unintended consequences with hygiene problems, which is likely to be worse than the imposition of taxes
- **[Magnitude]** A tax is more appropriate than a ban as unlike a ban, revenue can be collected from the tax, which can be used for further R&D purposes to find cleaner waste disposal methods that can eradicate the negative externalities in consumption over time.
- **[Alternatives/Magnitude]** In cases where single-use plastics are excessively used and unnecessary, government could implement a partial ban where the use of plastics is less of a necessity such as partial ban of plastic related products such as plastics bags. Such a ban would be more appropriate than a tax as it is more targeted to problem areas. In other areas where health and safety is maintained through the use of plastic products, a ban would be less appropriate and a tax may be more appropriate.

Level	Knowledge, Application/Understanding, and Analysis	Marks
L2	For a well-developed answer that discusses and compares the appropriateness and limitations of both a ban and a tax on single-use plastics in addressing inefficient allocation of resources.	4 – 6
L1	An answer that only discusses the effectiveness and limitations of imposing a ban or a tax. OR An answer that explains both the imposition of a ban or tax but did not explain the limitations of both policies.	1 – 3
E	Up to 2 marks for valid evaluative comment(s) on the relative appropriateness of a ban and a tax, well-substantiated with case materials and economic analyses.	1 – 2

<u>Marker's Comments:</u>

- Many students gave good two-sided analyses for each policy, with the better answers paying closer attention to the use of each policy to tackle the efficiency issue.
    - Weaker arguments centred on political and social arguments, instead of economic arguments.
- Several scripts argued that the ban is useful because it eradicates negative externalities totally by reducing consumption to zero. However, what these scripts fail

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to see is that the goal of the government is not really to eradicate negative externalities totally, but **to reduce it to a socially optimal level**, such that social benefits can still be gleaned from the consumption of the good.

- Stronger answers used the case actively and noted the high levels of MPB (and hence MSB) in the consumption of plastics to justify why the ban does not work very well.
    - Weaker arguments gave generic explanations of both policies without close consideration to the case.
- The diagrams drawn in this answer scheme are recommended to improve the rigour of analyses, but are not compulsory, as there were some script that were able to make their arguments clearly without the diagrams. Majority of good scripts included diagrams though.
- There were several good evaluative conclusions written where there was a clear comparison between both policies using different criteria (e.g. ability to improve allocative efficiency, strain on the govt budget) or which considered how they can be used together (tax in the short run and ban in the long run).
- Weaker evaluations tended to just reiterate the pros and cons of both policies without any active comparison to argue which policy is more appropriate.

(e) Using the information provided and/or your own knowledge, evaluate the view that the Indian government should develop the biodegradable plastic industry like the UK. [12]

Question Interpretation

Command word/phrase	*Evaluate*	To analyse the costs and benefits on India's economy should the Indian government develop the biodegradable plastic industry like the UK and make a judgement on whether the development should be made
Content	*View that…should develop the biodegradable industry like the UK*	To consider the factors (e.g. benefits, costs, unintended consequences, constraints) that will influence the Indian government's decision
Context	*Indian government*	Specific to India's economy.

Students are required to consider the factors (e.g. benefits, costs, unintended consequences) that will influence the desirability of the Indian government's decision to develop the biodegradable plastic industry like the UK, before forming a well-substantiated judgement on whether the development should go ahead.

Introduction

- At present, the Indian economy has a developed conventional plastics industry but the negative externalities generated poses health problems for its citizens.
- Should the Indian government develop the biodegradable plastic industry like the UK, it may enjoy increased output and sustainable growth, but could incur costs like structural unemployment as well.

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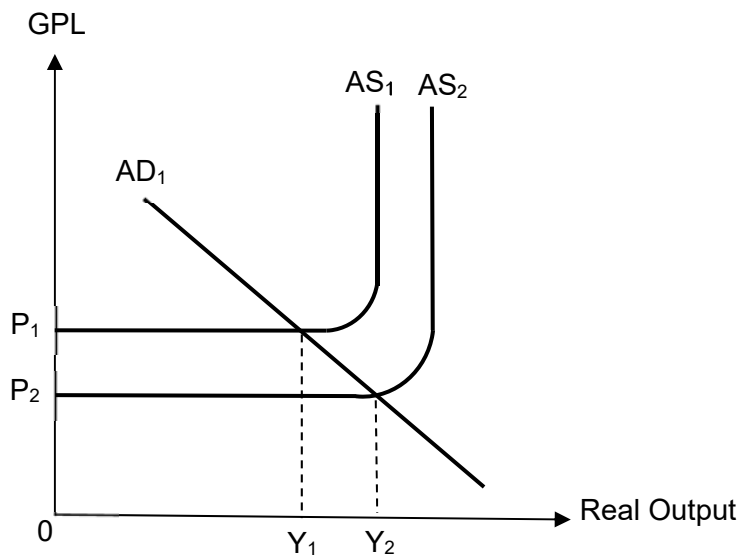
Body

Thesis - explain how the development of biodegradable plastic industry could bring benefits to India's economy.

- The Indian government may want to develop the biodegradable plastic industry to achieve sustainable growth, a rate of growth that can be maintained without causing excessive environmental damage.
- Since conventional and biodegradable plastics are in competitive demand (substitutes), developing biodegradable plastics could result in a reduction in the consumption of conventional plastics. This will reduce the amount of "plastic waste" and the negative externalities such as health problems from drinking water or eating seafood contaminated with "microplastics." When consumption of conventional plastics can be reduced to the socially optimal level, the deadweight loss is eliminated and there will be greater allocative "resource efficiency."
- The development of biodegradable plastic would foster research and development (R&D), which has the potential to increase the quality of capital. Furthermore, firms who use bio-plastics in their production can avoid "the additional costs of Landfill tax" and enjoy lower cost of production. The increase in quality of capital and lower unit cost of production will increase the aggregate supply, shifting the AS curve from AS_1 to AS_2. Real output increases from Y_1 to Y_2, and there is sustained growth. Hence, India could potentially enjoy the increased output and employment opportunities – the "1,000 jobs and £43.4 million of direct output" (Extract 6) that the UK economy has enjoyed.

Figure 1: Sustained growth



- In addition, the development of biodegradable plastic would encourage more environmentally sustainable practices and reduce the extent of damage to the environment, helping India to achieve sustainable growth. The increase in material and non-material living standards of Indian residents from sustainable growth could hence be reasons why the Indian government should develop the biodegradable plastic industry.

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Antithesis - explain how the development of biodegradable plastic industry could also incur costs to the India economy.

- However, Indian government may not want to develop the biodegradable plastic industry because of the negative consequences to the India economy.
- Conventional plastics production currently dominates the plastic industry in India, "employs about 4 million people" and "host more than 2,000 exporters." This means that the conventional plastic industry is a large driver of growth because it generates export revenue and employment.
- Should the government develop the biodegradable plastic industry, this could result in a decline of the conventional plastic industry. When the derived demand for labour in the production of conventional plastics fall due to reduced production, there could be significant structural unemployment. Workers working in the conventional plastic industry tend to be occupationally immobile and are likely to lack the relevant skills to transit to the biodegradable plastic industry.
- Moreover, given that the plastic industry contributes greatly to the country's export revenue, a declining conventional plastic industry could lead to a fall in net exports, a decrease in aggregate demand and negative growth in India.
- More importantly, since bio-plastics and food production are in competitive supply, the production of biodegradable plastics will "trigger a competition between plants for good versus plants for plastics, which will likely lead to food price hikes" as explained in part (b) earlier. Given the poverty situation in India, a sharp increase in the price of food, a necessity, would affect the lower income to a larger extent and aggravate inequity.

Evaluative conclusion

- Whether the Indian government should develop the biodegradable plastic industry like the UK depends on the magnitude of the benefits relative to the costs on the economy.
- **[Time frame + Magnitude]** In the short run, it seems undesirable to develop the biodegradable plastic industry given that the employment opportunities of an increase in "roughly 1,000 jobs" is much lesser than the "4 million people" currently employed in the conventional plastic industry. However, in the long run, should India continue to focus on producing conventional plastics, the "availability of raw materials" could deplete over time and the accumulated plastic waste could cause growth to be unsustainable. When that occurs, the standard of living of residents would be adversely affected in general.
- **[Stand]** Hence, the Indian government should still develop the biodegradable plastic industry like the UK, but put in place policies to mitigate the negative consequences.
    - **[Alternatives]** For example, initiatives such as providing training and education to help workers transit to the bio-plastic industry to alleviate structural unemployment and subsidies for firms' R&D plans to seek for alternative inputs for the production of bio-plastics to prevent food price hikes could be implemented.

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Mark Scheme

Level	Knowledge, Application/Understanding, and Analysis	Marks
L3	For a rigorous and balanced answer that: • Discusses the benefits and costs of the India government in developing the biodegradable plastic industry, • Has sufficient scope by including the microeconomic and macroeconomic impacts on the India economy, and • Is well applied to the India economy	6 – 9
L2	For an answer that provides a one-sided explanation of only the benefits or costs of the India government in developing the biodegradable plastic industry. OR An answer that explains the benefits and costs of the India government developing the biodegradable plastic industry without o rigorous use of economics concepts and/or o reference to case context	3 – 5
L1	For an answer that shows some understanding of why the India government should and/or should not develop the biodegradable plastic industry.	1 – 2
E	Up to 3 marks for valid evaluative comment(s) on whether the India government should follow the UK to develop the biodegradable plastic industry, well-substantiated with case materials and economic analyses.	1 – 3

Marker's comments:

- Time management was an issue. At least 15% in the cohort did not manage to complete this 12m question sufficiently, with some even leaving blanks. Students should allocate at least 20min to complete this question and practice under timed conditions to train their thinking and writing speed.
- The majority of candidates are lacking skills in answering techniques. The following table shows a comparison between the different answering techniques:

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Poor answer techniques exhibited by weaker candidates	Good answer techniques demonstrated by stronger candidates
Introduction • Only described the UK context even though the question was on India.	Introduction • Stated the approach by briefly listing the benefits and costs that would affect the Indian government's decision to develop the biodegradable plastic industry.
Body • Topic sentences did not address the question. Examples include stating how the UK industry benefitted from producing biodegradable plastics, or the measures that the Indian government can implement to develop biodegradable plastics. • Quoted chunks of case materials excessively in place of economic analysis.	Body • Clear topic sentences that addressed the question by using the question keywords. For e.g. "The Indian government should develop the biodegradable plastic industry like the UK because of the benefits that it could gain in terms of increased output." • Explained economic concepts in detail, showing rigour in analysis through thorough step-by-step linkages between case and effect relationships. Case materials are used merely to support analyses.

- A general weakness of the cohort is in the development of arguments due to a lack of elaboration. Often, claims and assertions are made without adequate support, resulting in descriptive answers. As a general guide, try to address all the "how" and "why" behind statements made. To demonstrate rigour, students should use tools of analysis like the AD/AS framework, and include diagrammatic analysis to improve the quality of their answers.
- Some candidates misinterpreted the case, thinking that "the availability of raw materials" in India could help lower the cost of production of biodegradable plastics when these raw materials like "PVC" are for the production of conventional plastics.
- Students should aim to be explicitly clear in their answers. For example, when explaining the unemployment or growth would be affected, they should analyse the type of unemployment (demand-deficient, structural) that would result. For growth, they should indicate the type of growth (actual, potential, sustained, sustainable) as well.
- For evaluation, while the criteria such as the budget position of the government and level of development of a country were stated as factors that would influence the desirability of the Indian government's decision to develop the biodegradable plastic industry, not many went on to justify why these factors were important. For instance, students stated that India is a developing country and should hence focus on sustained growth instead of sustainable growth without justifying this claim.
- On a positive note, the majority of candidates were able to structure their answers to demonstrate a balanced discussion, and allocated time to attempt evaluation, hence addressing the requirements of the command word "evaluate".

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Question 2 Donald Trump and the US economy
Suggested Answers

(a)	(i)	**Summarise the trend in the net exports in Table 1.**	**[2]**

- There was an overall worsening of net exports deficit by 42.2% [1]
- The greatest worsening of the deficit was from 2014 to 2015 by 25.7% [1]

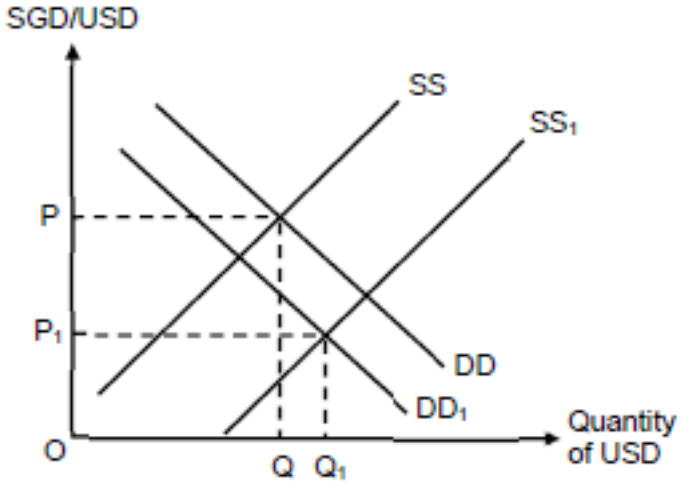
Marker's comments:

- Most students did not indicate a significant refinement from the trend.
- Students are expected to calculate % changes instead of absolute changes.

(a)	(ii)	**Using a diagram, explain how the overall trend in net exports affects the external value of the USD.**	**[4]**

- The worsening of net exports deficit would indicate that export revenue decreased while import expenditure increased. There was more outflow of USD than inflow of USD. Since there was less demand for US exports by foreigners, foreigners' demand for USD decreased. The demand curve shifted from DD to DD_1 in Figure 1 [1].
- As US residents demanded for more imports, there was the need for them to exchange USD for foreign currency. This led to an increase in supply of USD. The supply curve shifted from SS to SS_1 [1].
- From Figure 1, the external value of USD fell (or USD has depreciated) as a result of a decrease in demand for USD and an increase in supply of USD [1].
- Correctly labelled diagram that matches analysis [1]

Figure 1: Demand & Supply of the USD



Marker's comments:

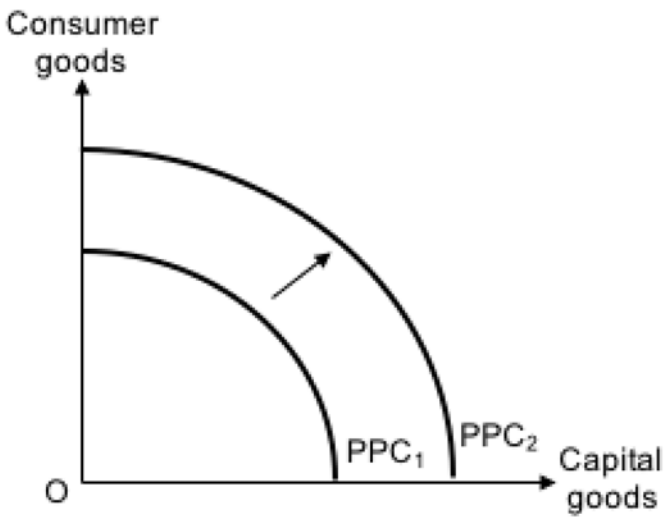
- Some students failed to determine the focus of this question.
- Most students did not consider how demand for USD and supply of USD change as a result of a worsening net export deficit.
- Axes were labelled incorrectly or incompletely. Acceptable Y axis are:
  1. SGD/USD
  2. Price of USD in terms of SGD
  3. Value of USD to SGD

4. Value of SGD per USD.

(b)		**Using a Production Possibilities Curve, explain how the proposed immigration law will impact the US economy.**	**[3]**

- The proposed immigration law will slow down the rate of increase of immigrants into the US. Assuming these immigrants take on jobs in the US, this translates to an increase in quantity of labour into the US, increasing her productive capacity, albeit at a slower rate than before. [1]
- As seen in Figure 2, the Production Possibilities Curve thus shifts outwards, from PPC_1 to PPC_2. [1]
- National output and income of the US economy increases as a result.
- Correctly labelled diagram that matches analysis [1]

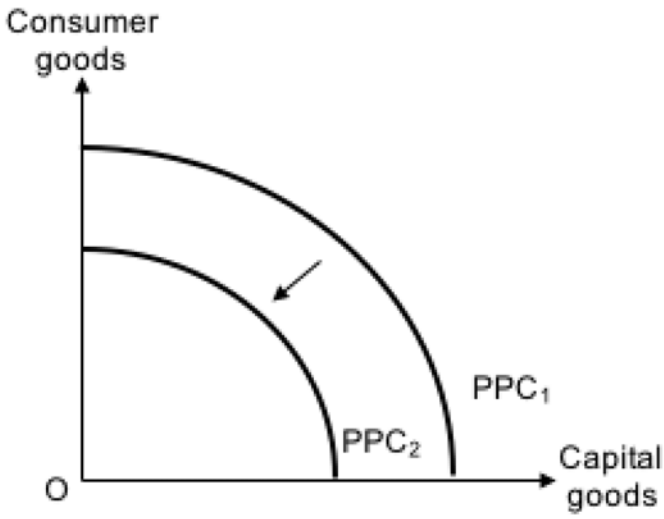
Figure 2: PPC of US economy



Alternative answer

- Assuming that the rate of inflow and outflow of labour into and out of the US workforce were constant before the law was enacted, the proposed immigration law will decrease the inflow of labour into the US workforce, ceteris paribus. This results in the reduction of the quantity of labour in the workforce, thus reducing her productive capacity.
- As seen in Figure 3, the Production Possibilities Curve thus shifts inwards, from PPC_1 to PPC_2. [1]
- National output and income of the US economy decreases as a result.
- Correctly labelled diagram that matches analysis [1]

Figure 3: PPC of US economy



Note: both answers were accepted and were given full credit if the economic reasoning that accompanied the shift of the PPC was accurate.

Marker's comments

- This question was poorly attempted as some students seemed to have forgotten their PPC concepts, especially when positioned within a mainly Macroeconomics case study question.
- Students mainly left the reasoning for the increase or decrease in productive capacity due to the immigration law unexplained, and therefore many students only scored a maximum of 2 marks for this question.
- Some students drew a pivotal shift of the PPC curve but failed to explain the reason why they drew it this way.
- These are a few key areas that students can improve on the drawing of their diagrams:
  1. Label the PPC curves
  2. Label the point of origin
  3. Label the axes correctly – consumer and capital goods would reflect the macro economy better than simply good X and good Y

(c)	(i)	**Using Extracts 8 and 10, identify and explain two sources of unemployment in the US economy.**	**[4]**

Identifying and explaining demand-deficient unemployment [2]

- Extract 8 stated that the US GDP "contracted at a 0.7% seasonally adjusted annual rate", "the official measure of GDP fell into negative territory" and "exports of goods fell by the most since the first quarter of 2009".
- These evidence show that the US economy is experiencing a period of recession, where GDP fell due to a fall in Aggregate Demand. Therefore, there would be lower production, and lower derived demand for labour. This means that US is currently experiencing demand-deficient unemployment.

Identifying and explaining structural unemployment [2]

- Extract 10 mentioned that "manufacturing, while still a driving force in the economy, employed fewer and fewer people", and "more than 80 percent of jobs are now in the service industry".
- This means that there are now more jobs created in the service industry while the manufacturing industry is seeing a decline in the number of jobs created. Workers who were laid off from the manufacturing industry and are unable to transit into the service industry are therefore structurally unemployed. This is due to the mismatch of skills between the workers and job vacancies.

Marker's comments:

- Students generally did well for this question as they mainly were able to identify and explain the two types of unemployment found in the extracts.
- Students who did poorly for this question had two main issues:

1. Could not identify the correct type of unemployment
   - Some students pointed out that there was frictional unemployment in the economy, when their explanation was about demand-deficient unemployment for example.
2. Identified an inaccurate evidence to support the explanation
   - Students' evidence to show structural unemployment: "Breadwinners who once held well-compensated manufacturing jobs are angry about being forced to settle for lower-wage service jobs"
     - This implied that these workers were still **employed**, just that they were made to work in jobs that paid lesser.
   - Correct evidence: "Breadwinners who once held well-compensated manufacturing jobs are angry about being forced to settle for lower-wage service jobs – **or no jobs at all**"
     - The evidence "or no jobs at all" would therefore suggest that these workers are unemployed, and more specifically, structurally unemployed.

(c)	(ii)	**Discuss whether low unemployment can be achieved through the lowering of direct and indirect taxes.**	**[8]**

Question interpretation

Command word/phrase	*Discuss whether*	To present different alternatives, before coming to a reasoned conclusion
Content	*Lowering of direct and indirect taxes;* *Low unemployment*	Direct taxes – personal and corporate income tax (part of fiscal policy) Indirect taxes – goods and services tax (supply side policy) Unemployment – different types of unemployment
Context	*Nil*	Students are to set their own context while writing the answer and its evaluation

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This answer requires students to first explain how the lowering of direct taxes and indirect taxes can individually achieve a low level of demand-deficient unemployment before discussing the limitations of these two taxes in achieving low unemployment. The evaluation requires a judgement on whether the lowering of these two forms of taxes is able to achieve the intended outcome.

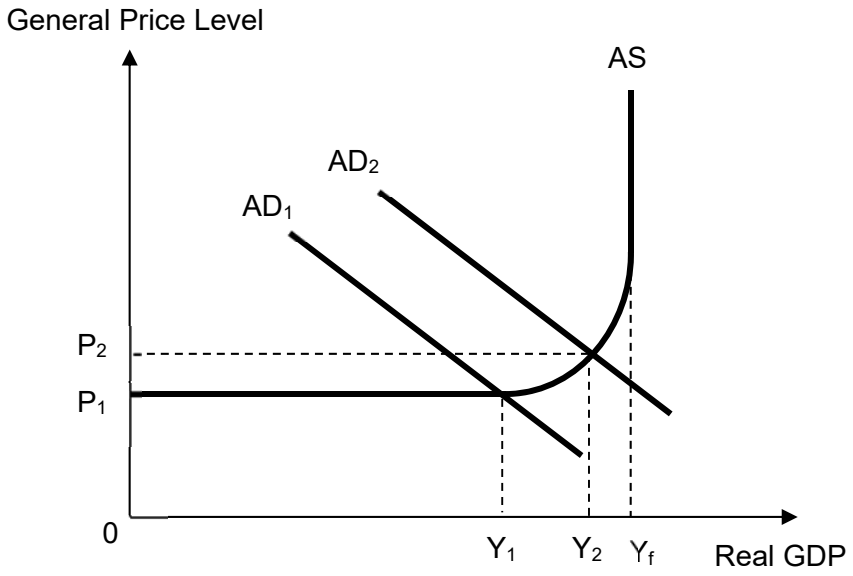
Introduction

- Direct taxes like personal and corporate income tax are part of the government's fiscal policy, while indirect taxes like goods and service tax is a supply side policy.
- Low unemployment refers to the situation where demand-deficient unemployment is near zero, with minimal structural and frictional unemployment.
- This response aims to discuss whether low unemployment can be achieved through the lowering of direct and indirect taxes.

Explain how lowering of direct taxes can lower demand-deficient unemployment

- The lowering of direct taxes can help to increase the derived demand for labour, hence reducing demand deficient unemployment.
- When personal income taxes are lowered, households' disposable income increases, thus increasing their purchasing power. Hence, they will be incentivised to spend more on goods and services, thus increasing consumption expenditure (C).
- When corporate income taxes are lowered, firms' post-tax profits increases. This therefore incentivises them to purchase more capital goods, thus increasing investment expenditure (I).
- As C and I are components of Aggregate Demand (AD), when both increase, AD increases. Assuming that there is spare capacity in the economy, the multiplier effect would lead to a larger increase in AD via subsequent increases in induced consumption.

Figure 4: Increase in AD



- From Figure 4, the increase in AD is represented by a rightward shift of the AD curve from AD_1 to AD_2.

- As a result, the real GDP increases from Y_1 to Y_2. As more output is produced, the derived demand for factors of production like labour increases.
- This reduces demand-deficient unemployment, as unemployment levels fall from $Y_f – Y_1$ to $Y_f – Y_2$.

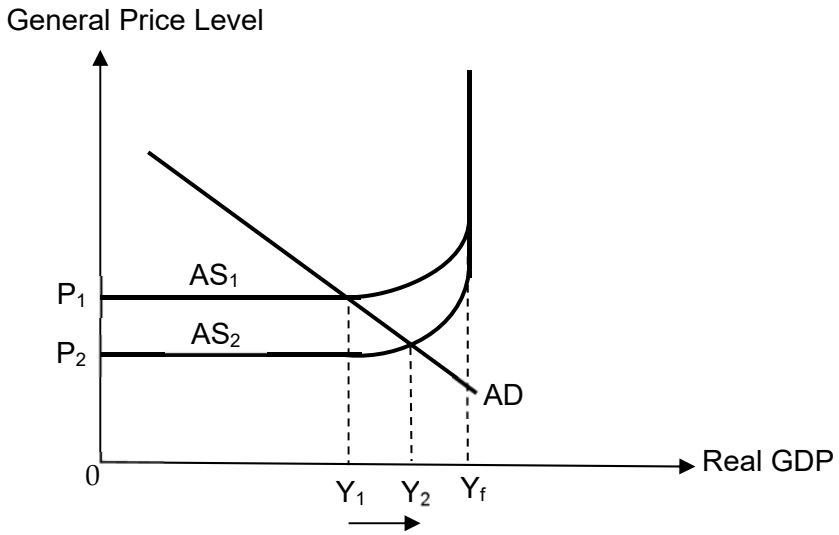
Explain the limitations of direct taxes in achieving low unemployment

- However, in periods of recession, where the consumer and business confidence is low, consumers and households may be pessimistic about their future income and profits and there might not be a significant increase in the AD. Production would therefore not increase by much, and there may not be a significant reduction in demand-deficient unemployment.
- Moreover, even if the lowering of direct taxes result in the successful lowering of demand-deficient unemployment, it may result in other forms of unemployment like structural unemployment. As direct taxes are lowered and AD increases, it may raise demand in the sunrise industries more than the sunset industries. This increases the labour shortage in the sunrise industries and results in higher structural unemployment due to the mismatch of skills as workers are unable to transit from the sunset to sunrise industries.

Explain how lowering of indirect taxes can lower demand-deficient unemployment

- The lowering of indirect taxes can help to increase the derived demand for labour, hence reducing demand-deficient unemployment.
- When indirect tax like goods and services tax is lowered, the economy-wide cost of production lowers.
- This causes an increase in the Aggregate Supply (AS), as seen from the downward shift of the horizontal section of the AS curve from AS_1 to AS_2 in Figure 5 below.

Figure 5: Increase in AS



- As a result, the real GDP increases from Y_1 to Y_2. As more output is produced, the derived demand for factors of production like labour increases.
- This reduces demand-deficient unemployment, as unemployment levels fall from $Y_f – Y_1$ to $Y_f – Y_2$.

Explain the limitations of indirect taxes in achieving low unemployment

- The effectiveness of lowering indirect tax to achieve increase in real GDP and lowering of demand-deficient unemployment is dependent on the state of the economy. If the economy is already at full employment, the lowering of indirect tax will not have any impact on output and employment.

Evaluative Conclusion

- **[Stand]** The lowering of direct and indirect taxes can achieve low unemployment in an economy if the main source of unemployment in the economy is demand-deficient unemployment.
- **[Situation]** This is because, the use of these two taxes can only achieve a lowering of demand-deficient unemployment but not other types of unemployment like structural and frictional unemployment. If the economy's main type of unemployment is structural unemployment, the lowering of direct and indirect taxes may not be able to achieve low unemployment, and instead may worsen the structural unemployment in the economy. If that is the case, the use of supply-side policies like skills retraining can help to complement the lowering of direct and indirect taxes in achieving low unemployment.
- **[Magnitude]** Between direct and indirect taxes, the lowering of personal income tax is likely to be less effective in achieving low demand-deficient unemployment, while the lowering of indirect tax is more effective. This is because the impact of the lowering of personal income tax is largely dependent on households' marginal propensity to consume. If the MPC is low, a decrease in personal income tax does not lead to a large increase in consumption and hence AD, as households save up the additional income. As a result, it may not lead to a significant decrease in demand-deficient unemployment. On the other hand, a reduction in indirect tax directly reduces cost of production and increases the AS, lowering demand-deficient unemployment. Thus, indirect tax is likely to be the more effective policy.

<u>Mark Scheme</u>

Level	Knowledge, Application/Understanding, and Analysis	Marks
L2	For a well-developed and balanced answer that discusses the workings of direct and indirect taxes in lowering unemployment together with the accompanying limitations of both taxes in achieving low unemployment.	4 – 6
L1	For an incomplete answer that only discusses the workings of direct and indirect taxes in lowering unemployment without the limitations of the taxes, OR For an incomplete answer that only discusses the workings and limitations of direct or indirect taxes in lowering unemployment OR For an answer that discusses the workings of direct and indirect taxes in lowering unemployment and their limitations briefly. **Cap at 2m if answer does not distinguish between the two types of taxes.*	1 – 3

	E	Up to 2 marks for valid evaluative comment (s) on whether the lowering of direct and indirect taxes can help to achieve low unemployment in an economy.	1 – 2

Marker's comments

- Many students did pretty well for this question, with their answers generally scoring in the L2 range.
- Students who did not do well had been affected by their scope of analysis and their economic rigour in explaining the concepts.
- These students were generally confused between direct and indirect taxes and failed to realise that they were essentially different types of policies. Explaining both together as one impacted their scope of analysis negatively. Direct taxes are mainly demand-management policies while indirect tax is a supply side policy. Students are reminded to make a mental distinction between the two types of taxes.
- Some students were also confused with the impact of indirect taxes. They mentioned that the indirect tax raises consumption expenditure and hence AD because the prices of goods is now lower. This is a source of misconception because if the GPL is lowered due to the lowering of indirect tax, it is reflected by a movement along the AD curve instead of a shift of AD curve. It should be a downward shift of the AS curve.
- There were some good evaluative responses and most students were able to score at least a 1 mark for evaluation. Students who scored 0 marks for evaluation however, were mainly not answering the question directly. They are reminded to try using phrases embedded within the question to help them answer the question directly for their evaluation.

(d)		**Using Extracts 10 and 11 and with the aid of a diagram, account for the change in general price level in US between 2016 and 2017.**	**[5]**

Explain AD increase [2]

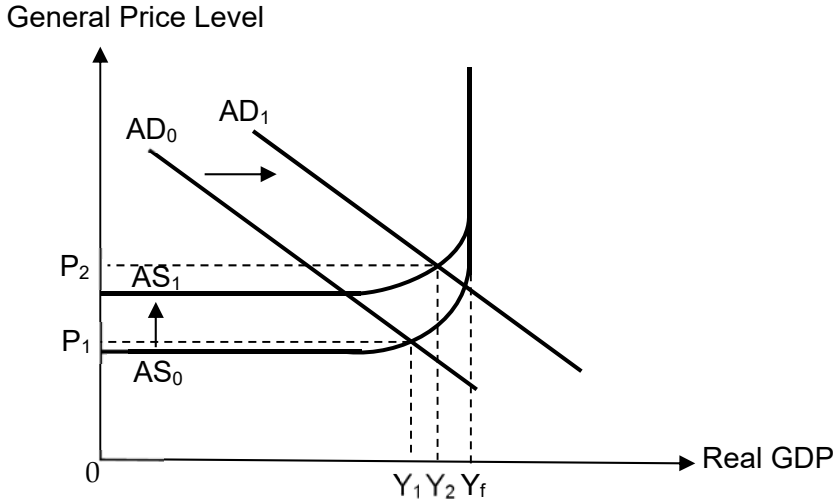
- From extract 10, it was mentioned that "consumers are expressing the highest levels of confidence in nearly a decade". This therefore suggests that, with the positive consumer confidence, consumers are likely to spend, thus increasing the Consumption expenditure (C) component in the Aggregate Demand (AD). AD thus increases.
- In addition, there was "another 178000 people on payrolls" and "pushed unemployment rate down to 4.6 per cent today from 4.9 per cent". The increase in employment rate leads to an increase in household incomes and purchasing power, thus leading to an increase in C. AD increases as well.

Explain AS decrease & combined impact on GPL [2]

- Extract 11 states that there was a "big jump in energy prices in the aftermath of Hurricane Harvey", and "caused gasoline prices to spike around the country".
- As gasoline is an important factor input for many industries, and is commonly used in the production of goods and services, an increase in energy prices will cause a rise in economy wide cost of production, thus decreasing Aggregate Supply (AS).
- In Figure 6, an increase in AD is represented by a rightward shift of AD curve from AD_0 to AD_1. A decrease in AS is represented by an upward shift of the horizontal section of

the AS curve from AS_0 to AS_1. This results in a rise in the General Price Level from P_1 to P_2.

Figure 6: AD AS diagram of the US economy [1]



Marker's Comments:

- A number of students did not correctly recognise that general price level in US increased between 2016 and 2017 (Table 1 & Extract 11), and explained a fall in general price level instead.
- For a better scope in the answer, students should look out for both demand and supply-side factors as far as possible when explaining the change in GPL. Answers must also make use of both Extract 10 and 11!
- Students are reminded that it is important to read each case extract as a whole to derive an accurate understanding of the context presented in the extract, instead of focusing selectively on particular points in it.
    - Extract 10: Several students explained how structural unemployment present in the US economy will cause C and AD to fall, thus decreasing GPL. However, from the extract, the economic situation in US improved overall and there was in fact a fall in the unemployment rate.
    - Extract 11: A number of students explained how the hurricane had destroyed the factories, which decreases the productive capacity of the economy, and hence results in a fall in AS (leftward shift) and an increase in GPL. Though this analysis is not wrong by itself, it is not what the extract suggests. The key point presented in the extract is how the hurricane caused energy prices to rise, which in turn led to a surge in consumer prices.

(e)		**Comment on whether the data provided is sufficient to conclude that there has been inclusive and sustainable growth in the US economy.**	**[8]**

Question interpretation

Command word/phrase	*Comment on*	Provide a balanced analysis and make a judgement on whether data provided is sufficient to conclude that there has been inclusive and sustainable growth in US economy
Content	*Data provided* *Inclusive and sustainable growth*	Use data to link to inclusive and sustainable growth Two different types of economic growth
Context	*US economy*	Economy of USA

This answer requires students to utilise the data to explain the parts where the data is able and unable to show that there has been inclusive and sustainable growth in the US economy. The evaluation involves an appropriate and reasoned comment on whether the data is sufficient or insufficient to conclude that there has been inclusive and sustainable growth in the US economy.

Introduction

- Inclusive growth indicates a rate of 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.
- Sustainable economic growth indicates a rate of growth that can be maintained without creating other significant economic problems.
- This response aims to analyse whether the data provided is sufficient to conclude that there has been inclusive and sustainable growth in the US economy.

Thesis: Explain how the data concludes that there is inclusive growth in US economy

- The data in Table 1 may be sufficient to conclude that there has been inclusive growth in the US economy.
- The GDP per capita has increased from $52,726 in 2013 to $59,535 in 2017. Inflation rates as measured by the change in consumer price index has been increasing but relatively low, from 1.46% in 2013 to 2.13% in 2017. The unemployment rate has fallen from 7.38% in 2013 to 4.35% in 2017. These three indicators show that there has been sustained economic growth in US.
- Furthermore the GINI coefficient, which measures the wealth distribution of a country's residents, fell from 0.396 in 2013 to 0.391 in 2017. This reflects that there has been a more even distribution of income in the US economy, thus suggesting that there has been inclusive growth.

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Anti-thesis: Explain how the data may not conclude that there is inclusive and sustainable growth in US economy

- While there was a fall in unemployment rate, it is not clear from the data if this was due to a rise in productive employment opportunities across a broad range of economic sectors. Also, it cannot be concluded if the employment opportunities were for a majority of the country's population or mainly for the higher-skilled workers. Hence, the data may not be entirely sufficient in showing that there has been inclusive growth in US.
- Despite a fall in the Gini coefficient, the fall is slight and the Gini coefficient remains relatively high. For a more accurate conclusion on inclusive growth, it would be beneficial to know if the Gini coefficient has taken into account taxes and transfers. If the Gini coefficient is significantly lower after taking into account the effects of the redistributive policies, there is clearer evidence of inclusive growth.
- The data provides information on the economic growth situation of the US. However, it does not provide information of how the growth is achieved, which could have been at the expense of the environment. There is no data or indicators on the environmental situation in US, or information on the policies taken by the government to mitigate adverse impacts to the environment, which could have allowed us to determine whether there was sustainable growth.

Evaluative Conclusion

- **[Stand]** The data provided is insufficient to conclude that there has been inclusive and sustainable growth in the US economy.
- **[Alternatives]** In order to determine if there was sustainable growth, we would require more data on the impact of economic growth on the environment. Some examples include, the level of carbon taxes, air quality index and the environmental sustainability index. For us to determine accurately if there was inclusive growth, we would require data on the type of employment opportunities created in the economy. Also, we would need to have information on whether the GINI coefficient has taken into account the level of taxes and transfers.

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Mark Scheme

Level	Knowledge, Application/Understanding, and Analysis	Marks
L2	For a well-developed and balanced answer that • discusses both the sufficiency **and** insufficiency of the data in concluding inclusive and sustainable growth in the US economy. **A well-explained one sided response for how the data might be sufficient in concluding inclusive and sustainable growth can score a max of 4 marks.*	4 – 6
L1	For an underdeveloped answer that • is one-sided and only discusses how the data might be sufficient **or** insufficient in concluding inclusive and sustainable growth in the US economy, OR • briefly discusses how the data might be sufficient and insufficient in concluding inclusive and sustainable growth in the US economy.	1 – 3
E	Up to 2 marks for valid evaluative comment (s) on whether the data provided is sufficient in concluding that there is inclusive and sustainable growth in the US economy.	1 – 2

Marker's Comments:

- Many students were confused with the requirements of the question and misinterpreted the question as one of the following:
  - Comment on whether the data shows that there is inclusive and sustainable growth in the US economy.
  - Comment on whether the policies implemented have achieved inclusive and sustainable growth in the US economy.
- It is important to be clear what the issue of contention is in the question - whether there is enough data provided in the case to show that inclusive and sustainable growth exist in the US economy. If it is argued that there is insufficient data, students should clearly point out the limitations of the data present and the data that is lacking in the case.
- Students are reminded to be discerning in their selection of case material as data or evidence to be used to support their arguments.
  - A number of students did not use the data provided in Table 1 at all, though the economic indicators provide the most objective evidence of the growth situation in the US economy.
    - Instead, these responses made often tenuous inferences of the existence of inclusive and sustainable growth from other data present in the case, such as Trump's economic revival plan (Extract 9) or the increase in gasoline prices (Extract 11).
    - Such responses usually ended up explaining the possible impact of such policy measures or events on inclusive and sustainable growth in US instead.
- A handful of students were still confused between sustained growth and sustainable growth.

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(f)		**"Low unemployment is the main factor contributing to a higher standard of living in an economy." Discuss this view.**	**[11]**

Question interpretation

Command word/phrase	*main factor … Discuss this view*	This question requires at least 2 factors to be discussed with one of the factor being low unemployment.
Content	*Low unemployment … higher standard of living*	The 'main factor' presented is a macro goal, hence other factors that are chosen should be macro goals as well, and they should link to both material and non-material SOL.
Context	*an economy*	The context is flexible and students can bring in different economies for their analysis and in particular, for their evaluation.

Students should start by discussing pros and cons of low unemployment to both material and non-material standard of living. Students should then identify at least one other factor (preferably another macro goal), to compare with low unemployment as a contributor to both material and non-material standard of living. To score well for evaluation, students should present a valid and well justified comparison of the different factors discussed in the body paragraphs.

Introduction

- Standard of living (SOL) can be defined as the average well-being of economic agents in the country and comprises both material and non-material aspects.
    - Material SOL is influenced by the variety, quantity and quality of goods and services that can be consumed in the country and
    - non-material SOL refers to more intangible aspects such as stress and health levels in the country.

Thesis: Explain how low unemployment can lead to a rise in both material and non-material SOL in an economy.

- Low rate of unemployment can contribute to a higher material SOL in an economy.
    - When there is low unemployment in an economy, more citizens are employed with an income. This income allows for a higher amount of consumption on goods and services and hence higher material SOL
        - With a higher level of income, households are not only able to consume more goods and services, but they are also able to save more. This would increase their future material SOL, as the savings can translate into future consumption of goods and services.
- When there is low unemployment, there can be a higher non-material SOL in an economy as well.
    - With stable jobs, economic agents can gain job stability and satisfaction which can lead to greater happiness levels and a higher level of non-material SOL.
    - Also, with more people being employed, the government will need to pay out less unemployment benefits and is also able to collect more tax revenues from the working population. This leads to a healthier budget balance for the

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government, which it can spend on important aspects of the economy such as education and healthcare. In the long run, these expenditures will lead to higher life expectancy and literacy rates, increasing important non-material SOL indicators that are captured within the Human Development Index.
    - Finally, when unemployment is low, fewer people turn to crime, since they are able to hold down a job. This will lead to an overall increase in public safety and a higher non-material SOL.

Anti-thesis 1: Explain how low unemployment may not contribute to higher SOL

- Low unemployment may not contribute to a higher SOL as there could be some unintended consequences.
    - When unemployment is low, it could mean that the economy is operating at close to full capacity, i.e. there are few job openings. As such, this could lead to higher stress and longer working hours as people try to hold down their current jobs, leading to lower non-material SOL.
    - Also, if the economy is close to full capacity, there might be demand-pull inflationary pressures, which could lead to inflation if there are repeated increases in aggregate demand without an increase in productive capacity. As prices go up, there could be a fall in purchasing power of consumers, leading a fall in material SOL.
- Also, low unemployment may not contribute to higher SOL, as it may be achieved with a large number of discouraged workers in the workforce, which results in a small labour force to start with. This would lead to a low level of unemployment but with few people working, which means that material SOL may not be higher.

Anti-thesis 2: Explain how another factor may contribute to higher SOL

- Other factors such as inclusive and sustainable growth can lead to higher SOL as well.
    - To achieve sustainable and inclusive growth, sustained growth needs to first be achieved. This would mean that there is a consistent increase in real income without any significant inflationary pressures. When sustained growth is achieved, this would mean that the purchasing power of households will increase consistently over time, allowing for material SOL to increase over time.
    - With the achievement of inclusive growth, the sustained growth is broad-based across economic sectors, and creates productive employment opportunities for the majority of the country's population. As such, the improvement in material SOL is well distributed among different segments of the economy,
    - With the achievement of sustainable growth, there is sustained growth without creating other significant economic problems (such as depleted resources and environmental problems), particularly for future generations. This could mean that there is a cleaner environment for households to enjoy, which results in higher non-material SOL.

Notes:

- *Students can choose to consider another alternative factor such as price stability or another type of economic growth (e.g. actual or potential growth). The scope of discussion would be less than inclusive and sustainable growth, but credit will be given.*

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- *Also, students are credited if they presented two alternative factors as their anti-theses instead of the above format where one anti-thesis focuses on the limitations of low unemployment and one anti-thesis focuses on an alternative factor.*

Evaluative Conclusion

- **[Stand + Magnitude]** Low unemployment is not the main factor contributing to a higher SOL as many people can be employed but the productive capacity is at a low level and hence people are earning a low income.
    - Also, the economy may have an uneven distribution of income and be polluted from industrial growth.
    - To circumvent these problems, inclusive and sustainable growth should be the main factor contributing to a higher SOL.
- **[Situation]** Whether low unemployment is the main factor contributing to a higher SOL depends on the state of the economy.
    - In a developed economy where basic needs are being met for the majority, there can be a greater focus on non-material SOL and factors such as sustainable growth can be more important.
    - However, in developing economies where material SOL is still a major concern, low unemployment can be argued to be the main factor contributing to a higher SOL.

Note: any 2 valid points of comparison between low unemployment and another factor would gain the 3 evaluation marks

<u>Mark Scheme</u>

Level	Knowledge, Application/Understanding, and Analysis	Marks
L3	For a well-developed and balanced answer that • rigourously discusses how low unemployment may and/or may not contribute to higher material and non-material SOL, • rigourously discusses how at least one other factor may contribute to higher material and non-material SOL.	6 – 8
L2	For an underdeveloped answer that • lacks sufficient scope of discussion (e.g. only focuses on low unemployment in the discussion), OR • has sufficient scope but lacks rigour in analysing the effect of different factors on SOL.	3 – 5
L1	For an answer that shows some understanding of how low unemployment may or may not contribute to higher standard of living in an economy.	1 – 2
E	Up to 3 marks for valid evaluative comment(s) on whether low unemployment is the main factor contributing to a higher standard of living in an economy.	2 – 3

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Marker's comments

- Students who did well for this question **scoped it well**, with a consideration of how low unemployment may and may not increase **both material and non-material SOL**, and also considered at least 1 other factor.
    - Conversely, those who didn't fare as well may have only focused on low unemployment or only material or non-material SOL.
- The most common scoping mis-step came in the form of the **selection of alternative factors** that made it hard to compare with low unemployment, e.g. macro policies, HDI. Low unemployment is a macro goal, and therefore, its suitability as the main factor should be assessed vis-à-vis another macro goal. By selecting a policy or an indicator as the alternative factor, it made for difficult comparison with low unemployment as a goal.
- Many students chose 'economic growth' as the alternative goal, which surfaced a couple of problems
    - First, many students only focused on actual growth but termed it as 'economic growth'. It is important to be clear about your terminology. When you are doing an analysis on growth, be clear what you are referring to**. There are five adjectives to help you describe growth – actual, potential, sustained, sustainable or inclusive – use them!**
    - Next, students who did an analysis on actual growth ended up giving explanations that were very similar to how low unemployment can lead to higher SOL, which limited the variability of analysis in their answer. Once again, remember that **the choice of arguments is crucial** and planning is very important in your HOT questions!
- There were a couple of students who noted that low unemployment can lead to a rise in productive capacity for the economy. This is a misconception. A rise in the productive capacity will only occur when the labour force expands. This is different from having a low unemployment. What a low unemployment says is that those who are willing and able to work (i.e. in the labour force) can find a job. Only when the labour force expands, would the productive capacity increase (which ironically, *ceteris paribus*, could result in higher unemployment)!

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VICTORIA JUNIOR COLLEGE
PRELMINARY EXAMINATIONS 2018

H1 ECONOMICS
8823/01 **13 September 2018**
3 hours

Additional Materials: Answer Paper

READ THESE INSTRUCTIONS FIRST

Write your name and class on every answer sheet 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.

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.

This document consists of **9** printed pages including the cover page

[Turn over

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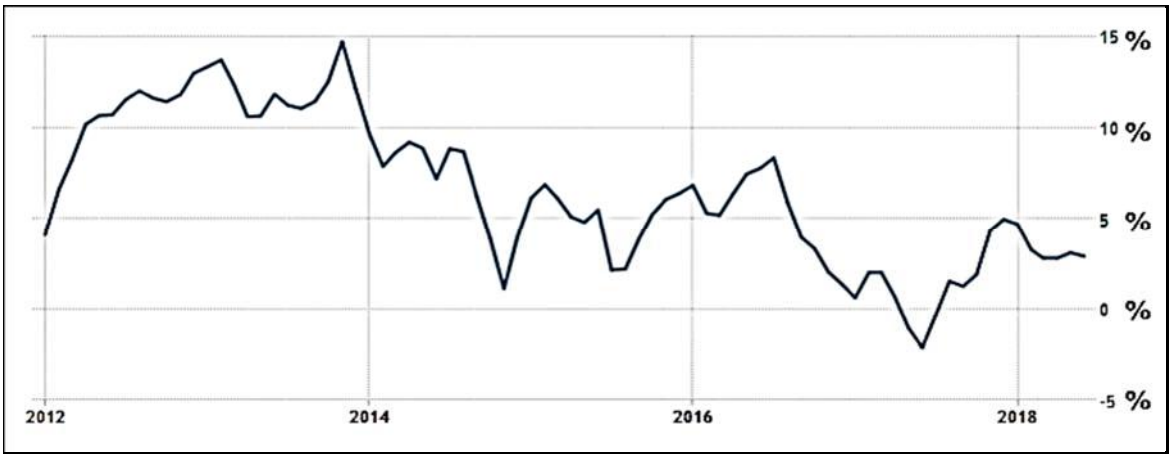
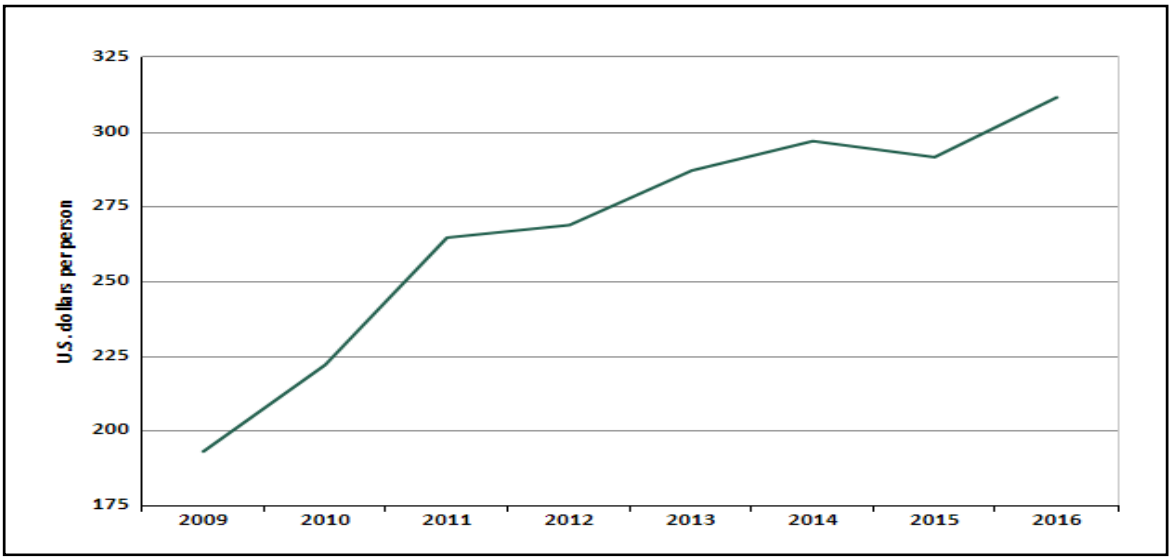
Question 1: India's Troubles

Figure 1: Food price changes in India



Source: Trading Economics, accessed 26 July 2018

Figure 2: India's food expenditure (USD per capita)



Source: Knoema, accessed 7 August 2018

Extract 1: Rising food prices to hit rural India

India's villages will face a sharp spike in food prices in 2016, as a second year of drought drives up the cost of ingredients such as sugar and milk, and poor transport infrastructure stops falling global prices from reaching rural areas.

Prices of vegetables like onions, tomatoes and potatoes have already been rising, with some staples up as much as 20 percent in a month. Palm oil prices have also climbed in the last two months, while milk prices have risen by 10 percent. Food accounts for more than 50 per cent of rural consumer price inflation in India, compared with a third of urban inflation, while categories like fuel, which has seen a considerable price drop, has a much smaller impact in rural areas, where families use firewood or biogas from manure.

Source: Reuters, 10 November 2015

Extract 2: Rising food prices push India's December retail to 17-month high

Rising food prices pushed India's retail inflation to a 17-month high in December, breaching the central bank's medium-term target for the second straight month, which could intensify pressure for it to raise interest rates in the next few months.

India's measure of consumer price inflation, the CPI index, rose 5.21 percent in December from a year earlier, against a backdrop of faster economic growth, the Ministry of Statistics said on Friday. Annual retail food inflation rose 4.96 percent in December from 4.35 percent in the previous month.

The Reserve Bank of India (RBI) held its interest rate steady at 6.0 percent last month and said all possibilities were on the table, depending on how price pressures and growth panned out. The RBI, which has a medium-term inflation target of 4 percent, has raised its inflation estimate to 4.7 percent for the six months through to March 2018. But some analysts feel inflation could overshoot its estimates, forcing the central bank to change its policy stance.

Analysts said any sharp rise in government spending in the budget that fuels inflation could force the central bank to raise rates earlier than expected. The world's seventh largest economy is expected to grow at 6.5 percent in the current fiscal year ending in March but a continued rise in inflation has alarmed policymakers in New Delhi. To make matter worse, crude prices have rallied, sending Brent crude above $70 a barrel on Thursday for the first time since December 2014, which is a worry since India imports most of its energy needs.

Source: Reuters, 12th Jan 2018

Extract 3: Pollution in India

A recent report from the World Health Organization (WHO), drawing on measurements and calculations as of 2016 from air monitoring stations in 4,300 cities, establishes clearly that air pollution is a global problem. A whopping nine in ten people on Earth breathe highly polluted air, and more than 80 percent of urban dwellers have to endure outdoor pollution that exceeds health standards, according to the WHO's World Global Ambient Air Quality Database.

But there are certain places on the planet where the air is now consistently, epically terrible. India, for instance, is home to 11 of the 12 cities with the highest levels of particulate pollution.

Two-thirds of India's population lives outside of cities, and 80 percent of these households rely on biomass like wood and dung for energy needs. The smoke released from these activities then waft over major cities such as Chennai and Mumbai, where it mixes with traffic exhaust, factory emissions, and construction dust. India's hills and mountains also act as basins that trap such toxic air over the country, leaving few areas in the country where Indians can breathe easy.

An emergency air-quality warning system was created in 2016 to warn citizens residing in the capital territory of Delhi of hazardous levels of air pollution. Delhi residents would receive an alert, warning them that air quality index (AQI) readings were breaching danger levels and that they ought to safeguard their health.

Source: adapted from Vox, 9th June 2018

Extract 4: India to clean up its air

According to Veerabhadran Ramanathan, professor of Atmospheric and Climate Sciences at Scripps Institution of Oceanography at University of California, there are three main solutions that can have maximum impact on air pollution in India. One, cleaner sources of energy need to be subsidised, two, pollution rights need to be issued and three, banning open burning of fossil fuels and biomass. It may take a long time but Ramanathan thinks that this would greatly reduce the air pollution in India, if done correctly.

Source: Adapted from World Health Organisation, 7th July 2016

Extract 5: Singapore not on track to achieve WHO targets

Singapore is not on track to achieve its air quality targets by 2020 which are benchmarked against the guidelines set by the World Health Organization (WHO). According to figures from the Ministry of the Environment and Water Resources (MEWR), in the past two years, Singapore fell short in meeting its targets for pollutants such as fine particulate matter (PM2.5), particulate matter (PM10) and ozone. Industries, power stations, and motor vehicles are the main sources of air pollution. However, these are essential functions we cannot forego. Speaking at a pre-Budget focus group discussion, Minister for the Environment and Water Resources, Mr Masagos Zulkifli, said Singapore is committed to finding ways to address air pollution.

To ensure good air quality, Singapore sets emission standards which have been progressively tightened over the years. Before industries are allowed to operate in Singapore, they are screened to ensure that they do not pose un-manageable pollution problems and health and safety hazards. In addition, they have to incorporate pollution control measures to comply with the National Environment Agency's (NEA) air emissions standards and regulations. All new vehicles in Singapore have to meet minimum emission standards while existing vehicles on the road are required to undergo regular inspections to ensure that they do not emit excessive smoke.

The carbon tax is an important step to sustain Singapore's clean, green and liveable environment. The Minister for Finance announced at Budget 2017 plans to introduce a carbon tax from 2019. The tax will be applied on facilities that emit 25,000 tCO_2e or more of greenhouse gas (GHG) emissions annually. To give the industry more time to adjust and implement energy efficiency projects, the tax will start at \$5/tCO_2e in the first instance, from 2019 to 2023. The first payment of the carbon tax will be in 2020, based on emissions in calendar year 2019.

Source: www.channelnewsasia.com, 26 January 2017 & National Climate Change Secretariat, 19 February 2018

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Questions

(a) **(i)** Describe the trend in India's food prices from 2012 to 2018. [2]

(ii) What might Figure 1 and 2 suggest about the price elasticity of demand for food in India? [3]

(b) With the aid of a diagram, explain and comment on how a food subsidy might affect the consumers, producers and the government in India. [8]

(c) In the light of rising inflationary pressure, discuss whether the Indian government should raise interest rates. [10]

(d) **(i)** Explain how the activities mentioned in Extract 3 results in market failure. [6]

(ii) Clearly explain why, if left to market forces, "air quality warning services" will not be provided. [4]

(e) Using evidence from the case study and your own knowledge, discuss whether the Indian government should adopt Singapore's policies to improve air quality. [12]

[45 marks]

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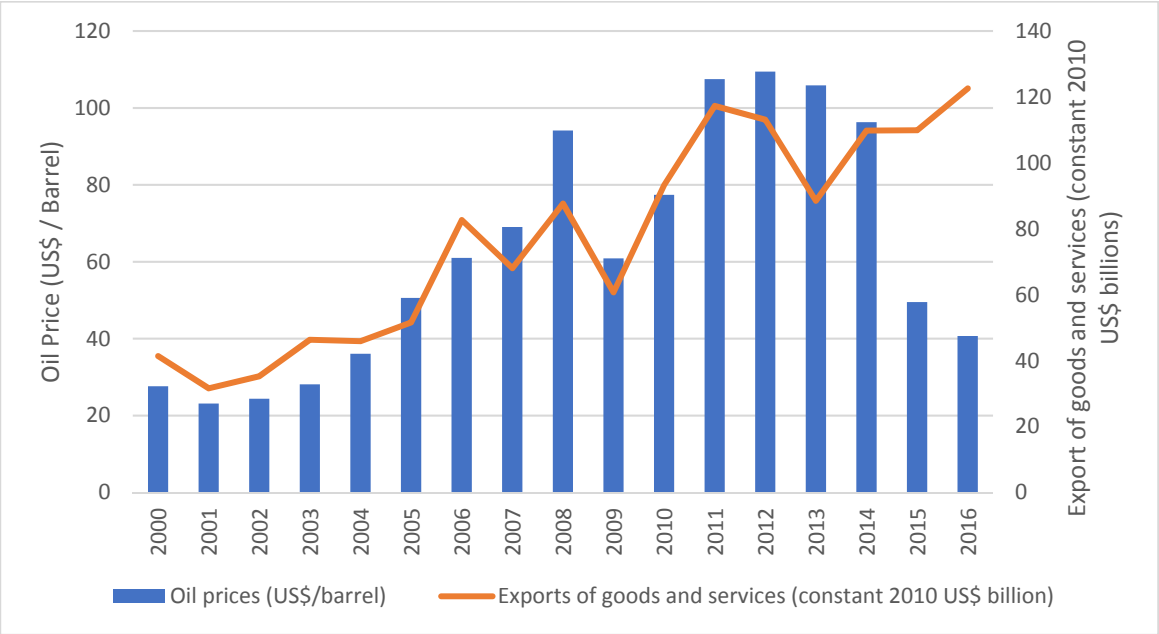
Question 2: Africa, out of the ashes into the fire?

Figure 3 – World oil price and Nigeria's export revenue



Source: World Bank & Statista, accessed 25 July 2018

Table 1 – Selected macroeconomic indicators of Nigeria and South Africa

	2012	2013	2014	2015	2016	2017
	Nigeria					
Real GDP growth (annual %)	4.28	5.39	6.31	2.65	-1.62	0.81
CPI (annual %)	12.22	8.48	8.06	9.02	15.70	15.37
Total unemployment (% of total labour force)	3.76	3.70	4.56	4.31	7.06	7.04
Public Debt* (% of GDP)	10.53	10.60	10.71	11.63	14.32	16.16
	South Africa					
Real GDP growth (annual %)	2.21	2.49	1.85	1.28	0.57	1.32
CPI (annual %)	5.65	5.75	6.07	4.59	6.33	4.40
Total unemployment, (% of total labour force)	24.73	24.57	24.90	25.16	26.55	27.72
Public Debt (% of GDP)	41	44.1	46.98	49.31	51.57	53.04

*Public debt refers to the debt owed by the government (usually in the form of bonds)

Source: World Bank, accessed 25 July 2018

Extract 6: Nigeria and South Africa, recovering but headwinds aplenty

Nigeria's economy is exiting a painful recession. Although growth in Nigeria recovered to 0.8 percent in 2017 following rising oil prices, but policy implementation needs to move quickly and comprehensively to facilitate economic recovery and help the country reap its longer-term potential. Similarly, growth seems to be returning to South Africa, riding on the change in political leadership, reducing some of the political uncertainty which brought back investors, says the International Monetary Fund (IMF) in its latest economic health check of the continent's top two economies.

However, IMF warned that growth in both countries might be hampered by structural bottlenecks and challenging economic situations. As crude oil accounts for more than 90% of its export revenue, Nigeria's economic performance remains highly dependent on the price of this precious commodity. However, there is a growing movement towards developing the agriculture sector within Nigeria to diversify its economy. Inflation, especially of food prices, remains high. Low tax revenues are keeping the fiscal deficit high, leading to more government borrowing that is crowding out private sector activity. Distortions in foreign exchange markets are slowing efforts to attract longer-term investment and diversify the economy. These issues are more deeply entrenched in South Africa where the corruption level is a primary concern for businesses. The IMF says weak educational attainment "contributes to wide income disparities and high unemployment, perpetuates the intergenerational transmission of poverty, and constrains economic growth."

Source: Adapted from International Monetary Fund and BBC, 2018

Extract 7: Growing with a growing burden

On the face of it, 2018 is going to be a good year for Nigeria. Much of her growth will still rely on improving commodity prices and executing economic reforms. But it's all rather delicately balanced. The World Bank thinks a drop in commodity prices, higher-than-expected global interest rate rises and the ongoing debt mismanagement could set the country back.

The World Bank warned that many of Africa's economies—regardless of size or growth rate—need to pay more attention to debt management in 2018. Public debt is approaching critical levels in some countries in the region. Debt was at 56% of GDP on average in 2017 versus 40% in 2013. It exceeded 25% in oil-dependent countries last year.

Christine Lagarde, managing director of the International Monetary Fund, believes there will be tighter monetary policies introduced in advanced economies through rising interest rates, over the coming months, which will have an impact on African economies with both unfavourable foreign exchange rates and existing and future debt becoming more expensive.

Source: Adapted from Quartz, 2018

Extract 8: The road to a better life

A plush new rail service from the capital Ajuba to the northern city of Kaduna was just launched in Nigeria. The new £1 billion commuter service was built with Chinese money as part of its One Belt and One Road (OBOR) initiative, known more colloquially as the new silk road.

In Africa, where China is investing $52 billion in 10 major infrastructure projects, the vision is to create 'silk roads' that stimulate trade by connecting Senegal on the west coast to Sudan on the east coast and strengthening links between Nigeria and South Africa, two of the continent's most powerful economies. OBOR is already redesigning the global economy: China's trade with Africa has doubled in the past five years – and could double again in the next five. Chinese President Xi Jinping has taken a personal interest in Nigeria, Africa's largest economy and energy producer. In April 2016, at a summit in Beijing, he promised Nigerian President Muhammadu Buhari a $6 billion infrastructure loan, an $80 billion investment in oil and gas, and a $15 million grant to stimulate innovation in agriculture.

China's generosity will improve the daily lives of millions of Nigerians if, invested and managed properly, it modernises a railway system that had been neglected for decades. The heart of this programme is to build three major railway lines – starting with that route from Abuja to Kaduna, which opened in July 2016. To help Nigeria upgrade its infrastructure, China is lending funds to Nigeria on advantageous terms and in return, Chinese companies win the bulk of the construction contracts. Rotimi Amaechi, the Minister of Transport, says the country's poor transportation network is making goods and services more expensive. Nigeria spends around $90bn a year importing food – better infrastructure could cut that bill substantially.

Having been promised such improvements so often, many Nigerians are sceptical about the latest plans. Corruption is still rife – the UK's Department for International Development (DFID) estimates that the country lost $32 billion to fraud during the six-year presidency of Jonathan Goodluck.

Source: Adapted from Chartered Institute of Procurement and Supply, 2017

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Questions

(a) **(i)** Describe the relationship between global oil prices and the export value of Nigeria from 2000 to 2016. [2]

(ii) Account for the relationship observed above. [4]

(b) Explain the possible relationship between a country's public debt and economic growth. [4]

(c) **(i)** Compare the trend in GDP growth between Nigeria and South Africa from 2012 to 2017. [2]

(ii) With reference to Extract 7, how likely will the economic growth continue beyond 2017 for Nigeria? [4]

(d) Discuss if the data is sufficient to conclude that the standard of living in Nigeria has improved. [7]

(e) Evaluate how "tighter monetary policies introduced in advanced economies" (Extract 7) will impact Nigeria's and South Africa's economic recovery. [10]

(f) In view of the rising public debt, discuss the appropriateness of various policies the South African government could adopt to achieve sustained and inclusive growth. [12]

[45 marks]

- End of paper -

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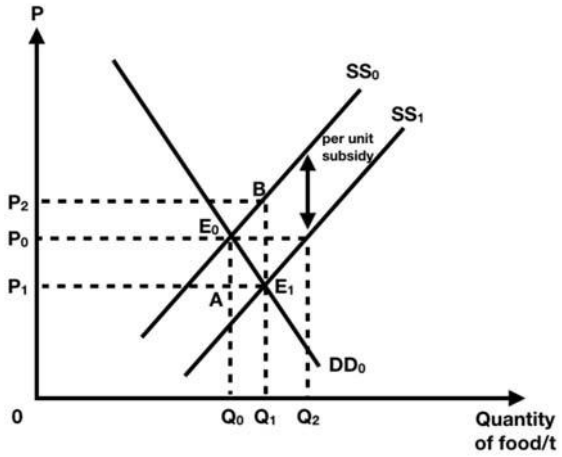
H1 Prelim Case Study Question 1

a	(i)	**Describe the trend in India's food prices from 2012 to 2018**	**[2]**
		Food prices were generally increasing [1], with the increase slowing down from 2014 onwards [1]	
	(ii)	**What might Figure 1 and 2 suggest about the price elasticity of demand for food in India?**	**[3]**
		Price elasticity of demand measures the degree of responsiveness of quantity demanded of a good to a change in its price, ceteris paribus The ***demand for food is likely to be price inelastic*** where the increase in price in Figure 1 led to a less than proportionate fall in quantity consumed. As a result, the increase in expenditure from an increase in price is greater than the loss in expenditure from a decrease in quantity demanded, leading to a rise in expenditure as seen in Figure 2. **Award 1m** for the identification of PED of food **Award up to 2m** for an explanation of the link between Price and TE using the concept of elasticity	
b		**With the aid of a diagram, explain and comment on how a food subsidy might affect the consumers, producers and the government in India.**	**[8]**
		A subsidy is a payment made by the government to producers to encourage the production of certain good and services, but not made in exchange for any goods or services. To analyse the impact on the various economic agents, we will look at expenditure for consumers, revenue for firms and government expenditure.  Before government intervention, the initial equilibrium is at point E_0, where DD_0 intersects SS_0, to give equilibrium price P_0 and quantity Q_0. A subsidy lowers the cost of selling food, therefore producers are willing to offer the more for sale at every price. This is represented by a downward shift of the supply curve, by the amount of the subsidy, from SS_0 to SS_1,	

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		At the initial equilibrium price of P0, quantity demanded is Q_0 and quantity supplied is Q_2, resulting in a surplus of Q_0Q_2. Producers will lower the price in order to get rid of the surplus, which results in a rise in quantity demanded, and a fall in quantity supplied. This will continue until quantity demanded equals quantity supplied to arrive at a new equilibrium point of E1, with a lower equilibrium price P_1 and a higher quantity Q_1. ***Impact on Economics Agents*** **Consumers'** expenditure decreases from $0P_0E_0Q_0$ to $0P_1E_1Q_1$. Due to the demand for food being price inelastic, the increase in expenditure from an increase in quantity ($Q_0AE_1Q_1$) is less than the decrease in expenditure from a decrease in price ($P_1P_0E_0A$), resulting in an ***overall fall in expenditure***. **Producers** see an increase in overall revenue from $0P_0E_0Q_0$ to $0P_2BQ_1$, which is the sum of consumers' expenditure plus the subsidies from the government. The **government** will see an increase in government expenditure by the area $P_1P_2BE_1$. **Evaluation:** The extent of the above changes on the various economic agents will depend on the relative price elasticity of demand and supply for food. The more price inelastic the demand/supply is, the greater the impact of the subsidy on the consumer/producer. **Up to 1m** for a well-labelled diagram **Up to 3m** for an explanation of the impact of subsidy on the market, this includes a demonstration of what subsidy is /its impact on the supply curve and equilibrium price and quantity via the adjustment process. **Up to further 4m** for a discussion of the impact on the various economic agents (including evaluative comments on the extent)	
c		**In the light of rising inflationary pressure, discuss whether the Indian government should raise interest rates.**	**[10]**
		Inflation is a sustained increase in the general price level of an economy, which can be either demand-pull or cost-push inflation. In India's case, there are both demand-pull (Ext 2 Para 2 and 3: economic growth) and cost-push inflation (Ext 2 Para 1: rising food prices pushed India's retail inflation to…).	

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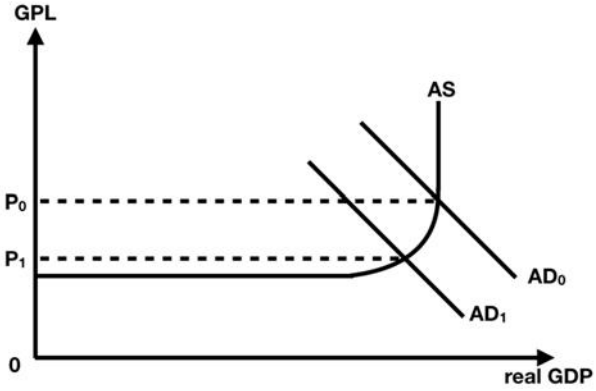
An increase in interest rate addresses inflation in India

When the government raises interest rates, consumers and producers will be affected.

Consumers will consume less as a rise in interest rates means that the cost of borrowing has increased. With a higher cost of borrowing, consumers will borrow less. The returns from saving will also increase, resulting in a higher opportunity cost of consuming. Thus, consumers will reduce their consumption (C). Firms will also borrow less with a higher cost of borrowing as previously profitable investment projects might now be unprofitable, resulting in a fall in investment (I).



A fall in C and I will lead to a fall in AD from AD0 to AD1. The fall in AD will create surpluses at existing general price level and hence, there will be an unplanned rise in inventories. Firms will reduce production and hire less factors of protection, such as labour. As a result, households' income will fall and this decrease in purchasing power will result in a fall in consumption of other domestic goods and services. Hence there will be lower national income as output decreases further. As a result, there will be less inflationary pressure in the Indian economy, lowering the general price level from P_0 to P_1.

Evaluation:

- *Contractionary Monetary Policy is easy to implement as the revision to interest can be announced by the central bank and effected with almost no time lag.*

- *However,* if Indian *consumers and producers are optimistic* about the economy outlook, a rise in interest rate might not discourage them from consuming and investing. This is likely given the growth of India in the last few years.

- The effectiveness of the policy also depends on the *proportion of AD that C and I take up*. If C and I take up only a small proportion of AD, then the fall in GPL would not be substantial.

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Increased interest rate may not address the inflation in India

An increase in interest rate may raise business costs and producers may pass these increased costs to the consumers in the form of higher prices so as to maintain profitability. The more price inelastic the demand for the goods are (especially for raw materials, food, energy) the more likely it is for producers to pass on higher costs to consumers. In this case, not only will inflation not be solved, the consumers will be worse off with higher prices and falling material well-being than without government intervention.

Furthermore, given that increases in food prices due to droughts (Ext 1 Para 1) are also contributing to inflation, a contractionary monetary policy is unlikely to address this source of inflation.

Evaluation

- Inflation in India seems to be a result of both demand-pull as well as cost-push. In light of the different causes of inflation, raising interest rates, which essentially addresses demand-pull inflation, ***would not be sufficient*** to tackle inflation in India.

- Complementary policy to address the cost-push inflation e.g. implement supply side policies to help deal with rising food prices. This could come in the form of subsidising R&D efforts to increase crop yield. With an increase in crop yield, it will increase the amount of crops produced with the same amount of land used, thus alleviating the inflationary pressures brought about by rising food prices. One drawback about supply-side policies would be that it takes time for R&D to see results. The results are also not guaranteed and also takes up government funding, which could have been spent on other areas of development.

Conclusion

To effectively address inflation in the country, the Indian government should implement a mixture of demand-management and supply-side policies to tackle the various sources of inflation. While the problem of food price inflation might be temporary, India's growth projection (Ext 2, Para 3), increased government spending, suggests that inflation may be more demand-pull and that would make demand-management policies the more critical of the 2 policies in controlling inflation.

Level	Descriptor	Marks
L3	A well-developed, balanced response on the use of interest rate as a policy tool to address inflation. Answers should include how a higher interest may lower AD and thus demand pull inflation, policy	5-7m

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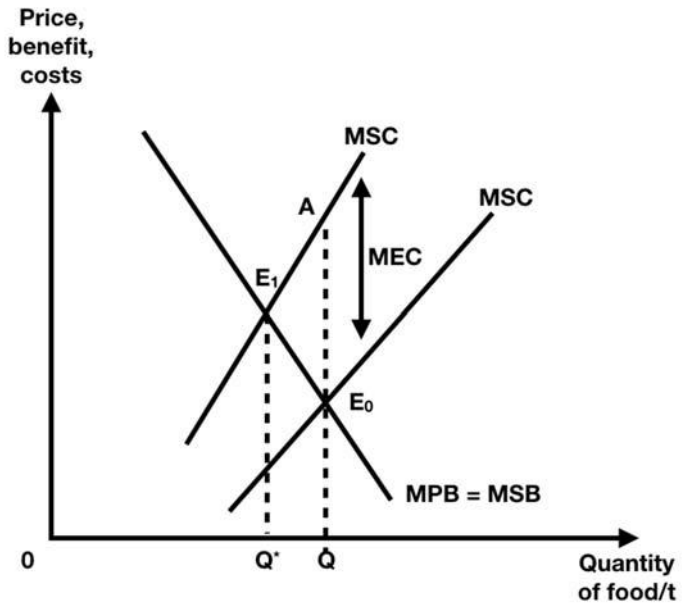
	limitation, as well as a recognition of the presence of cost-push inflation. Use of case materials expected.	
L2	An underdeveloped answer that explains how raising interest rates would tackle inflation	3-4m
L1	A vague, list- like answer on inflation or polices	1-2m

Up to 3 marks can be awarded for a valid evaluative conclusion that examines the appropriateness of raising interest rates to tackle inflation in India with consideration for the root cause, possible trade-off (inequity since the burden of the increased interest could fall on the low income), nature of the economy and the suggestion of possible alternatives to address inflation in India.

d (i) Explain how the activities mentioned in Extract 3 results in market failure. [6]

In Extract 3, the activities mentioned includes burning of wood and dung for energy needs, factory productions, use of vehicles and construction. All these activities result in market failure as they generate air pollutants.

Market failure occurs when the free market fails to allocate resources in an efficient manner.



When carrying out activities such as burning of wood for energy and use of vehicles, consumers only consider their marginal private cost (MPC) such as the cost of wood and petrol and the marginal private benefit (MPB) such as the utility derived from getting energy or the convenience of driving from one place to another. Market equilibrium occurs at MPC = MPC, where output is at Q.

However, these actions generate negative externalities, costs borne by third parties who are not involved in the above-mentioned activities. The

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		above-mentioned activities **generate air pollutants,** resulting in lower air quality ***(Ext 3: highly polluted air).*** When the third parties inhale the polluted air, their health gets negatively affected and have to incur additional medical costs, which are the forms of marginal external cost (MEC) that they have to bear. The presence of MEC would cause marginal social cost (MSC) to diverge from marginal private cost (MPC). Assuming no positive externalities, MPB = marginal social benefit (MSB). Social equilibrium occurs where MSB = MSC, at output Q*. There is an overconsumption of QQ* units. The additional benefit of consuming QQ* units is $Q^*E_1E_0Q$ whereas the additional cost of consuming QQ* is Q^*E_1AQ, resulting in a welfare loss of area AE_1E_0. **Up to 2m** for the identification of the source of market failure with reference to the case materials (pollutants released generate negative externalities) **Up to a further 4m** for a clear analysis of how the market fails with a *specific context* (MSC>MPC, equilibrium output vs socially ideal output, deadweight loss identification)	
d	**(ii)**	**Clearly explain why, if left to market forces, "air quality warning services" will not be provided.**	**[4]**
		Air quality warning services is likely to be a public good, which means that it is non-excludable and non-rivalrous in consumption. Air quality services is non-rivalrous - the usage of air quality warning services by one person will not diminish the availability of the service for another person and so the marginal cost of providing for an additional user is zero. Using the marginalist principle, good should be consumed up to MB=MC, and so effective price is zero price. But at zero price, no private producers would be willing and able to supply the good. Air quality warning services is non-excludable as it is impossible or extremely difficult to exclude someone from using the air quality warning services even if they do not pay for it, once it is produced. Thus, it leads to free rider problem for which there will be no effective demand for the good. With no expression of demand, there will be no production of the good as firms will not be able to price the good to cover the cost. **1m** for identification of public good **3m** for explanation of how public good characteristic results in non-provision by the private market	

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e		**Using evidence from the case study and your own knowledge, discuss whether the Indian government should adopt Singapore's policies to improve air quality.**	**[12]**
		Industries, power stations and motor vehicles are main sources of pollution in Singapore (Ext 5 Para 1) somewhat similar to the sources of pollution in India due to energy needs, traffic exhaust and factory emissions in India (Ext 3 Para 3). India could consider the use of the 2 policies used in Singapore, namely the setting of emissions standards and the imposition of carbon taxes. ***Body 1: Explain the working of the policies*** <u>Measure 1: Emission standards</u> Singapore "sets emission standards which have been progressively tightened over the years" (Ext 5 para 3). Setting of emission standards is a form of ***command and control policy***. The government could influence consumers' or firms' behaviour through imposing regulations, which uses the law to compel certain actions to be taken by consumers or firms. In this case, emissions standards on automobiles and factories that emit polluting gasses directly controls the level of pollutants allowable, thereby limiting the externalities and the welfare loss as a result of these activities. <u>Measure 2: Carbon tax</u> A carbon tax (Ext 5 para 4) is a compulsory levy imposed on the production of the goods and services where the producer has to pay the government a fixed fee per unit of pollution (carbon) generated from the production. The implementation of a carbon tax will increase the marginal cost of production and makes the firms internalise the external costs. Rational firms will choose to lower pollution as long as the marginal private benefit of lowering pollution (avoidance of carbon tax) outweighs the marginal private costs of lowering pollution (e.gg. installing equipment or improved production process). By reducing the pollutants emitted the extent of negative impact on third party is reduced and hence there is reduced welfare loss. ***Body 2: Appropriateness for India*** <u>(i) Effectiveness of outcome</u> By setting emission standards, the government can ***guarantee the desired outcome*** as the total amount of pollution is determined by the government. Furthermore, emissions standards may stimulate the firms to undertake more innovation to reduce emissions to the maximum permissible level.	

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Since carbon tax is based on the amount of pollution generated, the firms have the incentive to actively find cleaner production methods or engage in R&D that allows them to reduce the amount of pollution tax it needs to pay. This lowers pollution ***and addressed the root cause of the problem***. However, the ***government may not have perfect information*** on what MEC is. Thus, the amount of tax implemented might not be the most accurate amount.

Carbon tax ***encourages the firms to lower the amount of carbon generated from their production processes in the least costly method***, resulting in less externalities generated. The firms may be able to do so by developing methods that lowers the externality.

Regulations using the emissions standards can be more effective i.e. with greater certainty of outcome than carbon taxes especially since carbon taxes is dependent on the producers' responsiveness to the carbon tax. The less price elastic the demand for the product is, the more likely that the firms would pass on the increased cost to the consumers, rendering the carbon tax less effective at reducing the level of pollutants emitted. In the case of necessity, it is likely that increased in costs will be borne by the consumers.

<u>(ii) Costs of implementation and monitoring</u>
In order for emissions standard to be successful, the government ***must have the resources and capability to ensure compliance by consumers and firms***. In the case of Singapore, it is relatively easier since it's a small country, resulting in lower monitoring costs. In the case of India, it might be challenging as the ***country is much bigger***, ***making it difficult to monitor*** every area effectively. The Indian government needs to incur high monitoring costs, and they may not have the required resources to effectively enforce the regulations (e.g. police force lacking manpower). This high ***costs of monitoring may outweigh the benefit of intervention***, causing society to be worse off than in the free market outcome.

Between emissions standard and **carbon tax**, the latter ***is probably costlier*** to implement and enforce since it requires the government to measure the pollution levels that arise from an additional unit of production and possibly levy different tax rates based on the types of pollutants.

<u>(iii) Unintended Consequences</u>
Both policies are likely to raise the cost of production for firms. In the case of emissions standards as factories have to spend on cleaner equipment/methods of production to meet the emissions standards. In the case of carbon taxes, the costs of emissions directly raise the cost of supplying the good. This may in turn translate into higher prices of other

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goods and services for consumers. For example, if energy provider has to ensure cleaner energy is released with lower pollutants, there may be additional steps to filter the energy thereby raising energy prices for the producers of other goods.

However, a ***carbon tax can lead to greater inequity***. If the industry being taxed produces necessities, it would lead to a fall in the affordability of goods/services, particularly for the poor. This could be a huge problem in India as there is a ***greater proportion of the population that is living in poverty as compared to Singapore***, as India is still a developing country. Also, it might worsen the cost-push inflation as prices of more goods and services also experience increased price due carbon taxes.

Conclusion

Apart from the difference in the **nature of the country** discussed earlier, which might pose some difficulties for the Indian government to adopt Singapore's policies, a bigger consideration may be the source of the pollution. Ext 3 Para 3 suggest that the main source of pollution came from 80% of the two-thirds of India's population who rely on biomass for energy. The Indian government should target her policies at this primary source of pollution by subsidising cleaner energy production, building infrastructure needed such as piping to so that these households outside city also have access to energy without needing to burn biomass in the open. Although this will only effect in the longer run, in the meantime, the government may have to use carbon tax on factory emissions for revenue needed for the subsidy of clean energy.

Level	Descriptor	Marks
L3	A well-developed and balanced response that examines the strengths and limitations of the 2 measures (adopted by Singapore) policies for India	6-9m
L2	An underdeveloped answer that explains how the 2 measures adopted by Singapore can tackle market failure in India.	3-5m
L1	A vague description of the policies.	1-2m
E	Evaluative comment focusing on the suitability of the policies based on differences between India and Singapore e.g. source of pollution, nature of the economy/country. Suggestion of alternative policy	1-3m

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H1 Prelim Case Study Question 2

(a)	**(i)**	**Describe the relationship between global oil prices and the export value of Nigeria from 2000 – 2016** There is a ***positive/direct*** relationship between global oil prices and export value from 2000 to 2013. [1] and an ***inverse relationship*** from 2013 to 2016 [1]	[2]
	(ii)	**Account for the relationship observed above.** The positive relationship from 2000 to 2013 is due to the high dependency (90% Extract 6) on oil as a source of export revenue for Nigeria. Hence, with a price inelastic demand, the rise in oil prices would have led to a less than proportionate fall in the quantity, giving rise to export revenue for Nigeria. [2] The inverse relationship from 2013 onwards might be due to the diversification of the Nigerian economy towards agriculture (Extract 6), thereby reducing the reliance on oil as a source of export revenue. Even when the price of oil decrease, Nigeria was able to generate higher revenue from other agricultural products exported [2].	[4]
(b)	**Explain the possible relationship between a country's public debt and economic growth rate of a country?** There might be an ***inverse relationship*** between public debt and economic growth. [1] The data in Table 2 from 2015 – 2016 in Nigeria and 2013 – 2016 in South Africa, where public debt levels rose while economic growth slowed down. This inverse relationship could be explained by the ***crowding out effect.*** As the government increase her borrowing, the demand for loanable funds increases thus driving up interest rates in the private market. An increase in interest will increase opportunity cost of consumption and increase cost of borrowing. This will lower the C and I, thereby exerting a contractionary effect on the economy, slowing the economic growth. [3] ***OR*** With increasing public debt, consumer and business confidence might be reduced, reducing consumption due to lower expected future income and lowering firms' expected rate of return and thus investment expenditure; this in turn leading to a slowdown (fall) in economic growth. [3]		[4]

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(c)	**(i)**	**Compare the trend in GDP growth between Nigeria and South Africa from 2012 to 2017** *Both countries* experienced a *falling trend in real GDP growth* [1] while GDP growth in South Africa remains positive throughout the period [1]	[2]
	(ii)	**With reference to Extract 7, how likely will the economic growth continue beyond 2017 for Nigeria?** Candidate can make a prediction based on a combination of the following factors raised in Extract 7. Whether Nigeria continues to grow beyond 2017 depends on a mix of internal and external factors/ AD-AS factors: (a) Improving commodity prices If oil prices continue to rise, export revenue for Nigeria is expected to rise, increasing her AD and in turn sustaining the economic growth. This is likely to be significant given Nigeria's reliance (Extract 7, Para 1) on oil exports. (b) Success of her economic reform Economic reforms to restructure the Nigerian economy raises the efficiency and workings of institutions e.g. banking institutions, making it easier to do businesses. This can increase the expected rate of return for investment projects in Nigeria and in turn the level of investment expenditure, encouraging growth (c) Management of public debt With rising levels of public debt, investors' confidence might be adversely affected, thereby limiting growth in Nigeria. Depending on how the Nigerian government finances the public debt, the outcome may be favourable or not. If the Nigerian government chooses to reduce debt level by reducing government spending, there will be a contractionary effect on the economy, stunting economic recovery. (d) Global interest rates rising A rise in foreign interest rate (Extract 7, Para 1) might affect the inflow of foreign direct investment into Nigeria as well as her exports, thereby slowing her growth. However, economic growth might not continue if the rise of interest rate **Award up to 2m** for each argument raised in support of a position taken – growth or contraction.	[4]
(d)	**Discuss if the data is sufficient to conclude that standard of living in Nigeria has improved.** Standard of living refers to refers to well-being of the residents in a country. There are two aspects - material and non-material well-being. Material well-being can be measured by the quantity of goods and services consumed over a period of time, like a year. Non-material well-being is the intangible		[7]

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	aspect and it relates to the quality of life, such as the environment, leisure and economic freedom. ***Data shows improvement in material SOL*** • Overall, Nigeria's *economy is larger* from 2012 to 2017 (Table 2) in real terms despite the recession in 2016. This signifies that households are able to consume more goods and services across this time period across the same time period, *improving the material SOL of Nigerians*. • In addition, with the *upgraded rail infrastructure* (Extract 7, Para 3), consumers are better able to gain access to essential services and transportation. This suggests the *improvement of the material SOL of Nigerians*. ***Data might not be sufficient to conclude improved SOL in Nigeria*** • *Data evident of a fall in the material SOL of Nigerians.* The economic growth experienced might not be evenly distributed with the *rising unemployment rate (Table 2*). Hence, the improvement in material SOL might only be concentrated within certain groups of the population especially those working the oil industry. • Data does not reflect non-material SOL of Nigerians We cannot conclude that there is an overall improvement in the SOL of Nigerian without sufficient data on the non-material SOL. Essential data on the air pollution levels and stress level/leisure hours are not available for us to make an assessment/conclusion on the overall SOL of Nigerians. **Conclusion:** Hence, the data provided is only sufficient to determine a certain increase in material SOL but not a conclusive stance on the overall SOL of the Nigerian, given the lack of data on non-material SOL. **Up to 4 marks** for an interpretation and assessment of the data on the SOL of Nigerians having improved **Up to a further 3 marks** for possible insufficiency of data to suggest improvement in SOL (availability of data on non-material well-being, data pointing to possible lower material SOL)	
(e)	**Evaluate how "tighter monetary policies introduced in advanced economies" (Ext 6) will impact Nigeria's and South Africa's economic recovery.** *Approach* Analysis of how a tighter monetary policy (rising interest rates) would affect the Nigerian and South African economies should be done through the outflow of hot money/FDI, decrease in business confidence with a possible decrease in ability for debt repayment and through exchange rates Thereafter, comparison between the impact of the rising interest rate is needed based on the nature of the economies and state of the economies	[10]

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Introduction
A tighter monetary policy in developed economies such as the US is carried out by raising their domestic interest rates. While this might be done in US in a bid to rein in the possible inflationary pressure, the increase in global interest will have a contractionary effect on Nigeria and South African economies.

Body 1: Tighter MP in developed economies impede economic recovery in Nigeria and South Africa

(1) Tighter monetary policies in developed countries ***slows AD growth*** and thus slows down the economic recovery in Nigeria and South Africa

The higher interest rates in the developed countries contracts their economy and may lower national income. Since imports is a function of income, a fall in income will reduce the level of imports, which could be export demand for Nigeria and South Africa.

In addition, the FDI outflow may slow down as firms consolidate their operations and reduce overseas investment. This lower demand for Nigeria and South Africa's exports contributes and Investment expenditure leading to the decline in AD.

Overall, we can ***expect AD to fall/slowdown and in turn the slowdown of the economy recovery for both countries.***

(2) Tighter monetary policies in developed countries results in higher domestic interest rates in Nigeria and South Africa, slowing domestic expenditure and growth

A tightening MP in developed countries in the form of higher interests will lead to an ***outflow of hot money*** from Nigeria and South Africa as investors are more willing to ***purchase assets in developed countries*** with lower risks. Hence, this reduces the supply of loanable funds in both Nigeria and South Africa, increasing the interest rates in both countries as well.

This ***increases the cost of borrowing*** for both consumers and investors which raises the marginal cost for investments and projects will now be less profitable for firms, ***reducing the investment levels*** for both Nigeria and South Africa. On the other hand, consumers will find it more expensive to borrow for durable goods such as cars and household electronics, leading to the ***fall in consumption expenditure*** as well.

(3) A rise in interest rate increases debt burden of the governments of Nigeria and S. Africa, limiting their ability to implement growth policies

Instead of using tax revenues for government expenditure on essential goods and services, an increasing amount of tax revenue is now needed to pay off the higher interest. This limits the government's ability to undertake expansionary fiscal policy to facilitate economic recovery.

The fiscal debt burden for S. Africa (53.04%, Table 2) will increase more than that of Nigeria (16.16%, Table 2) given the higher public debt level. As such, the impact on S. Africa's consumption, investment and government

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expenditure might be more significant, resulting in a larger slowdown in its economic recovery.

Body 2: Tighter MP in developed economies may not impact economic recovery in Nigeria and South Africa significantly

(1) Tighter monetary policies in developed countries will lead to a deprecation of domestic currencies which boosts economic growth.

With the ***outflow of hot money*** from Nigeria and South Africa, there will be a corresponding increase in supply of the Nigerian Naira and South African Rand in the foreign exchange market. Assuming that demand of the currencies remains constant, there will be a ***depreciation*** of the currencies with respect to foreign currencies (i.e. USD).

Hence, exports will be relatively cheaper in USD, leading to an increase in demand for Nigerian and S. African exports. Similarly, imports will be relatively more expensive in Naira and Rand, leading to the fall in quantity demanded of imports. Assuming that demand for import is price elastic ($PED_M > 1$), net export value for both countries is expected to rise, leading to the rise in AD. This will strengthen the economic recovery for the economies.

This will have a ***more significant impact on Nigerian*** as it is more dependent on the trade of oil (commonly priced in USD) relative to S. Africa for economic growth.

(2) Potential inflow of FDI from China can sustain the economic recovery for both countries.

With the Chinese OBOR investment for infrastructure in Nigeria (Extract 7), we can expect an increase in investment expenditure for both countries. Hence, AD for Nigeria and S. Africa is expected to increase, possibly offsetting the slowdown of economic growth from the rise in interest rates.

However, given the high levels of corruption in both countries (Extract 5, Para 4 & Extract 7, Para 4), much of the FDI injected into the economy might not trickle down to the larger population. This might stifle the extent of increase of AD and NY from China's FDI.

Conclusion

Higher interest rates might hamper economic recovery more in S. Africa relative to Nigeria. Given Nigeria's extensive reliance on oil for export revenue, the depreciation of the Naira can outweigh the contractionary impact on consumption and investment expenditure. In addition, the high public debt level of S. Africa coupled with its structural bottlenecks might prove to a stumbling block for its economic growth and recovery.

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Mark Scheme

Level	Descriptor	Marks
L3	A balanced and well-explained response that considers how tighter monetary policies can affect the economic recovery of both economies, supported by case evidence.	5-7m
L2	A brief 2-sided discussion of how tighter monetary policies can affect the economic recovery of both economies but lacks rigour and/or support by case evidence. Or A balanced discussion of how tighter monetary policy can affect one of the two countries (including unemployment and growth via inventory adjustment process)	3 - 4m
L1	A vague, list-like response on the possible effects of rising interest	1-2m

Up to 3 marks can be awarded for a valid evaluative conclusion; candidate may consider the ***relative impact*** on both countries or the **criteria/condition** of both countries which would make the impact severe (nature and state of the economies). To get the full credit, evaluative statement should be well-substantiated and with case evidence.

(f) **In view of the rising public debt, discuss the appropriateness of various policies the South African government could adopt to achieve sustained and inclusive growth.** [12]

Approach:
Given that the question specifically stated 'In view of rising public debt', answers should consider the impact of rising public (fiscal) debt on the appropriateness of the policies, the S. African government can adopt. Candidates will need to discuss at least two policies explicitly making links to how these policies work to achieve sustained and inclusive growth. It will be essential that candidates take note of the structural issues S. Africa is facing, hence, the analysis of supply-side policies should be a primary measure.

In discussing the appropriateness of these policies, candidates should also take note of the nature of the S. African economy and trade-offs which may incur.

Introduction
From Table 2, we notice that S. African economic growth remains positive but remains weak due to structural bottlenecks as well as a rising public debt level that might hinder economic growth. This means that aggregate demand (AD) and aggregate supply (AS) are rising but at a slower rate. The S. African government can aim to achieve sustained economic growth which is defined as non-inflationary growth where a country is able to achieve an increase in national output, yet able to keep the inflation rate low. It also can aim to achieve inclusive economic growth which is growth that is broad-based

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across sectors and creates employment opportunities for the majority. Inclusive growth takes into consideration income distribution.

Body – Supply Side Policy
The S. African government may adopt supply-side policies to achieve sustained and inclusive economic growth.

She could improve the quality of the education that is delivered across levels. With higher levels of literacy, the South Africans would be able to work on complex tasks or operate high tech capital equipment thereby increase productivity. With higher output per man hour, there would be reduced unit labour costs, shifting the horizontal AS down. Assuming no change in AD, the lower general price levels will induce higher consumption as well as export expenditure, reflected by a movement along the AD curve. This increases the real output, giving rise to actual growth.

Although spending on improving education service is essentially a SS-side policy, in the short run, it will increase government expenditure. Government spending to engage teaching staff for the school, construction of new school facilities contributes to the aggregate demand and increase in real GDP.

At the same time, the expansion of productive capacity in the country with the improved quality of the labour force also means that it raises the AS. At every price level, the output the economy can produce has now increased, potential growth. *Expansion of productive capacity is crucial for the economy as it allows for non-inflationary growth as AD rises.*

In addition to the sustained growth investment in the education and providing a relevant education for the population, there will be a higher possibility for the labour force to be gainfully employed. This increases their income level and a larger proportion of the population will be able to enjoy the fruits of S. Africa's economic growth, thereby achieving inclusive growth.

Evaluation of the use of SS-Side polices

- The funding for establishing the education system will place a *significant burden* on the fiscal position of the government, possibly increasing its short run public debt levels further.

- Nonetheless, this will be an important policy to implement as a weak education system has prevented a significant percentage of the S. African population from being gainfully employed (Extract 5, Para 4 & Table 2). Hence, it is essential that a formal, rigorous and recognised education system be establish in S. Africa, funded by the government.

- Supply-side policy will have a significant lag time before the fruits of the policy can be seen. As such, we have to consider other policies as a stop gap measure in the short run to maintain sustained economic growth and improve inclusivity of income generation.

Additional supply side policies that students can consider using:
The S. African government can undertake anti-corruption measures to reduce the level of corruption in the country. By reducing the level of corruption, there might be an *improvement in the business confidence*, especially so for foreign investors. This will increase the expected rate of

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returns for investors. As the MB of investment increases beyond the MC, investors will then increase their level of investment in S. Africa, boosting economic growth.

Body: Demand-management policy
Another policy that the S. African government can adopt is the expansionary monetary policy i.e. the reduction of interest rates

The reduction of interest rates will reduce the cost of borrowing for both consumers and firms. Hence, consumers will find it cheaper to borrow to purchase consumer durable goods such as household appliances, increasing domestic consumption expenditure. Similarly, firms will find more capital investment projects to be more profitable given the lower cost of borrowing. This encourages them to increase their investment expenditure. Together, we expect AD and hence NY to increase.

As there will be an unplanned fall in inventory stocks, firms will demand more factors of production (e.g. labour) in order to fulfil this shortfall. This increase in demand for labour can alleviate the high unemployment levels in S. Africa, increasing the income levels for the average households, creating the opportunity for wealth and income to be shared across the population.

Evaluation of the use of demand management policy:
While theoretically sound, rising global interest rates might hinder the extent to which the S. African central bank can raise interest rate. Hence, the contractionary impact from the rise in interest rate might hold greater sway relative to this expansionary monetary policy.

In addition, the rising public debt level will be a major consideration for firms and consumers. The potential for a government default limits the interest rate sensitivity for both firms and consumers where they are less willing to invest and consume, reducing the effectiveness of the monetary policy.

Alternative policy:
Consider expansionary fiscal policies but this will have a severe limitation of funding this increase in government expenditure given the rising public debt levels.

Conclusion
Supply-side policies should be the primary policy that the S. African government should consider adopting to achieve sustained and inclusion growth. Major structural issues (high levels of corruption and low levels of education) is a stumbling block for sustained and inclusive economic growth in S. Africa. In addition, the rising public debt levels should be a cause of concern and should be address the soonest. While short run expansionary policies can be considered to achieve sustained growth, long run structural changes needs to be done in order to ensure the growth remains inclusive and sustained.

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Mark Scheme

Level	Descriptor	Marks
L3	A well-developed discussion of at least <u>2 types of policies</u> the South African government could adopt to achieve sustained and inclusive economic growth, and considers the state of the economy. Answer has to be well-supported by case evidence to obtain the max 9m.	6-9
L2	An underdeveloped explanation of the various policies the S. African government could adopt to achieve sustained and inclusive economic growth *Or* *A robust explanation of how the policies can attain sustained growth.*	3-5
L1	An answer that merely states/lists the likely polices the S. African government would consider to adopt with little to no linkage to sustained and/or inclusive growth. Answer may contain conceptual errors.	1-2

Up to a further 3 marks can be awarded for a valid evaluative comment/conclusion. This should focus on appropriateness of the policies suggested with reference to the state and nature of the S. African economy and the key economic issues that it is facing.

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YISHUN JUNIOR COLLEGE
JC2 PRELIMINARY EXAMINATIONS 2018

H1 ECONOMICS **8823/01**

PAPER 1 **20 AUGUST 2018**
0800 – 1100 hrs

TIME 3 hours

Additional materials: Answer paper
Cover page

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INSTRUCTIONS TO CANDIDATES

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

Answer **all** questions.

Start a new question on a fresh piece of paper.

At the end of the examinations, fasten all your work securely together.
Tie a cover page to the **two** questions separately:
1. Case Study Question 1
2. Case Study Question 2

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

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

This paper consists of **8** printed pages, including this cover page, and **2** blank pages.

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Answer **all** questions.

Question 1: The milk industry

Table 1: Production of dairy milk (in million tonnes)

	2012	2013	2014	2015	2016
India	133.7	138.1	141.7	148.2	160.4
US	90.9	91.4	93.5	94.5	96.3
China	44.2	40.3	42.5	42.5	40.9
New Zealand	19.7	19.2	20.6	21.9	21.6

Source: UN's Food and Agricultural Organisation, accessed on 31 May 2018

Extract 1: The dairy milk industry cowed

Since 2008, New Zealand has enjoyed an export-led dairy boom that has earned it the nickname of "the Saudi Arabia of dairy milk" and driven a rapid expansion of its farm industry. The South Pacific nation is the world's biggest exporter of dairy milk, which account for a quarter of everything it sells overseas. But a halving of dairy milk prices since early 2014 is turning New Zealand's farming boom to bust.

The pain is being felt across an industry that stretches from the Pacific to the European Union (EU) and North America and employs millions. Almost one-tenth of all dairy milk produced is exported across borders in a trade worth $140 billion a year.

The crisis was triggered partly by weaker than expected demand, particularly from China, the world's biggest buyer of dairy milk, where dairy milk imports fell by a fifth between 2014 and 2015, according to the United Nation's Food and Agricultural Organisation.

The prolonged decline in prices is a global phenomenon which is prompting a restructuring of farming practices, milk processors and suppliers. It is also raising the pressure on governments to intervene and support farming communities.

In response, in addition to original aid committed to dairy farmers, the EU has made an additional €1 billion available in aid to farmers, by stockpiling dairy milk and related products to try and force prices up. However, such subsidies are not welcome everywhere. "We view these EU subsidies as short-sighted," says Nathan Guy, New Zealand's Agricultural Minister. "These subsidies lock dairy farmers into unprofitable businesses."

To date, New Zealand's economy has weathered the storm due mainly to construction linked to the rebuilding of Christchurch after the 2010-11 earthquakes and a housing boom. But on Thursday the central bank cut interest rates by 0.25 per cent to a new record low of 2 per cent, in a bid to weaken a strong New Zealand dollar that is hurting its dairy milk exports.

However, dairy milk producers remain optimistic that the situation will improve, as countries like China will unlikely become self-sufficient for dairy milk in the near future.

Source: Adapted from FT.com, 11 August 2016

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Extract 2: Producers of dairy milk and their responses to dairy milk price changes

Farmers are like all other entrepreneurs. They seek to grow their business and export their products. And not too long ago, it seemed like a great time to do both. Dairy milk quotas, which had capped production in Europe for decades, were being dismantled, and the export market seemed to be growing.

But economic crisis struck around the world, with incomes falling along with demand. There are 23.6 million cows in European barns now, with each producing around 10,000 litres of milk per year.

Why don't the farmers just produce less? "Farmers need liquidity," explained Jutta Weiss, a spokeswoman for BDM, an association of German dairy farmers. They have to buy feed, pay rent, service credit. Fresh money only comes in when milk is sent out. So, if a farmer stops milking, he or she will immediately go bankrupt. Plus, all the excess milk will go to waste.

Farmers continue to sell their milk, trying to scrape together enough money to get by, which of course adds to the glut and presses prices down even further. Dairy farmers are trapped in "a vicious circle," as BDM calls it. And not only those in Europe.

Source: Adapted from Deutsche Welle, 27 May 2016

Extract 3: The impact of other markets on the dairy milk industry

Current dairy milk production is being stimulated by low feed prices, which were driven by record yield seasons in 2013 and 2014, similar levels in 2015 and new projected highs this year in 2016. The advent of large-scale fracking has resulted in a significant reduction in the price of oil. This will first have an impact on the biofuel market, which is a substitute for oil. Subsequently, this will affect the corn market, which is used to produce biofuel as well as feed for dairy farms.

Eighty percent of US dairy milk farm costs are feed. The reduction in feed costs from US$29.26 in August 2012 to US$18.04 per 100 kg of dairy milk in June 2015 has greatly increased farmers' profits.

Source: Adapted from The Conversation (Australian news source), 12 May 2016

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Extract 4: Almond milk sales continue to surge, as dairy milk contracts

With plant-based diets increasingly popular in the US, milk alternatives – milk products that do not come from animals – are seeing strong sales growth and increased innovation, while sales of dairy milk are contracting. Milk alternatives such as almond milk, are especially popular, with sales having grown by 250% in the past five years. This, in spite of the fact that milk alternatives are typically more expensive than dairy milk.

Consumers' increasing interest in almond milk and disinterest in dairy milk, is likely due to general health and wellness concerns. Unlike dairy milk, almond milk does not pose a threat to consumers who are lactose intolerant, or who worry about hormones or antibiotics that could be found in dairy milk due to injections given to cows to stimulate milk production. In addition, almond milk is more delicious in taste and texture as compared to other milk alternatives and is appealing to consumers looking to switch away from dairy milk.

Sources: Adapted from Food Navigator, 14 Apr 2016 & The Guardian, 21 Oct 2015

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Questions

(a)	**(i)**	Compare the trends in the production of dairy milk for New Zealand, US, India and China over the period of 2012 to 2016.	[2]
	(ii)	Suggest a reason why New Zealand is the world's biggest exporter of dairy milk (Extract 1), even though the US, India and China each produce more dairy milk.	[1]
(b)	**(i)**	Explain the likely value of price elasticity of demand for dairy milk.	[2]
	(ii)	Explain the likely value of price elasticity of supply of dairy milk.	[2]
	(iii)	With reference to Extracts 1 and 2 and using a supply and demand diagram, explain how **one** demand factor and **one** supply factor have led to the halving of global dairy milk prices since early 2014.	[6]
(c)		Explain the likely impact of the halving of global milk prices on **each** of the economic agents – consumers, producers, government – in New Zealand.	[9]
(d)		With reference to Extract 3, explain how changes in oil prices can impact the dairy milk market, and comment on **one** factor that would determine the extent of the impact.	[7]
(e)		Explain the factors affecting consumers' decision-making to switch from dairy milk to almond milk.	[4]
(f)		Using evidence from the case study and your own knowledge, discuss the view that subsidies for dairy milk producers are "short-sighted" and should be discontinued.	[12]

[Total: 45]

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Question 2: From Obama to Trump

Extract 5: Obama's parting gift

Economic growth
With just a few weeks left before President Barack Obama leaves office, the overall economy continues to expand — slowly. As of the third quarter of this year, the U.S. economy is more than 16 percent bigger than when Obama took office in 2009, adjusted for inflation.

Lost workers
Many American workers have left the labour force for a variety of reasons. Some are boomers who have retired; others have become so discouraged looking for a job that they've given up. This erosion of participation saw the steepest losses during the Obama years.

The new President, Donald Trump, and his advisers are hoping that by bringing these "lost workers" back into the labour force, the economy will benefit from increased consumer spending, reduced crime rates and would not suffer a loss in human capital from prolonged unemployment.

Income inequality
The recent rise in wages, though, hasn't lifted incomes for all households. The gap between rich and poor Americans has been rising steadily for half a century, for reasons that economists and politicians still haven't sorted out.

Despite the Obama administration's focus on closing the income gap, it has continued to expand under his watch.

Source: Adapted from CNBC, 2 December 2016

Extract 6: Trump's economic policies

Taxes and public finances
Trump has pledged "a massive tax reduction" for working and middle-income Americans and has vowed to eliminate income taxes for individuals who earn less than $25,000 annually, or $50,000 for a married couple. He has also said he would "ensure the rich pay their fair share".

Trump has also supported lower corporate taxes, proposing to cut the business tax rate from 35% to 15%. He has also proposed a corporate tax repatriation plan – to encourage US companies which hoard cash overseas to avoid paying the 35% tax to bring that cash back to the US. A tax holiday – so the tax due would be only 10% for a period – could encourage corporations to bring back cash to invest or distribute to shareholders

Trump's proposed tax cuts mean less coming in to government coffers, at least in the near-term. For now, economists expect that Trump's plans for tax cuts across the board will mean the US taking on more debt as its deficit – the gap between spending and income – swells. But, there is an argument that the potential boost to businesses and to household spending power would lift the economy enough to improve government finances in the future.

Kevin Logan, the Chief US Economist at HSBC bank, says: "Reducing the budget deficits, while cutting tax rates at the same time, will be difficult without sizable cutbacks in federal spending. If the Trump administration manages to push through tax cuts, federal budget deficits, which are already trending higher, will probably increase substantially, in our view."

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Interest rates
Federal Reserves (Fed) policymakers had hinted at another rate rise in December, part of the slow process of bringing monetary policy back to more normal levels after drastic measures to shore up the US economy during the global financial crisis. But analysts said the Fed needs to act soon to head off mounting pressure for prices to rise.

Trade
Tapping into economic discontent, Trump has made his anger with China over trade well known, arguing that since China joined the World Trade Organisation, Americans have witnessed the closure of more than 50,000 factories and the loss of tens of millions of jobs. He wants the US government to label China a "currency manipulator", accusing it of devaluing its currency.

Source: Adapted from *The Guardian,* 9 November 2016

Extract 7: The North American Climate, Energy, and Environment Partnership

The above was announced by Canadian, US and Mexican leaders on June 29, 2016, at the North American Leaders Summit in Ottawa, Canada.

The deliverables to be achieved and activities to be pursued by the three countries are:

- Achieving a goal for North America of 50% clean power generation by 2025, by implementing government initiatives, such as advancing clean energy development and alternative energy sources
- Reducing the demand for oil through energy efficiency and the use of clean vehicles.
- Developing and implementing federal regulations for greenhouse gas to achieve the target of reducing methane emissions from the oil and gas sector, the world's largest industrial methane source.

Source: Adapted from The White House, 29 June 2016

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Extract 8: Pros and cons of spending $50 Billion on infrastructure in the US

On Labour Day, President Obama rolled out a plan to stimulate growth and save jobs that included $50 billion for infrastructure. But there's also the practical question: what effect would spending $50 billion on infrastructure have?

- **'Scarcely Worth the Bother,'** says John Quiggin, Australian Economist. He explains, if $50 billion was spent in Australia with "population 20 million, GDP of 1 trillion, the stimulus would be about 5 per cent of GDP." This time it's being spent in the U.S. with "population 300 million, GDP of 15 trillion, the stimulus would only be about 0.3 per cent of GDP." It's a drop in a much larger bucket.
- **Finally, the President Stops Relying on the Fed.** Marshall Auerback at The Daily Beast hasn't liked the extent to which the president has been leaning on monetary policy to solve current economic problems. He also points out that "the last few decades have seen very little investment in infrastructure in the U.S."

Obama's plan would rejuvenate 150,000 miles of roads, construct 4,000 miles of railways, enough to go coast-to-coast; and upgrade 150 miles of airport runways through the installation of a new air navigation system designed to reduce travel times and delays.

These are the kind of projects that create long-term prosperity.

- **'An Important Step,'** agrees The New York Times Bob Herbert, despite it being "a first step." Though it won't solve all the infrastructure problems overnight, it will put some people to work in jobs that pay decent wages."
- **Who Is Going to Pay for This?** Investment professional and economics blogger Mike Shedlock doubts the Obama administration's assertions that the plan is fiscally sound and will be "fully paid for."

Source: Adapted from The Atlantic, 7 September 2010

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Questions

(a) With reference to Extract 5, identify and explain two pieces of information that would be useful in assessing living standards in US. [4]

(b) With reference to Extract 5, explain one macroeconomic consequence to arise from 'lost workers' and comment on the extent of benefits of bringing these workers 'back into the labour force'. [7]

(c) Explain how China's currency manipulation could have led to the 'closure of more than 50,000 factories and the loss of tens of millions of jobs'. [4]

(d) Analyse the possible impact of 'a massive tax reduction' on public finances

(i) in the short-term. [2]

(ii) in the long-term. [3]

(e) Explain why the Fed's decision to increase interest rates would 'head off mounting pressure for prices to rise'. [4]

(f) With reference to Extract 7, discuss the policy options you would present to the governments as responses to the threat on the environment. [9]

(g) Governments often use fiscal policy to achieve their macroeconomic aims. [12]

Discuss the appropriateness of increasing spending on infrastructure by the US government in achieving the aims of economic growth and low unemployment.

[Total: 45]

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Questions

(a) (i) Compare the trends in the production of dairy milk for New Zealand, US, India and China over the period of 2012 to 2016. [2]

Commented [EK1]: Add in "Using Table 1…" if we want to be clearer which data students should refer to. This is consistently done in the specimen paper. We could observe how the 8823 2018 questions are phrased and adjust our internal exam question phrasing accordingly.

In this particular case, it is fairly self-explanatory, i.e. (a)(i) is the first question, and Table 1 is the first data in the case study.

Case ref:
- Table 1. Entire table should be used, i.e. all four countries, entire time period.

Content tested:
- Data-reading question.

Skills tested:
- Comparison of data – overall trend, extent of change. Absolute change can also be accepted.

Suggested answer: [1m each]
- Production increased for all countries except China. [overall trend]
- The percentage change in production was the largest for India. [extent of change] (working – (160.4-133.7)/133.7 ≈ 19.97%))
  OR
  The percentage change in production was the smallest for US. [extent of change] (working – (96.3-90.9)/90.9 ≈ 5.94%))
- The absolute change in production was the largest for India. (working – 160.4-133.7 = 26.7)
  OR
  The absolute change in production was the smallest for New Zealand. (working – 21.6-19.7 = 1.9)

Production increased for all countries except China; the percentage change in production was largest for India.
(16 words)

Note to markers:
- Each mark can only be awarded for a valid comparison involving <u>all 4</u> countries, e.g. if one valid comparison is made involving all 4 countries and another comparison only involves 2/3 of the 4 countries, then only 1 mark should be awarded.

Similar A level / specimen paper questions:
- Specimen paper CSQ1(d)(i) compares growth (rate) in air travel.

(a) (ii) Suggest a reason why New Zealand is the world's biggest exporter of dairy milk (Extract 1), even though the US, India and China each produce more dairy milk. [1]

Case ref:
- Table 1. Students should be able to identify here that the level of production India, US and China are significantly higher than that of New Zealand's.
- There are signs that, in spite of China's higher production levels of dairy milk compared to New Zealand, that China is "the world's biggest buyer of dairy milk" (Ext 1, Para 3) and "will unlikely become self-sufficient for dairy milk in the near future" (Ext 1, Para 7). This could hint at the idea that a net exporter needs to have demand < supply and not merely high levels of supply (production).

Content tested:
- Net exporter (where there is excess supply) vs. net importer (where there is excess demand)

Skills tested:
- Demand / supply applications.

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Suggested answer: [1m for any plausible suggestion]

- The production of dairy milk in New Zealand is greater than the demand for dairy milk in New Zealand by the greatest amount among the countries in Table 1. (Explanation not required, but for reference: A country exports any excess of demand for a good subtracted from the production/supply of a good. So if New Zealand is the world's biggest exporter of dairy milk, then the excess of production minus demand is the greatest among all countries in the world.)
- New Zealand may be the only country in Table 1 that is self-sufficient in milk. (Explanation not required, but for reference: Self-sufficiency means the country produces more of a good than it consumes, hence allowing it to export excess amounts of the good.)

The production of dairy milk in New Zealand is greater than the demand for dairy milk in New Zealand by the greatest amount among the countries in Table 1.
(29 words)

Note to markers:

- 1 mark can be awarded for:
  - Idea of self-sufficiency.
  - Recognising that net exporters have domestic production/supply > domestic demand
- A stricter mark scheme will require the answer to suggest the extent, i.e. NZ is <u>most</u> self-sufficient or the supply>demand by the <u>greatest</u> amount.

For review:

- Do we want to include the concepts of self-sufficiency / net-importer, net-exporter in future versions of our notes? Either in demand/supply notes (as application of dd/ss), or in trade.

Similar A level / specimen paper questions:

- Specimen paper CSQ1(d)(ii) requires one possible reasons to be stated and explained.

(b) (i) Explain the likely value of price elasticity of demand for dairy milk. [2]

Case ref:

- No clear indication from data, though Extract 4 suggests that there are increasingly close substitutes to dairy milk in the form of non-dairy milk.

Content tested:

- Determinants of PED.

Skills tested:

- Making inferences from Extract 4, incorporate that into own understanding of likely PED for dairy milk.

Suggested answer:

<u>If PED < 1 (preferred answer)</u>

- PED for dairy milk is likely to be between 0 and 1 as dairy milk is a necessity food product… [1m for stating the right value matched to the right PED determinant]
- …that is a part of the diet for majority of the population.
  OR
  …that is a critical ingredient for many other food products. [1m for explaining why dairy milk is likely to be a necessity good]

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If PED > 1

- PED for dairy milk could be above 1 because there are close substitutes to dairy milk…[1m for stating the right value matched to the right PED determinant]
- …such as milk alternatives including almond milk that dairy milk consumers are increasingly willing to switch to. [1m for explaining why dairy milk has close substitutes]

PED for dairy milk is likely to be between 0 and 1 as dairy milk is a necessity food product that is a part of the diet for majority of the population.
(32 words)

Note to markers:

- 1 mark awarded if the PED value does not match the explanation, but the explanation is correct.
- 0 marks awarded for the likely PED value if student gives a specific value instead of a range, i.e. PED like to be = 0.7.

Similar A level / specimen paper questions:

-

(b) (ii) Explain the likely value of price elasticity of supply of dairy milk. [2]

Case ref:

- Extract 2 suggests that it is difficult to cut down on dairy milk production even if prices fall.
- The reverse of how it is likely to be difficult to increase dairy milk production when prices rise needs to be inferred from the context, e.g. the factor inputs are largely fixed, there is a required gestation period.

Content tested:

- Determinants of PES.

Skills tested:

- Data comprehension from Extract 2, inferring from context, incorporate that into own understanding of likely PES for dairy milk.

Suggested answer:

- PES for dairy milk is likely to be between 0 and 1, as dairy milk production requires the use of fixed factor inputs (e.g. cows) that cannot be varied significantly in the short run…[1m for stating the right value matched to the right PES determinant]
- …because each additional cow a farmer purchases will have long-term impact on the farm's production levels and costs, and farmers don't cull their cows just because demand falls in a given year. [1m for explaining why the fixed factor inputs cannot be varied significantly in the short run]

PES for dairy milk is likely to be between 0 and 1, as dairy milk production requires the use of fixed factor inputs (e.g. cows) that cannot be varied significantly in the short run because each additional cow a farmer purchases will have long-term impact on the farm's production levels and costs, and farmers don't cull their cows just because demand falls in a given year.
(66 words)

Note to markers:

- 1 mark awarded if the PES value does not match the explanation, but the explanation is correct.
- 0 marks awarded for the likely PES value if student gives a specific value instead of a range, i.e. PES like to be = 0.4.

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- Other plausible PES factors can be accepted as an answer as well.

Similar A level / specimen paper questions:

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(b) (iii) With reference to Extracts 1 and 2 and using a supply and demand diagram, explain how **one** demand factor and **one** supply factor led to the halving of global dairy milk prices since early 2014. [6]

Case ref:

- "…a halving of milk prices since early 2014…" (Extract 1, P1)

Supply factor(s)

- New Zealand has enjoyed an export-led dairy boom that has earned it the nickname of "the Saudi Arabia of dairy milk" and driven a rapid expansion of its farm industry (Extract 1, P1)
- Removal of milk production quotas in EU (Extract 2, P1)

Demand factor(s)

- "…weaker than expected demand, particularly from China, the world's biggest buyer of dairy milk, where dairy milk imports fell by a fifth between 2014 and 2015…" (Extract 1, P3)

Content tested:

- Non-price determinants of demand / supply.
- Market equilibrium adjustments with diagram.

Skills tested:

- Data interpretation to identify one demand factor and one supply factor.
- Focus answer to address the change in prices.

Suggested answer:

- <u>Supply factor [2m]</u>. Supply of dairy milk increased significantly in Europe due to removal of milk quotas (E2P1). The removal of milk quotas would have allowed more milk producers to produce milk or existing milk producers to produce more milk. This would have led to an increase in supply of milk, ceteris paribus.
- <u>Demand factor [1m]</u>. At the same time, demand for milk decreased due to falling demand from China (E2P1).
  OR
  At the same time, demand for milk was increasing but at a decreasing rate due to weaker than expected demand from China (E2P1).
- <u>Market adjustment analysis for Ss↑ > Dd↑</u>. Since supply increased to a large extent while demand increased to a much smaller extent, there is a large surplus at the original price level, leading to significant downward pressure on dairy milk prices, resulting in the "halving of global dairy milk prices since early 2014". [2m; 1m reserved for answer relating to the extent of change in prices]
- Complete (title, axes, demand/supply curve, equilibrium price and quantity) and accurate diagram. [1m]

Supply of dairy milk increased significantly in Europe due to removal of milk quotas (E2P1). The removal of milk quotas would have allowed more milk producers to produce milk or existing milk producers to produce more milk. This would have led to an increase in supply of milk, ceteris paribus. At the same time, demand for milk was increasing but at a decreasing rate due to weaker than expected demand from China (E2P1). Since supply increased to a large extent while demand increased to a much smaller extent, there is a large surplus at the original price level, leading to significant downward pressure on dairy milk prices, resulting in the "halving of global dairy milk prices since early 2014".
(119 words + diagram)

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Note to markers:

- Only 1 supply and 1 demand factor required to score full 3 marks.
- PED / PES factors also accepted as demand / supply factors respectively.

Similar A level / specimen paper questions:

- Common demand / supply factor question impacting market

(c) Explain the likely impact of the halving of global milk prices on the economic agents – consumers, producers, government – in New Zealand. [9]

Case ref:

- "…a halving of milk prices since early 2014…" (Extract 1, P1)
-

Content tested:

- Consequences of falling prices in a market, on economic agents.
  - For consumers, should link to standard of living.
  - For producers, should link to profits.
  - For government, should link to budget balance or social welfare.

Skills tested:

- Structuring the answer either by how falling dairy milk prices affect each of the three economic agents (easier), or by how falling dairy milk prices can have three different impacts.
- Inference that each explanation is worth 3m, adding up to 9m.

Suggested answer:

- Impact on consumers [3m]. With cheaper dairy milk, the extent of increase in quantity demanded for dairy milk will depend on the PED of milk. If PED < 1 (depends on answer to (b)(i)) then the increase in quantity demanded for dairy milk will be less than proportionate to the fall in price, leading to a decrease in consumer expenditure on milk. Assuming income and the prices of other goods and services remain unchanged, consumer's purchasing power for other goods and services will increase while enjoying a larger quantity of dairy milk consumption at the same time. Therefore material standard of living will improve.
- Impact on producers [3m]. Since producers are likely to be facing a fall in revenue (equivalent to the fall in consumer expenditure), their profits may fall if costs remain constant. If they expect the decline in prices to be prolonged (E1P4), then producers need to find ways to reduce their costs of production through restructuring farming practices, milk processors and suppliers (E1P4). This means producers need to spend resources on research and development on production processes, renegotiate contracts with suppliers. Producers that are unable to reduce costs significantly may end up leaving the industry.
- Impact on government [3m]. To provide aid to dairy producers, the New Zealand government has reduced interest rates, which will also lead to a slight depreciation of the New Zealand dollar due to the outflow of hot money should the New Zealand interest rate now become lower than that of other countries. Prices of exported goods will fall, which could encourage an increase in export demand. While the New Zealand government could then expect more tax revenue earned from firms that are more focused on exports, they could also incur higher costs for imported factors of production and higher prices for imported goods and services. Also, if the New Zealand were to consider subsidies similar to that provided by the EU government (E1P5), the

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budget balance may also worsen. Therefore, the impact on the budget balance may be uncertain since both government revenues and expenditure may increase.

- Other possible answers:
    - Consumers: less switching to milk alternatives
    - Producers: have to find ways to increase demand for dairy milk, e.g. through advertising, research and development to make better quality / variety of products; producers of goods that use dairy milk as a factor in put will enjoy a fall in cost of production and a subsequent increase in profits
    - Government: even if government is not going to help dairy farmers directly, they may need to spend on efforts to retrain farmers who close their farms for transition into other industries

With cheaper dairy milk, the extent of increase in quantity demanded for dairy milk will depend on the PED of milk. If PED < 1 then the increase in quantity demanded for dairy milk will be less than proportionate to the fall in price, leading to a decrease in consumer expenditure on milk. Assuming income and the prices of other goods and services remain unchanged, consumer's purchasing power for other goods and services will increase while enjoying a larger quantity of dairy milk consumption at the same time. Therefore material standard of living will improve.

Since producers are likely to be facing a fall in revenue (equivalent to the fall in consumer expenditure), their profits may fall if costs remain constant. If they expect the decline in prices to be prolonged (E1P4), then producers need to find ways to reduce their costs of production through restructuring farming practices, milk processors and suppliers (E1P4). This means producers need to spend resources on research and development on production processes, renegotiate contracts with suppliers. Producers that are unable to reduce costs significantly may end up leaving the industry.

To provide aid to dairy producers, the New Zealand government has reduced interest rates, which will also lead to a slight depreciation of the New Zealand dollar due to the outflow of hot money should the New Zealand interest rate now become lower than that of other countries. Prices of exported goods will fall, which could encourage an increase in export demand. While the New Zealand government could then expect more tax revenue earned from firms that are more focused on exports, they could also incur higher costs for imported factors of production and higher prices for imported goods and services. Also, if the New Zealand were to consider subsidies similar to that provided by the EU government (E1P5), the budget balance may also worsen. Therefore, the impact on the budget balance may be uncertain since both government revenues and expenditure may increase.
(328 words)

Note to markers:

- Typically,
    - the 1st mark can be awarded if the stated consequence is reasonable
    - the 2nd mark can be awarded as long as there is an attempt to provide economic analysis to explain the impact
    - the 3rd mark should be reserved for explanations that suit the context, i.e. if a very good but theoretical answer is given without reference to the context, then the answer is capped at 2m
- 3m can be awarded for a full explanation on how a fall in dairy milk prices can impact consumers, e.g. fall in consumer expenditure on dairy milk. If the same explanation is used for another agent, e.g. since

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consume expenditure falls, therefore producers' revenue also falls, only 1 additional mark can be awarded.

- Should students take an approach of explaining 3 different impacts/ arguments instead of splitting the answer into how falling milk prices can impact each of the three agents, then the marking can be done based on how well each of the three different impact are explained (3m each).
    - If only one economic agent is mentioned – max 4m. If only 2 economics agents are mentioned – max 7m. Both caps assume that the development of the answer is complete with few/no errors.

Similar A level / specimen paper questions:

-

(d) With reference to Extract 3, explain how changes in oil prices can impact the dairy milk market, and comment on **one** factor that would determine the extent of the impact. [7]

Case ref:

Information useful to establish relationship between oil market and dairy milk market

- "…a halving of milk prices since early 2014…" (Extract 1, P1) → clue that the market price of dairy milk should fall at the end of the analysis
- "Current dairy milk production is being stimulated by low feed prices, which were driven by record yield seasons in 2013 and 2014, similar levels in 2015 and new projected highs this year in 2016." (Extract 3, P1)
- "The advent of large-scale fracking has resulted in a significant reduction in the price of oil." (Extract 3, P1)
- "This will first have an impact on the biofuel market, which is a substitute for oil." (Extract 3, P1)
- "Subsequently, this will affect the corn market, which is used to produce biofuel as well as feed for dairy farms." (Extract 3, P1)

Possible factors that would determine the extent of the impact

- "Eighty percent of US dairy milk farm costs are feed" (Extract 3, P2)

Content tested:

- Substitutes, i.e. when price falls in market A (oil), demand for B (biofuel) will fall.
- Competitive supply, i.e. when equilibrium quantity / quantity supplied falls in market A (biofuel), supply of B (feed) will increase.
- Market adjustment analyses.

Skills tested:

- Analyse the relationship between multiple markets based on information given.
- Consideration for factors that would determine impact, i.e. break down analysis into individual parts.

Suggested answer:

<u>Explaining impact of changes in oil prices on dairy market.</u> (up to 4m)

- Since oil and biofuel are substitutes, therefore a fall in oil prices will lead to an increase in quantity demanded for oil and result in a fall in demand for substitutes such as biofuel. This creates a surplus in the biofuel market, leading to a fall in equilibrium price as well as equilibrium quantity in the biofuel market.
- These changes in the biofuel market can then impact the dairy milk market as both use corn as a common factor input, i.e. biofuel and dairy

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milk are competitive in supply. With a fall in biofuel prices, quantity supplied of biofuel will fall, leading to more corn available for use in producing feed. This increases the supply of feed, causing a surplus and downward pressure on the price of feed, which then reduces the cost of producing dairy milk. As a result, dairy milk supply increases, creating a surplus and leading to a fall in equilibrium price while equilibrium quantity increases.

<u>Comment on factor that would determine the extent of impact. (up to 3m)</u>

- One possible factor that would determine the extent of this impact, is the importance of feed as a factor input for producing dairy milk. Extract 3 states that feed accounts for 80% of production costs of dairy milk. This means when the price of feed falls due to the fall in oil prices, this would lead to a significant increase in supply of dairy milk. As a result, equilibrium price will fall and equilibrium quantity will increase significantly in the dairy milk market.

- Other possible factors:
    - **PED of oil** → if PED of oil is <1, then quantity demanded for oil will increase less than proportionately, and there is less switching away from biofuel, which then reduces the eventual impact on the dairy milk market.
    - **Closeness of substitutability between oil and biofuel** → if oil and biofuel are weak substitutes, then the switching away from biofuel will be minimal, reducing the eventual impact on the dairy milk market.
    - **PES of biofuel** → if PES of biofuel is <1, then quantity supplied will fall less than proportionately to the fall in price of biofuel, reducing the eventual impact on the dairy milk market.
    - **Importance of corn as a factor input for biofuel / feed** → if corn is not a key factor input for producing biofuel and/or feed, this would reduce the eventual impact on the dairy milk market.
    - **PED of feed** → if PED of feed is >1, then when supply of feed increases leading to a fall in price of feed, the increase in quantity demanded for feed will be more than proportionate. This limits the fall in price of feed, reducing the eventual impact on the dairy milk market.
    - **PED of dairy milk** → the PED of dairy milk will determine the impact of an increase in supply of dairy milk, i.e.
        - if PED dairy milk > 1, then equilibrium price will fall less while equilibrium quantity will increase more for diary milk market;
        - if PED dairy milk < 1, then equilibrium price will fall more while equilibrium quantity will increase less for dairy milk market.
    - **Ceteris paribus assumption may not hold**, i.e. other variables may be changing at the same time oil prices are falling.

Since oil and biofuel are substitutes, therefore a fall in oil prices will lead to an increase in quantity demanded for oil and result in a fall in demand for substitutes such as biofuel. This creates a surplus in the biofuel market, leading to a fall in equilibrium price as well as equilibrium quantity in the biofuel market.

These changes in the biofuel market can then impact the dairy milk market as both use corn as a common factor input, i.e. biofuel and dairy milk are competitive in supply. With a fall in biofuel prices, quantity supplied of biofuel will fall, leading to more corn available for use in producing feed. This increases the supply of feed, causing a surplus and downward pressure on the price of feed, which then reduces the cost of producing dairy milk. As a result, dairy

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milk supply increases, creating a surplus and leading to a fall in equilibrium price while equilibrium quantity increases.

One possible factor that would determine the extent of this impact, is the importance of feed as a factor input for producing dairy milk. Extract 3 states that feed accounts for 80% of production costs of dairy milk. This means when the price of feed falls due to the fall in oil prices, this would lead to a significant increase in supply of dairy milk. As a result, equilibrium price will fall and equilibrium quantity will increase significantly in the dairy milk market.
(242 words)

Note to markers:
Up to 4 marks for correct relationship between oil market and dairy milk market. Answer must contain points stated as "**requirement**" to score the full 4 marks.

- Oil and biofuel are substitutes (up to 2 marks)
  - When price of oil falls → Quantity demanded for oil increases [1m]
  - Demand for biofuel falls ➔ Market price / quantity equilibrium falls for biofuel [1m - **requirement**]
- Biofuel and dairy milk use the same factor input (corn) (up to 3 marks)
  - When price of biofuel falls (from above) → Quantity supplied of biofuel falls [1m]
  - More corn is available for producing feed → Supply of feed increases → Price of feed falls [1m]
  - Cost of producing dairy milk falls → Supply of dairy milk increases ➔ Market price falls / quantity increases for dairy milk [1m - **requirement**]

Up to 3 further marks, to comment on any one factor that would determine the extent of impact. The 3 marks can be awarded for:

- 1m for stating a correct factor
- 2m for a good explanation on how the factor could affect the extent of impact; 1m reserved for the link to the dairy milk market (could be implied, and not stated explicitly)
- Ignore if more than one factor is raised; credit marks according to the best explained factor since question only requires comment on one factor

Similar A level / specimen paper questions:

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(e) Explain the factors affecting consumers' decision-making to switch from dairy milk to almond milk. [4]

Case ref:

- "…in spite of the fact that milk alternatives are typically more expensive than dairy milk." (Extract 4, P1)
- "Consumers' increasing interest in almond milk and disinterest in dairy milk, is likely due to general health and wellness concerns. Unlike dairy milk, almond milk does not pose a threat to consumers who are lactose intolerant, or who worry about hormones or antibiotics that could be found in dairy milk due to injections given to cows to stimulate milk production." (Extract 4, P2)
- "In addition, almond milk is more delicious in taste and texture as compared to other milk alternatives and is appealing to consumers looking to transition away from dairy milk." (Extract 4, P2)

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- "However, there are also recent reports citing that almond milk production could damage the environment due to the large usage of water in an already dry California (world's largest producer of almond), and harm honeybees." (Extract 4, P3)

Content tested:

- Decision-making framework elements, i.e. benefits & costs as the main factors, and can include constraints, information, unintended consequences.

Skills tested:

- Recognise that the question requires an explanation of more than one factor ("Explain the factor**s**…").
- Inference that each explanation is worth 2m, adding up to 4m.

Suggested answer: [2m for each factor explained]

Commented [EK2]: Instead of restricting mark scheme to just benefits and costs, it is reasonable to just award 2m for each factor explained. It is also ok to have 2 benefits / 2 costs since the question did not require a decision to be made, i.e. the scope does not need to be complete for decision-making.

Possible benefits.

- Consumers that wish to keep milk as part of their diet may find that almond milk is more beneficial for health compared to dairy milk. Lactose intolerant consumers will prefer almond milk to dairy milk. Consumers may also prefer almond milk if they don't want to consume milk that may contain hormones or antibiotics.
- Consumers that consume milk alternatives may prefer almond milk in particular due to its better taste and texture.

Constraints

- Consumers will have to consider that almond milk costs more than dairy milk, so switching to almond milk could mean an increase in expenditure on milk. If disposable income remains unchanged, it will become a constraint for consumers who have to cut down on milk consumption or reduce their consumption on other goods and services and/or reduce their savings. [this can also be explained as a **cost** factor]

Information

- Consumers may require more information on the impact on health from consuming dairy milk compared to almond milk. While dairy milk may contain hormones or antibiotics, consumers may want to know whether there is any negative impact on health. In addition, consumers may wish to compare the nutritional value of consuming dairy milk (e.g. calcium) compared to almond milk.

Unintended consequences

- Almond milk production is reported to be harming the environment in California, due to large water usage and possibly harming honeybees. Switching to almond milk will increase demand for almond milk, which could subsequently lead to increase in production of almond milk and harm the environment further. Consumers of milk living in California may factor this into their decision-making; however consumers not associated to California are likely to be indifferent to this unintended consequence in the short term.

Consumers that wish to keep milk as part of their diet may find that almond milk is more beneficial for health compared to dairy milk. Lactose intolerant consumers will prefer almond milk to dairy milk. Consumers may also prefer almond milk if they don't want to consume milk that may contain hormones or antibiotics.

Consumers will have to consider that almond milk costs more than dairy milk, so switching to almond milk could mean an increase in expenditure on milk. If disposable income remains unchanged, it will become a constraint for

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consumers who have to cut down on milk consumption or reduce their consumption on other goods and services and/or reduce their savings.
(113 words)

Note to markers:

- 2m can be awarded for each factor explained.
- The benefit arguments may be overlapping (since both could point towards tastes and preferences, so it will count as one factor, i.e. max 2m)
- The answer does not need to contain both benefit / cost factors because the question does not require a final decision to be reached.

Similar A level / specimen paper questions:

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(f) Using evidence from the case study and your own knowledge, discuss the view that subsidies for dairy milk producers are "short-sighted" and should be discontinued. [12]

Case ref:

Arguments to support subsidies to remain

- "The pain is being felt across an industry that stretches from the Pacific to the EU and North America and employs millions." (Extract 1, P2)

Arguments to support discontinuation of subsidies

- "We view these EU subsidies as short-sighted," says Nathan Guy, New Zealand's agricultural minister. "These subsidies lock dairy farmers into unprofitable businesses." (Extract 1, P5)
- "An absurd situation ensues. Farmers continue to sell their milk, trying to scrape together enough money to get by, which of course adds to the glut and presses prices down even further. Dairy farmers are trapped in "a vicious circle," as BDM calls it. And not only those in Europe." (Extract 2, P4)
- "Eighty percent of US dairy milk farm costs are feed. The reduction in feed costs from US$29.26 in August 2012 to US$18.04 per 100 kg of dairy milk in June 2015 has greatly increased farmers' profits." (Extract 3, P2)
- "Consumers' increasing interest in almond milk and disinterest in dairy milk, is likely due to general health and wellness concerns." (Extract 4, P2)

Content tested:

- Reasons for government to implement subsidies.
- Reasons for government <u>not</u> to implement subsidies.

Skills tested:

- Synthesise arguments to make a judgement on whether subsidies should be discontinued, using dairy milk context as far as possible.

Suggested answer:

<u>A discussion on the rationale / basis for government to subsidise dairy milk producers (up to 9 marks)</u>

- Why subsidies should be discontinued (based on context quoted phrase about subsidies being short-sighted)
    - Subsidies should be discontinued because it is not justified and will distort the market. A common reason for using subsidies is when there is under-consumption of a good due to the existence of positive externalities; it may also sometimes include a situation where there is undervaluation of private benefits of consumption due to imperfect information. In the

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case of dairy milk, it is unlikely that there are positive externalities arising from consumption; there is also no known undervaluation of private benefits of consuming dairy milk. Therefore, subsidies for dairy milk producers are likely to distort the market by "lock(ing) farmers into unprofitable businesses." (Extract 1) This means, instead of respond to market forces such as stagnating or even falling demand for dairy milk, the government subsidies artificially prop up profits of dairy milk producers and cause them to continue or even increase dairy milk production. Assuming the dairy milk market was originally allocative efficient, the implementation of subsidies will lead to an over-allocation of resources to the dairy milk market, an over-production of dairy milk and allocative inefficiency.

- Why subsidies can help producers in the short-term
    - However, subsidies can be used to help producers, even if in the short term, by reducing the cost of production, to maintain or even raise the profits of producers. This could ensure that the producers continue to earn an acceptable income for producing dairy milk, at least in the short run, while they try to reduce costs in their own ways to make their dairy milk business more sustainable. This also prevents producers from having to shut down their businesses, and possibly becoming unemployed if they do not have the necessary skills to work in another industry.

<u>Evaluation on whether subsidies should be discontinued. (up to 3m)</u>
Evaluation needs to be based on the arguments raised in the body of the answer. The following is a sample evaluation (two different stands) based on the arguments raised above.

- Agree with the view that subsidies should be discontinued:
    - <u>Stand:</u> The distortion to markets could be significant and outweigh the benefits of subsidies…
    - <u>Reason:</u> …due to the nature of the dairy milk industry.
    - <u>Explanation of reason:</u> If producers are artificially encouraged to increase production due to government subsidies, they may end up purchasing / rearing more cows than they should have. When these producers subsequently reduce production or go out of business because the subsidies are not sustainable in the long run, they are likely to have to cull cows since this factor input cannot be used for any other industry. The wastage will be more significant than the short-term respite that the producers receive in boosting their profits temporarily.
- Disagree with the view, i.e. subsidies should remain:
    - <u>Stand:</u> The benefits to producers are more significant than the distortions to the market because…
    - <u>Reason:</u> …the size of the dairy milk industry is significant and many producers will benefit from the subsidies which could have positive knock-on effects on the economy.
    - <u>Explanation of reason:</u> Extract 1 states that the dairy milk industry employs millions globally, so the number of dairy milk producers that benefit from subsidies is large. If the subsidies allows them to stay in business / remain employed it would prevent a potential crisis of a massive increase in unemployment which would require government spending as well, in the form of unemployment benefits and/or funds to help farmers retrain in order to switch to other industries. This also helps to maintain the consumption level of households that comprise dairy milk producers, and other industries that use

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dairy milk as a factor input will also be able to continue to have access to cheap dairy milk, which could subsequently benefit consumers of all dairy milk-related products. Nonetheless, the subsidies is a short-term measure that cannot be in place indefinitely, so the government needs to make clear and reduce the amount of subsidies gradually over a time period.

Other possible arguments

- Other possible reason(s) for why subsidies should be discontinued:
    - There is no need for subsidies because producers' profits may not necessarily be falling permanently – either because demand for dairy milk may recover soon, or the costs of producing dairy milk is falling due to the falling cost of feed.
    - Milk alternatives may be better for health as compared to dairy milk, so discontinuing subsidies for dairy milk will stop the artificial fall in dairy milk prices. This could encourage more milk consumers to switch to healthier milk alternatives.
    - There are problems with the use of subsidies, even if justified – e.g. burden on government finances, inability to accurately estimate the right amount of subsidies, difficult to remove subsidies in the near future and end up having to protect farmers indefinitely.

- Other possible reason(s) for why subsidies need to remain:
    - These subsidies can indirectly lead to fall in dairy milk prices which can benefit consumers of dairy milk. This assumes that consumers will be able to reduce their expenditure on dairy milk and thereby increasing their purchasing power for other goods and services, ceteris paribus.
    - These subsidies can make dairy milk exports more price competitive. Should foreigners increase their demand for these exports, aggregate demand could increase, leading to an unplanned reduction in stocks. Firms will increase their production, hire more factors of production and pay out more factor income, and eventually increase real national income by multiplies, leading to actual economic growth.

Subsidies should be discontinued because it is not justified and will distort the market. A common reason for using subsidies is when there is under-consumption of a good due to the existence of positive externalities; it may also sometimes include a situation where there is undervaluation of private benefits of consumption due to imperfect information. In the case of dairy milk, it is unlikely that there are positive externalities arising from consumption; there is also no known undervaluation of private benefits of consuming dairy milk. Therefore, subsidies for dairy milk producers are likely to distort the market by "lock(ing) farmers into unprofitable businesses." (Extract 1) This means, instead of respond to market forces such as stagnating or even falling demand for dairy milk, the government subsidies artificially prop up profits of dairy milk producers and cause them to continue or even increase dairy milk production. Assuming the dairy milk market was originally allocative efficient, the implementation of subsidies will lead to an over-allocation of resources to the dairy milk market, an over-production of dairy milk and allocative inefficiency.

However, subsidies can be used to help producers, even if in the short term, by reducing the cost of production, to maintain or even raise the profits of producers. This could ensure that the producers continue to earn an acceptable income for producing dairy milk, at least in the short run, while they try to reduce costs in their own ways to make their dairy milk business more sustainable. This also prevents producers from having to shut down their businesses, and

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possibly becoming unemployed if they do not have the necessary skills to work in another industry.

On balance, the distortion to markets could be significant and outweigh the benefits of subsidies due to the nature of the dairy milk industry. If producers are artificially encouraged to increase production due to government subsidies, they may end up purchasing / rearing more cows than they should have. When these producers subsequently reduce production or go out of business because the subsidies are not sustainable in the long run, they are likely to have to cull cows since this factor input cannot be used for any other industry. The wastage will be more significant than the short-term respite that the producers receive in boosting their profits temporarily.
(383 words)

Note to markers:
L3: 6-9
An answer that explains:
- At least one reason to subsidise dairy milk producers
- At least one reason to discontinue the subsidies

L2: 3-5
An answer that explains:
- EITHER At least one reason to subsidise dairy milk producers OR At least one reason to discontinue the subsidies
  OR
- BOTH reasons to subsidise dairy milk producers AND to discontinue the subsidies, HOWEVER both explanations are incomplete / lack economic analysis

Answers that take a primarily pros vs. cons of subsidies approach without really addressing the reasons for implementing vs. reasons for discontinuing subsidies will score maximum of L2: 5.

L1: 1-2
An answer that:
- **only states** reasons to subsidise dairy milk producers AND / OR to discontinue the subsidies
  OR
- contains major errors

Up to 3 further marks, for valid evaluative comment. The 3 marks can be awarded for:
- 1m for stating a stand / judgement clearly
- 2m for a good explanation on the reason for making the stand / judgement
- Possible to award 3 full marks if there are two evaluative criteria stated with attempts to explain the criteria, even if both explanations are not done well

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Overview

Part	Question	Marks	Word count for sample answer	Assessment objective(s)
(a)(i)	Compare the trends in the production of dairy milk for New Zealand, US, India and China over the period of 2012 to 2016.	2	16	**Content tested:** • Data-reading question. **Skills tested:** • Comparison of data – overall trend, extent of change. Absolute change can also be accepted.
(a)(ii)	Suggest a reason why New Zealand is the world's biggest exporter of dairy milk (Extract 1), even though the US, India and China each produce more dairy milk.	1	29	**Content tested:** • Net exporter (where there is excess supply) vs. net importer (where there is excess demand) **Skills tested:** • Demand / supply applications.
(b)(i)	Explain the likely value of price elasticity of demand for dairy milk.	2	32	**Content tested:** • Determinants of PED. **Skills tested:** • Making inferences from Extract 4, incorporate that into own understanding of likely PED for dairy milk.
(b)(ii)	Explain the likely value of price elasticity of supply of dairy milk.	2	66	**Content tested:** • Determinants of PES. **Skills tested:** • Data comprehension from Extract 2, inferring from context, incorporate that into own understanding of likely PES for dairy milk.
(b)(iii)	With reference to Extracts 1 and 2 and using a supply and demand diagram, explain how **one** demand factor and **one** supply factor led to the halving of global dairy milk prices since early 2014.	6	119 + diagram	**Content tested:** • Non-price determinants of demand / supply. • Market equilibrium adjustments with diagram. **Skills tested:** • Data interpretation to identify one demand factor and one supply factor. • Focus answer to address the change in prices.

(c)	Explain the likely impact of the halving of global milk prices on the economic agents – consumers, producers, government – in New Zealand.	9	328	**Content tested:**
				• Consequences of falling prices in a market, on economic agents.
				  o For consumers, should link to standard of living.
				  o For producers, should link to profits.
				  o For government, should link to budget balance or social welfare.

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Part	Question	Marks	Word count for sample answer	Assessment objective(s)
				Skills tested: • Structuring the answer either by how falling dairy milk prices affect each of the three economic agents (easier), or by how falling dairy milk prices can have three different impacts. • Inference that each explanation is worth 3m, adding up to 9m.
(d)	With reference to Extract 3, explain how changes in oil prices can impact the dairy milk market, and comment on **one** factor that would determine the extent of the impact.	7	242	**Content tested:** • Substitutes, i.e. when price falls in market A (oil), demand for B (biofuel) will fall. • Competitive supply, i.e. when equilibrium quantity / quantity supplied falls in market A (biofuel), supply of B (feed) will increase. • Market adjustment analyses. **Skills tested:** • Analyse the relationship between multiple markets based on information given. • Consideration for factors that would determine impact, i.e. break down analysis into individual parts.
(e)	Explain the factors affecting consumers' decision-making to switch from dairy milk to almond milk.	4	113	**Content tested:** • Decision-making framework elements, i.e. benefits & costs as the main factors, and can include constraints, information, unintended consequences. **Skills tested:** • Recognise that the question requires an explanation of more than one factor ("Explain the factor<u>s</u>…"). • Inference that each explanation is worth 2m, adding up to 4m.
(f)	Using evidence from the case study and your own knowledge, discuss the view that subsidies for dairy milk producers are "short-sighted" and should be discontinued.	12	383	**Content tested:** • Reasons for government to implement subsidies. • Reasons for government <u>not</u> to implement subsidies. **Skills tested:** • Synthesise arguments to make a judgement on whether subsidies should be discontinued, using dairy milk context as far as possible.

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Extract 1: Commodities: The milk industry cowed
11 Aug 2016, FT.com
https://www.ft.com/content/1b93f92c-5ef8-11e6-bb77-a121aa8abd95 (may have pay wall)

1	It is calving season in Waikato, New Zealand's biggest dairy region, and Nicola Kloeten, a farmer, is delivering a new generation of cattle which she hopes will satisfy Asia's growing appetite for milk, butter and cheeses.
2	Since signing a free trade deal with China in 2008, New Zealand has enjoyed an export-led dairy boom that has earned it the nickname of " the Saudi Arabia of milk " and driven a rapid expansion of its farm industry. The South Pacific nation is the world's biggest exporter of milk-based products, which account for a quarter of everything it sells overseas.
3	But a halving of milk prices since early 2014 — the result of oversupply and softening demand — is turning New Zealand's Chinese-linked farming boom to bust. For the first time in years, Ms Kloeten and her husband are reducing rather than expanding their herd of 560 Jersey and Friesian cross-breed cows.
4	"We have had to cull 60 cows because milk prices have stayed low for so long," says Ms Kloeten. "Many farmers are struggling."
5	The pain is being felt across an industry that stretches from the Pacific to the EU and North America, employs millions and wields significant political clout. Almost one-tenth of all milk produced is exported across borders in a trade worth $140bn a year.
6	Dairy NZ, an industry body, says four out of five of its dairy farmers are losing money for a third consecutive season. KPMG forecasts that one in 10 farmers in the country will have to exit the industry and a further 28 per cent will need to restructure their business and raise fresh capital to survive. Reported suicides of dairy farmers have also increased in recent months.
7	The Kloeten family, like many dairy farmers in this tight-knit rural community about 150km south of Auckland on New Zealand's North Island, is slashing costs by selling more animals into the meat industry and limiting the use of supplementary feed and fertiliser. The national dairy herd fell by 300,000 animals to 6.4m last year, the first reduction in a decade.
8	"I know some farmers who have had to sell their herds," says Ms Kloeten. "There was no point in building up any more debt with the way prices are."
9	Powder dried The crisis was triggered by a combination of global overproduction of milk and weaker than expected demand, particularly from China, the world's biggest buyer of dairy products, where imports fell by a fifth between 2014 and 2015, according to the UN's Food and Agricultural Organisation. This is being exacerbated by events such as Russia's 2014 ban on European dairy imports linked to tensions in Ukraine and weak demand in the Middle East, where the dip in oil prices has hit incomes.
10	The price of whole milk powder, a key ingredient in food products and New Zealand's biggest dairy export, has more than halved since 2014 to more than $2,000 per tonne, according to the most recent Global Dairy Trade Auction run by Fonterra, the Kiwi co-operative that has become the world's biggest dairy exporter.
11	Many commodities analysts do not expect dairy prices to recover to sustainable levels until 2017 at the earliest, when they hope cuts to production will make an impact. "This is the toughest period dairy farmers have seen for a generation," says Emma Higgins, Rabobank analyst. "Debt levels are higher, cost structures are higher and there has been what looks like three years in a row of low milk prices."

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12	The prolonged decline in prices is a global phenomenon which is prompting a restructuring of farming practices, milk processors and suppliers. It is also raising the pressure on governments to intervene and support farming communities even as some had been seeking to liberalise their dairy industries.
13	In the EU, which last year removed a three decades-old limit on dairy production to capitalise on the boom in China, prices paid to farmers for milk have slumped to 2009 levels. It is a similar story in Canada, where farmers are struggling with weak prices and protesting against the Nafta trade pact that allows the import of US dairy products without tariffs.
14	Farm owners globally warn that the crisis will force many to leave the industry. Last month the UK's Agriculture and Horticulture Development Board said one in 10 dairy farms in England and Wales — about 1,000 businesses — have closed since January 2013.
15	In Australia the scale of the price crash caught Murray Goulburn, the country's biggest dairy processor, by surprise. In April it made retrospective cuts to the price it had offered to pay farmers for milk, from A$5.60 to between A$4.75 ($3.66) and A$5. Its opening price for the new season beginning July is A$4.31, below estimated production costs of A$5-A$5.20.
16	"They were gutted by the first decision," says Adam Jenkins, president of the United Dairy Farmers of Victoria. "And now they're numb at this one."
17	The forecasting mistake cost Gary Helou, Murray Goulburn's chief executive, his job and forced Canberra to cough up A$555m in state-backed concessional loans for struggling farmers.
18	Questions of support The EU has made €1bn available in aid to farmers and begun stockpiling milk powder and other dairy products to try and force up prices. This comes after production increased by about 5 per cent in the first five months of 2016, compared to the same period last year.
19	Further support is planned by Brussels, which has been forced to retreat — at least temporarily — from its policy of liberalising its dairy industry by removing, for instance, production quotas to enable its farmers to compete for market share.
20	"We view these [EU] subsidies as short-sighted and protectionist," says Nathan Guy, New Zealand's agricultural minister. "It locks producers into unprofitable and eventually unsustainable overproduction and causes huge distortions in world markets."
21	New Zealand, which abolished most farm subsidies in the mid-1980s, is not advocating a return to state support even though its farmers are bearing the brunt of the collapse in dairy prices. It is particularly affected due to the scale of its dairy industry, its reliance on exports to China and its greater focus than other nations on whole milk powder, rather than cheeses, butters and yoghurts. It supplies about two-thirds of global exports of whole milk powder, with China the biggest customer.
22	"We export 95 per cent of our dairy and this is dominated by powder exports, which has seen the greatest fall in prices of all dairy products during this downturn," says Keith Woodford, honorary professor of agri-food at Lincoln University in New Zealand.
23	To meet China's seemingly insatiable demand for ice cream, infant formula and other dairy products, New Zealand's farmers ramped up production. They went on a buying spree increasing their herds, buying land and converting sheep and beef farms to dairy.
24	New Zealand's milk powder exports to China increased rapidly and peaked at 744,000 tonnes in 2013-14, generating huge profits. Since then weaker demand in China, higher domestic production and a build-up in stockpiles have prompted Beijing to halve imports.

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25	“China purchased more dairy product than it needed,” says Ms Higgins. “When it found itself awash with product, pressure was placed on dairy exporters — and therefore, New Zealand — to bear the adjustment, rather than the Chinese domestic dairy industry.”
26	Fonterra, which processes about 80 per cent of New Zealand milk, recently slashed the price it pays farmers to a nine-year low of NZ$4.25 ($3.08) per kilogramme of milk solid. This is almost half the peak payment and significantly below the break-even price of NZ$5.25, according to Dairy NZ.
27	“A lot of farmers are asking how the hell did we get into this mess?” says Chris Lewis, a farm owner and president of the Federated Farmers’ Waikato division. “This is the season when many people will have to decide whether to stay in dairy or get out.”
28	Money worries The biggest threat to farmers is posed by the debts of NZ$38bn amassed in the boom years, which amounts to a tenth of the country’s total bank lending, according to the Reserve Bank of New Zealand. Most farmers have cut costs to the bone by reducing the size of their herds, delaying capital purchases and letting casual staff go.
29	“Debt servicing is a really big issue for farmers,” says Mr Woodford. “Banks are not keen to foreclose as farm and land prices would fall and they would lose money.”
30	But there are signs of financial stress, with the price of dairy farms falling by 18 per cent in the 12 months ended in June, according to the Real Estate Institute of New Zealand. The central bank warned in its financial stability report in May that farmers’ debt positions are stretched and loan-to-income levels are approaching peaks last seen during the global financial crisis.
31	“Banks will have to balance the risk of overextending credit with that of exacerbating the downturn through tightening lending standards,” it said. Stress tests in March warned that some banks face losses of between three and eight per cent on their dairy exposures.
32	To date, New Zealand’s national economy has weathered the storm due mainly to construction linked to the rebuilding of Christchurch after the 2010-11 earthquakes and a housing boom. But on Thursday the central bank cut interest rates by 0.25 per cent to a new record low of 2 per cent, in a bid to weaken a strong New Zealand dollar that is hurting its dairy exports.
33	At the main cattle market in Hamilton on the North Island, farmers are downbeat. “Some farmers will not get any more money from their banks,” says Shane Egan, who sold his farm last year and now works at the market. “A lot of them have been losing NZ$200,000 a year so there will be a lot of pressure on farmers to sell in the next 12 months,” he predicts.
34	The decline in dairy prices has caused a fall in the value of dairy cows, which means farmers struggling to make debt repayments cannot simply sell their animals to pay back loans.
35	“The only saving grace,” says Brent Houghton, livestock agent and farm owner, “is that there are other farmers worse off than we are so the banks aren’t selling us all up in one fail swoop because they’d lose big themselves.”
36	The downturn is also having an impact on Fonterra, which has slashed 750 jobs out of its 16,000 workforce, even as it moved into its new NZ$100m headquarters in Auckland this year — a project conceived during the boom.
37	“There has been a slower-than- expected recovery in China and the strong New Zealand dollar is making things more painful than in previous cyclical downturns,” says Theo Spierings, Fonterra chief executive.

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38	But he is confident that the market will recover, adding that Asia's appetite for dairy is growing at 2-3 per cent a year. He says fears that China could increase its own production and cut out New Zealand's farmers are misplaced.
39	Already the world's third-biggest dairy producer, behind the US and India, China has ramped up production by an average of 8 per cent a year over the past five years, according to research firm Ibisworld. But it has to import a fifth of its total dairy consumption and the high cost of feed and environmental challenges make it unlikely it will become self sufficient, analysts say.
40	"Farming isn't easy in China," he says. "I have not changed my mind about the positive long term prospects for the dairy market or China."
41	Ms Kloeten and the rest of the New Zealand farming community are hoping he is right — and few would want to test their bankers' patience for much longer.

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Extract 2: When the milk market turned sour
27 May 2016, dw.com (Deustche Welle, German international broadcaster)
https://www.dw.com/en/when-the-milk-market-turned-sour/a-19286454

1	Not long ago, European dairy farmers built out their operations with dreams of worldwide export. But demand has shrunk, and millions of cows are now producing milk that nobody wants. Farmers are paying the price.
2	To grasp how serious the situation has become, it is worth taking a look at the recent course of the EU's intervention system, meant as a safety net to keeping prices from plummeting in times of crisis. If the cost of milk drops below 20 cents, the government would step in and buy up to 109,000 tons of powdered milk off the hands of dairy producers.
3	"Until now, nobody took any interest in the program," said Eckard Heuser of MIV, an association of German dairy producers. But this year is different. The EU had bought out the limit by April.
4	It then doubled the limit - and then quickly reached it again, piling up 218,000 tons of powdered milk in its possession. That's more than 2 billion liters of milk, or 1.5 percent of Europe's yearly production. Yet prices continue to sink.
5	The problem is systemic, and it won't be easy to fix. Cows are loyal workers. They can't work part-time or go on vacation. They eat and they give milk. And in the European Union, they're more productive than anywhere else.
6	Why is there so much milk in Europe? Farmers are like all other entrepreneurs. They seek to grow their business and export their products. And not too long ago, it seemed like a great time to do both. Milk quotas, which had capped production in Europe for decades, were being dismantled, and the export market was calling. From the Middle East to China, a thirst for milk and a hunger for cheese seemed to be growing.
7	"People were consciously overproducing," said Andreas Gorn, a dairy expert with AMI, a German agricultural market research firm.
8	But economic crisis struck around the world, with incomes falling along with demand. The trade embargo with Russia chipped away at the market further. European exports still grew, though not as much as its production. There are 23.6 million cows in European barns now, with each producing around 10,000 liters of milk per year.
9	Why don't the farmers just produce less? BDM, an association of German dairy farmers, estimates that production costs amount to about 40 cents per liter of milk. In May, German farmers were getting an average of 25.8 centers per liter. And Andreas Gorn expects the prices to spiral further.
10	Since farmers are losing money with each liter of milk they produce, it would seem reasonable to expect them to simply reduce their output. But the solution isn't that simple.
11	"Farmers need liquidity," explained Jutta Weiss, a spokeswoman for BDM. They have to buy feed, pay rent, service credit. Fresh money only comes in when milk is sent out. So if a farmer stops milking, he or she will immediately go bankrupt. The others continue milking against time, hoping to scrape by until prices recover.
12	An absurd situation ensues. Because the return isn't high enough, farmers send off as much milk as possible, trying to scrape together enough money to get by, which of course adds to the glut and presses prices down even further. Dairy farmers are trapped in "a vicious circle," as BDM calls it. And not only those in Europe.
13	How is the milk price worldwide?

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	"Around 80 percent of the local price is determined by the global price," estimates Holger Theile, director of IFE, a German research institute that analyses the milk market. This applies to butter, cheese and powdered milk - all methods for transporting milk without it perishing. Powdered milk is the most ideal: Packed in sacks, it can last for years and reach every corner of the world.
14	Around a third of the cheese and skim powdered milk that is traded worldwide comes from the EU. It makes no difference to a chocolate producer in the US whether its milk comes from Europe or next door. What matters is the price, which means that farmers from Bavaria are pitted in direct competition with farmers in Brazil or New Zealand. If prices tumble in one corner of the world, they tumble everywhere else, too.
15	What can be done? Only one thing seems to be agreed upon: No one in Europe wants the government to impose quotas again. But how else can the situation be brought under control?
16	"We have to do something about the volume," urges the MIV association. It argues that farmers should be compensated for producing less milk, around 30 cents per liter, so that as many farmers as possible take part as quickly as possible.
17	But Michael Lohse from another German farmer association, DBV, believes "that doesn't work - the markets are open and should stay open." He argues that if Europe produces less milk, then other regions will simply produce more. DBV calls for binding agreements between milk farmers and the dairy producers who buy from them. Until now, producers have had to buy all of the milk that the farmers deliver, even if it the demand isn't there.
18	The thought of fallow farms and abandoned villages is also haunting politicians. Last autumn, Brussels put together its first aid program, amounting to 500 million euros ($558.7 million), which many saw as just a drop in the bucket. Smaller, family-run farms are already starting to fail, and Robert Habeck, a politician with the German Green party, warns that in five years, half of the dairy farmers in Germany could disappear.
19	The farmers associations agree. "Whoever wants there still to be farmers has to do something," Lohse said. "Otherwise the industry will go abroad, as happened with textiles."

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Extract 3: Milk price cuts reflect the reality of sweeping changes in global dairy market
12 May 2016, The Conversation (independent news source based in Australia)
https://theconversation.com/milk-price-cuts-reflect-the-reality-of-sweeping-changes-in-global-dairy-market-59251

1	A structural change is underway in global dairy markets. A perfect storm has emerged through a coincidence of events, technology, and policy changes across the major dairy producing nations, including Australia, which will result in a long term significant reset of dairy economics across the globe.
2	Cooperatives Murray Goulburn and Fonterra have both dramatically reduced the prices they offer dairy farmers for milk, sparking a backlash from farmers, who say they will be pushed into the red and out of dairy.
3	It is only due to the strength of the two cooperatives in absorbing the costs of high milk prices in a changing market that these reductions did not occur earlier. The cooperatives have shown an inadequate understanding of global dairy economics by over-paying farmers and by seeking to claw back over-paid advances.
4	The low prices have been blamed on a short-term oversupply coinciding with a reduction in demand from China and Russia. Some of this demand is now being met by Chinese investment in both Australia and New Zealand which also contributes to the changes underway. But the debate thus far has focused on problems with demand while ignoring the bigger issue of increasing global over-supply.
5	The preoccupation with the belief that global demand will solve emerging on-farm production cost difficulties and that a "substantial improvement in prices was still expected by mid-2016" was naïve and failed to recognise how quickly, and irreversibly global dairy supply can change.
6	Since the mid-2000s a strong increase in demand for milk products across Asia, largely on the back of rising middle-income wealth led to the complete depletion of surplus dairy stocks in the European Union and the US. This change to the supply-demand equilibrium resulted in a temporary sea-change in dairy markets because growth in demand simply outpaced growth in supply by between 50% and 100% in some markets on an annual basis.
7	To a large extent this imbalance had been driven by regulation of the global supply market in which only a few export nations competed – Australia and New Zealand included. It resulted in higher than historical average dairy prices in global markets, but considerably more short-term volatility due to global GDP shocks and short-term supply-demand imbalances.
8	Regrettably a critical assumption that appears to have emerged among producers during this period, as evidenced by continued investment and expansion, was that the real price for global dairy commodities was increasing, a trend they expected to continue in the long term.
9	The current dairy price scenario, which would historically have been short-lived, is in fact masking underlying structural changes to supply-side dynamics that are now underway. Only approximately 7% of globally produced milk is traded (65 billion milk-equivalent litres). Therefore, a small change in supply globally has a profound effect on the global dairy market equilibrium.
10	The EU is the world's largest milk producer, with approximately 160 billion litres produced annually. The removal of milk production quotas in March 2015 presented an opportunity for dairy expansion and, even more importantly, one that is no longer confined to the traditional dairy exporters of Ireland, France, Belgium, and the Netherlands.
11	Under quota, EU exports doubled between 2000 and 2013 to 9.5 billion litres and are anticipated to increase again this coming season. Quota removal has freed dairy farmers in central and Eastern Europe to increase in scale considerably,

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	availing themselves of technologies denied during the Cold War years. Coupled with the removal of regulations concerning the transportation of liquid milk across borders, producers and processors now find themselves with opportunities for growth not experienced since the second world war.
12	Political policies in the world's third largest dairy producer, the USA, are also likely to influence global dairy supply in the future. Current dairy production is being stimulated by low feed prices, which were driven by record yield seasons in 2013 and 2014, similar levels in 2015 and new projected highs this year.
13	Eighty percent of US dairy farm costs are feed. The reduction in feed costs from US$29.26 per 100kg milk in August 2012 to US$18.04 per 100 kg milk in June 2015 has greatly increased the value of marginal production.
14	The advent of large-scale fracking, which has resulted in a significant reduction in the price of oil, will likely maintain lower corn prices, at least in the short-term. This comes as the reduced value of biofuels re-focus the use of corn back to a feedstuffs for farmed livestock. The net result is that 75% of every new tonne of production across the USA is expected to be sold on the global surplus market.
15	Farmers have fought for free trade and open access for decades on both sides of the Tasman. Now that it is emerging, profitable returns will be caught first by the lowest cost global producer.
16	We are fools to think that that will be either Australia or New Zealand. Therefore, possibly with the exception of the US market, a downward reset is in store for global dairy prices.

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~~Extract 4~~: WWF's work in dairy industry
Accessed 31 May 2018, World Wildlife
https://www.worldwildlife.org/industries/dairy
Extract removed to avoid clash with Q2.

-	Millions of farmers worldwide tend approximately 270 million dairy cows to produce milk. Milk production impacts the environment in various ways, and the scale of these impacts depends on the practices of the dairy farmers and feed growers.
-	Dairy cows and their manure produce greenhouse gas emissions which contribute to climate change. Poor handling of manure and fertilizers can degrade local water resources. And unsustainable dairy farming and feed production can lead to the loss of ecologically important areas, such as prairies, wetlands, and forests.

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Extract 4 replacement: Almond milk sales continue to surge, as dairy milk contracts, Nielsen data shows
14 Apr 2016, Food Navigator (leading online news source for food industry, based in US)
https://www.foodnavigator-usa.com/Article/2016/04/15/Almond-milk-sales-continue-to-surge-as-dairy-milk-contracts-Nielsen

<website does not allow copy / paste>

With plant-based diets all the rage in the US currently, milk alternatives – and particularly those from almonds – are seeing strong sales growth and increased innovation, while sales of dairy milk are contracting.

In the past five years, sales of almond milk have grown 250% to more than $894.6 million in 2015, according to the Nielsen Company.

During the same period, Nielsen adds, the total milk market shrunk by more than $1 billion.

The trajectories of almond and dairy milk are starkest when year by year sales growth are compared. Nielsen found sales of almond milk grew 7.8% in 2015 over the previous year while those of traditional milk fell 7%. This follows a pattern established in 2012 and 2013 when sales of almond milk grew 59.8% and 50% respectively, while traditional milk fell 0.7% and 1.7% in the same years.

In 2014, sales of dairy milk saw a slight rebound with growth of 3.1%, but clearly that was not sustained in 2015, according to Nielsen data.

The sharp difference between two subcategories softens slightly when the size of each is taken into account. Dairy milk still dominates, with almond milk accounting for about 5% of the total milk market.

Still, almond milk is the clear favorite among other substitutes, based on Nielsen data. It shows sales of almond milk last year were twice that of soy, which sold $297.7 million in 2015. Coconut milk came in next at $61.3 million, followed by rice milk at about $18 million and other substitutes at a combined $50.2 million.

Key drivers in consumer interest

Consumers' increasing interest in almond milk and disinterest in dairy milk likely is *"due to general health and wellness concerns and a rising awareness of the environmental and sustainability issues surrounding it,"* said Greg Steltenpohl, CEO of plant-based beverage company Califia Farms.

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"And, simply, a growing number of consumers [are] seeking a plant-based diet," he added.

Data from Nielsen's 2015 Global Health and Wellness survey supports this theory. It found more than 30% of consumers said whether a product was made from vegetables or fruit is *"very important"* in their purchasing decisions.

In addition, 30% said no artificial flavors were very important, followed up 29% for no artificial colors, 24% for organic and 20% for sustainable and fair trade – suggesting consumers are looking for back-to-basic, low-impact products, Nielsen said.

The market research firm added dietary restrictions may also explain interest in almond milk as it does not pose a threat to people who are lactose intolerant or who worry about hormones or antibiotics.

According to Nielsen, products labeled as hormone- or antibiotic-free have grown double digits in the past four years and generated $11.4 billion in sales last year. Likewise, sales of lactose free products grew 8.6% in the same period to $8.7 billion.

"Almond milk is very accessible to consumers looking to transition away from dairy milk because of its delicious taste and texture (verses other alternatives, like soy) and, therefore, its drinkability," he said.

He added: *"It's also the first alternative dairy category with strong brand players like Califia Farms – which focuses on creating delicious, mindful nourishment that directly appeals to the huge number of people who are actively incorporating plant-based foods into their lives."*

Almond milk is here to stay

Even though the growth of Almond milk sales is slowing with the percent change dropping to 7.8% in 2015 compared to 39.8% in 2014 and 50% in 2013, Steltenpohl disagrees with Nielsen's suggestion that the category may be plateauing.

"We strongly believe in the entire category's growth potential (slowing to the triple digit range is still growing ... a lot!), and we think that there are opportunities to continue innovating and challenging the status quo," he said.

For example, he noted, Califia Farms' Almond Milk Creamers *"have revolutionized a sleepy category, bringing new users into both the dairy-free creamer category and the alternative dairy category for the first time."*

That said, Steltenpohl added he also sees significant potential for other nut milks.

"We have already made some significant investment in exploring [alternative nut sources] and are working with several other nut categories," he said. *"Our new CaliCoco Smoothie is a prime example of our use of coconut, but we also feel cashew, hazelnut and macadamia are important nut sources that we have already begun to explore and incorporate into some of our formulations."*

https://www.theguardian.com/lifeandstyle/shortcuts/2015/oct/21/almond-milk-quite-good-for-you-very-bad-for-the-planet (end of Extract 4)

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(a)		With reference to Extract 5, identify and explain two pieces of information that would be useful in assessing living standards in US. • 'Economic growth': real GDP is increasing → higher production and consumption of goods & services → higher material SOL • 'Lost workers': these workers who have left the labour force face a loss of income → lower material SOL • *Also accept: there may be a worsening of the non-material SOL due to higher crime rates, compromising the safety and well-being of the people* • 'Income inequality': rich-poor gap widens → the high-income minority experience a much higher increase in material SOL as compared to those on low income 2m per point	[4]

(b)		With reference to Extract 5, explain one macroeconomic consequence to arise from 'lost workers' and comment on the extent of benefits of bringing these workers 'back into the labour force'.
		
		Macro consequence (up to 4m):
		• *Rise in 'lost workers' → a fall in C spending → fall in AD → fall in real GDP or economic growth, rise in unemployment → material SOL decreases.*
		• Rise in 'lost workers' → fall in QQT or slow-down increase in QQT → slows down the increase in Yf / potential growth → potentially bottlenecks or DD-pull inflation building up.
		
		Break-down of 4m marks:
		Up to 2m for how 'lost workers' impact components of AD and/or AS
		Up to 2m for how AD and/or AS changes will impact the macro goals
		
		Comment (up to 3m):
		• Bring workers back into the labour force → some workers gaining employment → these workers enjoy higher real income → C spending increase → AD increases and actual growth is achieved
		• Extent:
		  ○ the extent of C increasing could be limited as the proportion of these 'lost workers' out of total labour force or out of total consumption could be small → extent of benefit could be limited.
		  ○ The extent of income increasing for these workers could be limited as these are mostly the retirees, workers who faced prolonged unemployment and are 'de-skilled' → extent of benefit on economic growth could be limited.
		
		• With fewer people unemployed → the employed can contribute to the govt's tax revenue + less unN benefits are paid out → the govt budget position can improve
		• Extent:
			[7]

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		○ The proportion of tax revenue contributed by this group could be limited and while this group have re-joined the labour force, they could still be economically unemployed and therefore still qualify for unN benefits → the extent of benefit on govt budget could be limited. Break-down of 3m marks: Up to 1m for explaining the benefits of bringing these workers back into the labour force Up to 2m for analysing the extent of benefits	
(c)		Explain how China's currency manipulation could have led to the 'closure of more than 50,000 factories and the loss of tens of millions of jobs'. • China devalues its currency → China's X are relatively cheaper in foreign currency while China's M are relatively more expensive in local currency → China's net X increases • In turn, US's net X decreases → US's AD decreases (up to 2m for how AD in US is impacted) • There is an unplanned increase in inventories → firms cut back production (closure of factories) • They hire less resources, including labour (loss of jobs) (up to 2m for how fall in AD impacts factories and jobs)	[4]
(d)		Analyse the possible impact of 'a massive tax reduction' on public finances in	
	(i)	The short-term • With a tax cut (income and corporate tax), there is lower govt tax revenue earned • This worsens the govt budget position, ceteris paribus	[2]
	(ii)	The long-term • With lower income tax, disposable income increases → C spending increases • With lower corporate tax, after-tax profits increases → I spending increases • Thus, AD increases → real NY increases → with higher taxable income, govt budget position improves	[3]
(e)		Explain why the Fed's decision to increase interest rates would 'head off mounting pressure for prices to rise'. • With an increase in interest rates, cost of borrowing increases • Also returns on savings increases, C spending decreases • As profitability of investment decreases, I spending decreases • Thus, AD decreases → less competition for resources • Firms pass on the decrease in cost to consumers in the form of lower prices	[4]

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		Up to 2m for how increase in interest rate impacts AD and/or AS. Up to 2m for how changes in AD and/or AS impacts prices.	
(f)		With reference to Extract 7, discuss the policy options you would present to the governments as responses to the threat on the environment. <u>Explain the options</u> • Encourage the use of clean energy; buying clean vehicles → reduce the demand for oil and switch to clean energy → amount of MEC per unit of production reduced → reduction in over-production/consumption → reduction in emissions/welfare loss/market failure • Regulate emission levels → reduce the production activities associated with these emissions to near the socially optimal level of production → reduction of over-production → reduction in emissions/welfare loss/market failure. This is can achieved through emission taxes, tradeable permits or production quotas (policy mechanism must be explained). <u>Limitations for encouraging the use of clean energy buying clean vehicles</u> • Time period: May take time for consumers to switch their purchasing pattern to cleaner vehicles • Closeness of substitutes: while clean energy can be considered a substitute form of energy, the closeness of substitutes between clean energy and fossil fuels is also dependent on the relative price (clean energy could still be relatively more expensive) and whether consumers and producers are able to switch to clean energy (e.g. if factory is powered by coal or traditional sources of energy, there must be a total revamp of the machineries such that they can be powered by clean energy) <u>Limitations for regulating emissions levels</u> • Monitoring cost: Enforcing production quotas involves administrative costs e.g. monitoring and enforcement costs → fiscal cost on the govt • Price elasticity of demand: if PED<1, emission taxes are not so effective as the increase in price/cost will lead to a less than proportional decrease in quantity demanded. • Measurement problem: the governments may suffer from imperfect information of the is the optimal level of production/consumption or the amount of MEC generated, this makes it difficulty for government to correctly implement the correct taxes, permits or production quotas. <u>E: reasoned conclusion</u> • The recommended policy should take into account the differences in the countries • E.g. as US is far larger than the other 2 countries, it would have greater feasibility issues in ensuring compliance to its stated regulations L2 (4 - 6m): A developed explanation of at least 2 policy options (how they work) as well their limitations (2-sided).	[9]

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		A developed explanation of only 1 policy option (how it works) as well as the limitations (2-sided) – cap at 4m A developed explanation of at least 2 policy options (how they work) without analysis of limitations (1-sided) – cap at 4m	
		L1 (1-3m) — An undeveloped explanation, or for an answer with many conceptual errors	
		E (1-3m) — A reasoned judgement on the likely or relative effectiveness of at least one policy option for the countries. Up to 1m for stating Up to 2m for substantiation	
(g)		Governments often use fiscal policy to achieve their macroeconomic aims. Discuss the appropriateness of increasing spending on infrastructure by the US government in achieving the aims of economic growth and low unemployment. <u>Explain how infrastructure spending achieves EG and low unN</u> • Increase in govt spending on construction activities → AD increases → unplanned decrease in inventories → firms step up production by hiring more resources, including labour → EG and low unN are achieved • Infrastructure projects → leads to an increase in the quantity and quality of capital → AS increases → potential and actual economic growth <u>Limitations</u> • 'Small stimulus': G spending as a proportion of GDP is small, thus leading to a reduced ability to achieve the aims • 'Fiscally sound?': huge fiscal cost on govt incurred/ opportunity cost of govt expenditure • 'Leaning on MP': the economy's reliance on MP so far may suggest that the economy is falling into a liquidity trap → in such a situation, EFP may be more effective in achieving the aims instead <u>Overall</u> • 'The last few decades have seen very little investment in infrastructure in the U.S.': if gross investment falls below depreciation, then there may be reductions in capital stock • This would have an adverse impact on AS due to a fall in quantity and quality of FOP • Thus, the policy of rebuilding infrastructure would prevent this negative consequence from manifesting in the economy	[12]

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E: reasoned conclusion

- Infrastructure projects ensures that the spare capacity created is converted to the production of goods and services → in so doing, the govt is able to achieve both its aims
- However, as infrastructure projects take a long time to bear fruits, in the SR, the economy may suffer from inflationary pressures instead
- In the LR, these inflationary pressures should abate as the AS curve shifts rightwards

L3 (6 – 9)	A developed explanation of how infrastructure projects help to achieve BOTH goals of economic growth AND low unemployment (how it works) AND the limitations/unintended consequences/constraints (2-sided).
L2 (3 – 5)	A developed explanation of how infrastructure projects help to achieve ONE goal of economic growth OR low unemployment (how it works) AND the limitations/unintended consequences/constraints (2-sided). A developed explanation of how infrastructure projects help to achieve BOTH goals of economic growth AND low unemployment (how it works) but did not consider the limitations/unintended consequences/constraints (1-sided). An under-developed explanation of how infrastructure projects help to achieve BOTH goals of economic growth AND low unemployment (how it works) AND the limitations/unintended consequences/constraints (2-sided), i.e. with gaps or some misconceptions
L1 (1 – 2)	An undeveloped explanation or answers that contains many conceptual errors
E (1-3m)	A reasoned judgement on the overall appropriateness of spending on infrastructure projects in achieving macro goals of economic growth and low unemployment. Up to 1m for stating Up to 2m for substantiation

[Total: 45 marks]

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