

TEMASEK JUNIOR COLLEGE  
Preliminary Examination 2019  
General Certificate of Education Advanced Level  
Higher 2

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## **ECONOMICS**

Paper 1 Case Study

**9757/01**

**Thursday 29 August 2019  
2 hours 15 minutes**

Additional Materials: One 12 Page Answer Booklet, one piece of writing paper for rough work

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### **READ THESE INSTRUCTIONS FIRST**

**Do not turn over until you are told to do so.**

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

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

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

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

Rough work can be done directly on the question paper, on the extra piece of writing paper, or in the answer booklet. If rough work is done in the answer booklet, cross it through before handing it in.

Answer **all** questions.

Indicate the question number clearly in your answers.

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

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



**Temasek Junior College  
Economics**

Answer **all** questions.

**Question 1: More of Wire-less? – The Market for Wireless Data**

**Table 1: 500MB Mobile Data Prices (in US Dollars)**

	2013	2014	2015	2016	2017
<b>Singapore</b>	11.99	11.84	7.27	7.24	7.24
<b>India</b>	3.38	3.24	4.04	2.53	2.78
<b>United States</b>	65.32	48.94	38.11	54.44	21.76

Source: *International Telecommunication Union Database*

**Extract 1: Asia’s digital economy is booming. So why are Singtel and Co struggling?**

A rude shock came after Singtel reported its net profits had fallen 43 per cent to S\$3.1 billion in the year to March – a 16-year low for the firm. Singtel chairman Simon Israel blamed the results on a “perfect storm” of intense competition and rising economic uncertainty. Telecommunication companies (Telcos) supply the internet economy’s very lifeline: connectivity and mobile data. Yet rather than riding the same wave of success, many are struggling. A large part of why the internet economy has taken off in such a big way is the falling costs of access, particularly mobile data. Market liberalisation in the Telco space started in the 2000s and has accelerated in the past few years. With more competitors flooding the market, Singapore now has 11 Telcos.

DBS analyst Sachin Mittal points out that telcos had yet to unlock the secret to monetising data that they had. “Telcos also have customer data but have not been able to draw insights from that data due to legacy storage and lack of software expertise,” he notes. Some like Vietnam’s largest telco Viettel have started to take risks. Its post and delivery services arm, Viettel Post, launched its ride-hailing service called MyGo, with the ambitious target of turning a profit by 2021. But diversification did not bring immediate dividends, Maruvada notes. “Singtel was early in identifying the need to invest in areas adjacent to traditional telecom business [carriage of voice and broadband] but it is clear that the businesses are still far from maturity or having necessary scale to drive profitability,” he says.

Source: *South China Morning Post*, 13 July 2019

**Extract 2: Verizon reintroduced unlimited data plans**

Verizon reintroduced unlimited data plans back in February 2017, after an eight-year hiatus. Currently, Verizon is offering four different unlimited data plans: Start Unlimited, Play More Unlimited, Do More Unlimited and Get More Unlimited. The cheapest of the Verizon plans is called Start Unlimited, with one line costing \$70 a month. The plan costs \$120 a month for two lines, \$135 a month for three lines and \$140 a month for four lines. It offers unlimited 4G LTE data with 480p video streaming, unlimited talk and text in the U.S., unlimited talk, text and data in Mexico and Canada and a free six-month trial for the Apple Music streaming service.

Source: *Android Authority*, 28 July 2019

### Extract 3: Why USA's mobile data plans are the most expensive on earth

A new study has found that US wireless consumers pay some of the highest prices for mobile data in the developed world. According to a new study from Finnish research firm Rewheel, the US mobile data market has the fifth most expensive price-per-gigabyte smartphone plans among developed nations, and was the most expensive for mobile data overall.

Critics have pointed to high prices to connect to cellular towers that impact pricing for the end user and smaller competitors. They have also argued that the US government's Federal Communications Commission recently made these problems worse by lifting price caps on this uncompetitive sector.

Source: *Tech by Vice*, 21 Nov 2018

**Table 2: Comparison of USA mobile data plans**

Carrier	Unlimited data monthly cost	Data limit	Hotspot allowance*	Bundled streaming services included^
Sprint Unlimited Basic	\$60	50GB/month	500MB at LTE speeds	Hulu
T-Mobile Essentials	\$60	50GB/month	Unlimited 3G data speeds only	none

\*hotspots allow for the use of Wi-Fi instead of mobile data at certain locations. The fastest speed available for hotspots are LTE speeds.

^streaming services allow consumers to tap on third party apps for TV shows, music etc. 'Hulu' is a movie / TV shows streaming service.

Source: *c/net*, 4 Sep 2018

#### **Extract 4: Wireless@SG**

Surfing speeds on Singapore's free public Wi-Fi service Wireless@SG will be more than doubled to 5Mbps by the end of this year, as the Government sees the network as a key enabler of Singapore's Smart Nation vision.

"We must build first-class infrastructure for pervasive, seamless and high-speed connectivity to benefit citizens and businesses," Minister of State for Communications and Information Janil Puthuchery said, in announcing the upgrades in Parliament yesterday. He also added that Wireless@SG's current speed is faster than most public Wi-Fi services around the world. But because demand is increasing, there is a need to boost current speeds.

Singapore will also have the highest hotspot density in the world, calculated by the number of hotspots per inhabitant. Currently, it trails only Tokyo. Coverage expansion will target congested places such as hospitals, government buildings and community centres so more people can connect to the network without surfing slowdowns, a common bugbear. More public places such as hawker centres, train stations and retail malls will also be added to the list of Wireless@SG zones.

"But it is not the connectivity that makes us smart; it is what we do with it," said Dr Janil. "Operators can also use Wireless@SG to offer improved services such as cashless payment and location-based analytics. All this benefits consumers, businesses, and productivity."

One group of beneficiaries is low-income users. The idea is to allow Wireless@SG to complement existing efforts to bridge the digital divide between those who can afford the good and those who might not be able to.

Source: *The Straits Times*, 12 April 2016

#### **Extract 5: Economics of public Wi-Fi**

The basic economic objection to free public Wi-Fi is that any benefits to low income is unlikely to be realised. Free public Wi-Fi is unlikely to be strong in all areas and therefore locations with stronger Wi-Fi signals will simply bid up existing land and building prices.

Any benefit due to the free public Wi-Fi will be compensated by higher prices for local services (such as cafes and short-stay accommodation). For this reason, the target population of the free public Wi-Fi, which is presumably the lower income group, may experience no net benefit once general prices of the goods and services in any area is taken into account. The main beneficiary at the end of the day may just be the landlords in the area serviced by the free public Wi-Fi.

Source: *Journal of Telecommunications and the Digital Economy*, February 2014

**Questions**

- (a) (i) With reference to Table 1, compare the trend in mobile data prices in Singapore, India and the United States from 2013 to 2017. [2]
- (ii) With reference to Extract 1, explain the general trend observed for Singapore in (a)(i). [4]
- (b) Using a diagram, explain the effect of the US government's action in Extract 3 on the consumer expenditure for mobile data plans. [4]
- (c) Suppose a US consumer is choosing between two plans in Table 2.  
Explain what is the opportunity cost of buying the '*Sprint Unlimited Basic*' data plan. [2]
- (d) Discuss whether Viettel's diversification strategy or Verizon's pricing strategy is more effective to increase revenue for a telecommunication company. [8]
- (e) Discuss whether governments should follow Singapore's example of providing free public Wi-Fi. [10]

[Total: 30]

## Question 2: The Economics of Sports

**Figure 1: Change in export volume in Brazil (2008 to 2016)**



Source: *The World Bank*, accessed August 2019

### **Extract 6: Why is Rio de Janeiro finding it so hard to clear up its waste?**

Eight years ago, air pollution in China was the curse of the Olympics. Beijing had to spend tens of millions of dollars closing factories, banning cars and trying to engineer the weather. Now it's Rio's turn to host the Games and attention has turned to water and basic sanitation. Rio has the image of a rich, beautiful city, but its crowded hospitals testify to the nightmare of its sanitation for people who must live with urban pollution every day. One in three of the more than 10 million inhabitants of the greater metropolitan area live in places that have no connection to a sewerage system, and only about half of the city's waste is treated before entering waterways and eventually the ocean.

Instead of sanitation being extended to 80 per cent of people, as promised, vast money has been spent on highly visible cable cars, beautification and facilities for tourists and athletes rather than on basic services like waste collection and sewers. Unsurprisingly there have been protests. This week, Eduardo Paes, the mayor of Rio, accepted that Guanabara Bay is not in the pristine state envisaged in 2007. But he said the city is in a far better state than 10 years ago. "For every one (Brazilian) real<sup>1</sup> we have spent on the Games, we have invested five on ensuring a legacy for the city, through sustainable infrastructure, improved public transport and accessible facilities for our citizens," he said.

Source: *The Guardian*, August 2016

<sup>1</sup> The Brazilian real is the official currency of Brazil.

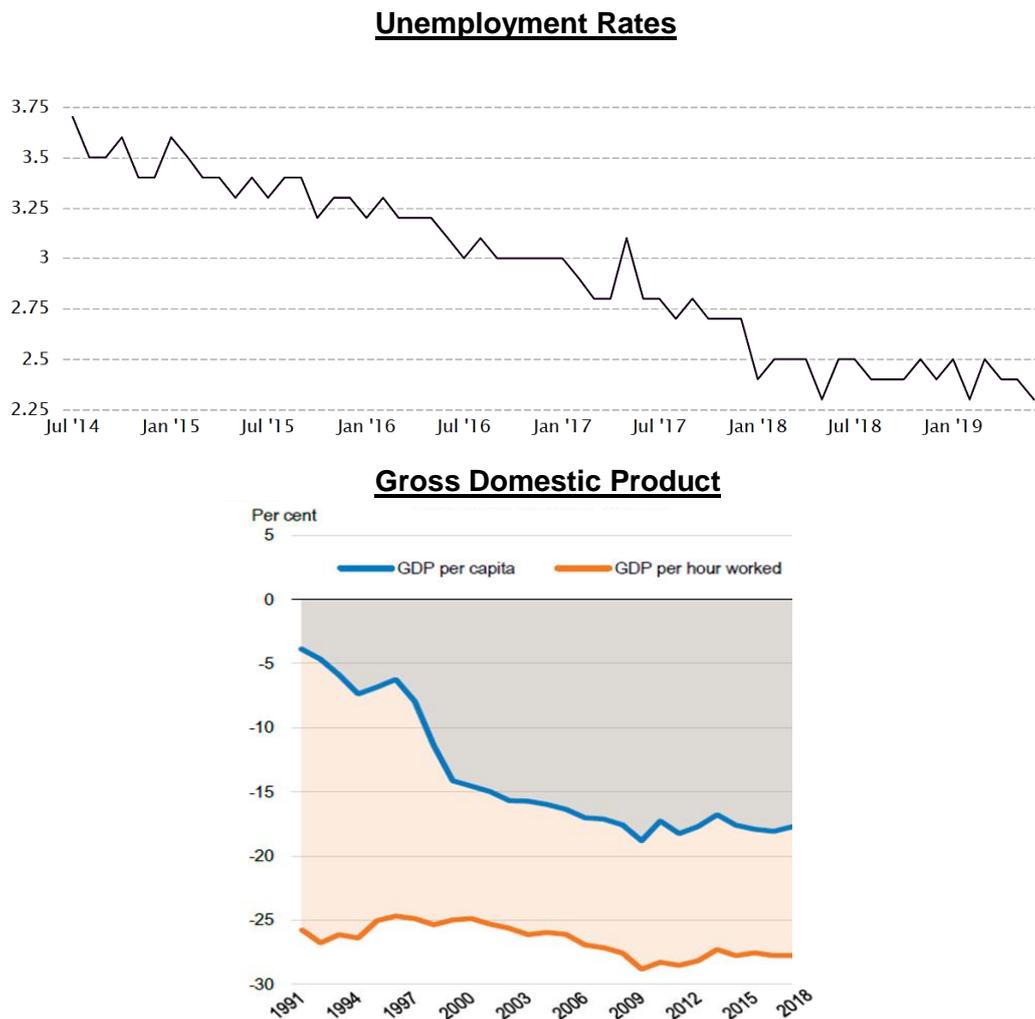
### Extract 7: A City Transformed

Since winning its bid for the 2016 Olympic Games seven years ago, Brazil's Rio de Janeiro has undergone a construction boom, including new sports venues, subway connections, and more infrastructure. One of the flagship transportation efforts, Rio built a new subway extension linking popular beach areas with the neighbourhood where the Olympic Park is located. Enormous investment has been pumped into transportation infrastructure projects throughout the city, including the VLT Carioca (the Rio de Janeiro Light Rail) in the port district. The rail connects Rio's domestic airport to a bus terminal and is aimed at revitalising the area.

The construction of the golf course, however, has stirred controversy. Golf is not widely played in Brazil, and though there is one small public course on the northern outskirts of Rio, Brazilian officials have touted the fact that after the Olympics, the course would become the first professional-quality public course in Brazil. But it was partially built on a protected nature reserve, angering local activists.

Source: *The Wall Street Journal*, August 2016

**Figure 2: Selected economic indicators for Japan**



Sources: *CEIC data, Organisation for Economic Co-operation and Development*

### **Extract 8: Tokyo 2020 Olympics will come and quickly go, but the legacy is all-important**

The legacy of an Olympics refers to the benefits that a host city and country gains once the event is over. That can take the form of new stadiums, redeveloped urban areas and updated transport networks. The history of Olympic legacies is a mixed one, filled with cautionary tales of overspending and waste. Understandably, Tokyo is anxious to avoid a similar fate. The huge cost of staging an Olympics, and the potential economic dangers for a host city, has thrown the issue of legacy into sharp focus in recent years. That was never more evident than at last summer's Rio Olympics.

Transport was also the most recognisable legacy of the last time Tokyo hosted the Summer Olympics, with the debut of the shinkansen (high-speed rail) nine days before the start of the 1964 Games. Japan has hosted the Winter Olympics twice since then, in Sapporo in 1972 and Nagano in 1998. The 1998 Olympics prompted Japan to extend its shinkansen service from Tokyo to Nagano, cutting the three-hour journey in half. But the tourism boost that organisers hoped would follow failed to materialise, and the purpose-built hotels struggled to attract guests. "The shinkansen arrived and they built new roads, and it made Nagano closer to Tokyo," said Ezawa, who authored two books criticising the cost of the Nagano Olympics. "But with less traveling time, it also meant the amount of people staying in hotels here dropped. There was also a lot of damage to the natural environment in Nagano."

Source: *The Japan Times*, January 2017

### **Extract 9: Growth is coming home – How a successful World Cup will boost the British economy as Brexit looms**

Obviously, England winning the World Cup would be a brilliant achievement in isolation, putting to bed decades of jokes and generally imbuing Britain with a sense of sporting pride not seen since the 2012 Olympics. There's another reason, however, to hope that Gareth Southgate's boys bring back the trophy – the economy.

In the two years since Britain voted to leave the European Union, the country's economy has undoubtedly suffered. The pound dropped sharply, pushing inflation up. In tandem with stagnant wage growth, this created a scenario where workers were seeing their take home pay decreasing. That lowered the amount they were willing to spend, denting both consumer confidence and retail sales. As sales fell, the wider economy stuttered and growth stalled.

Things could improve in the second and third quarter of the year, and amazingly, the World Cup should be at least partially the reason why. The improving economic picture is one reason that three members of the Bank of England's Monetary Policy Committee – the body responsible for setting interest rates in the UK – voted to raise rates at its June meeting.

The argument is simple, when England play well in the World Cup, England supporters are happier and are more inclined to spend on non-essential items. Furthermore, when the World Cup in general is happening, Brits are more likely to host parties and barbecues, spending significantly more on groceries than they otherwise would do. People are, of course, more likely to go to the pub and buy drinks. Britain is generally a consumer powered economy, so when people are buying, growth accelerates.

Source: *Business Insider Singapore*, June 2018

### Questions

- (a) (i) With reference to Figure 1, describe the trend in Brazil's volume of exports from 2008 to 2016. [2]
- (ii) With the aid of a diagram, explain how the general trend above could have affected the external value of the Brazilian real. [3]
- (b) Using Figure 2, describe how productivity in Japan has changed since 2015. [2]
- (c) Using a production possibility curve diagram, explain **two** benefits of hosting the Olympics to the host country. [5]
- (d) Assess how far the data provided suggest that hosting the 2020 Olympics will improve Japan's employment rate. [8]
- (e) Discuss whether the decision made by the Bank of England's Monetary Policy Committee (Extract 9) is appropriate for the UK economy. [10]

[Total: 30]

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**H2 CSQ 1**  
**Suggested Answers**

<b>(a)</b>	<b>(i)</b> With reference to Table 1, compare the trend in mobile data prices in Singapore, India and the United States from 2013 to 2017. [2]
<p><b>General trend [1 mark]</b></p> <ul style="list-style-type: none"> <li>Mobile data prices are generally falling for all 3 countries.</li> </ul> <p><b>Refinement [1 mark]</b></p> <ul style="list-style-type: none"> <li>Mobile data prices fell by the greatest percentage in the US</li> <li>Mobile data prices fell by the smallest percentage in the India</li> <li>US and India experienced episodes of increase in mobile data prices but Singapore did not.</li> </ul>	
	<b>(ii)</b> Using reference to Extract 1, explain the general trend observed for Singapore in (a)(i). [4]
<p><b>2m for each demand/supply factor analysed]</b></p> <ul style="list-style-type: none"> <li>The “intense competition” saw more firms enter the mobile data market giving rise to an increase in supply. “With more competitors flooding the market”, there are more firms in the market and hence there is now an increase in supply in the mobile data market. [2m]</li> <li>The “rising economic uncertainty” could have brought about lower willingness to purchase mobile data amongst the consumers due to an uncertainty over their future income. Consumers may thus hold back their expenditure, hence causing a decrease in demand. [2m]</li> <li>Taken together, this will lead to a fall in equilibrium price.</li> </ul> <p><i>Note: Candidates will be penalised for not linking changes in demand and/or supply to a fall in equilibrium price.</i></p>	
<b>(b)</b>	Using a diagram, explain the effect of the US government’s action in Extract 3 on the consumer expenditure for data plans. [4]
<ul style="list-style-type: none"> <li>Consumer expenditure can be calculated by multiplying the price of each mobile plan by the quantity of mobile plans purchased (i.e. <math>P \times Q</math>)</li> <li>The US government’s action is equivalent to a removal of the price ceiling at <math>P_{max}</math>, evidenced by the “lifting price caps on this uncompetitive sector.” [1m for correct identification of government action from the case]</li> <li>The removal of the price ceiling would allow the market to correct the shortage of <math>Q_3 - Q_1</math> at the initial maximum price of <math>P_{max}</math>. <ul style="list-style-type: none"> <li>Hence there will be a rise in price from <math>P_{max}</math> to <math>P_2</math> and quantity from <math>Q_1</math> to <math>Q_2</math>, resulting in a rise in overall consumer expenditure (CE) from <math>0P_{max}E_1Q_1</math> to <math>0P_2E_2Q_2</math></li> </ul> </li> </ul> <p>[2m for correct identification of initial and final CE, and a recognition of the overall increase in CE.]</p>	

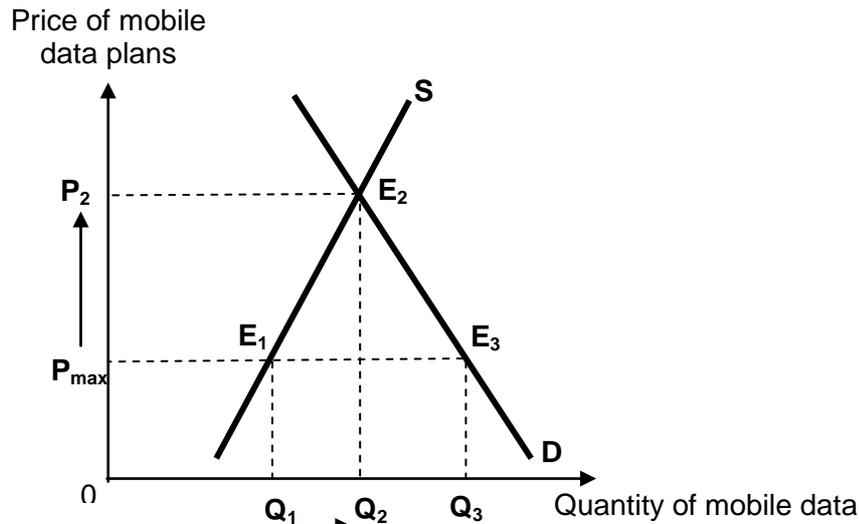


Figure 1: Market for mobile data plans

[1m for correctly drawn and labelled diagram.]

- (c) Suppose a US consumer is choosing between two plans in Table 2.  
Explain what is the opportunity cost of buying the ‘*Sprint Unlimited Basic*’ data plan.[2]
- Opportunity cost is the value of the next best alternative forgone when one buys the ‘*Sprint Unlimited Basic*’ plan. [1m]
  - These forgone benefits are 50GB/month data access and the unlimited Wi-Fi hotspot access at 3G speeds from the T-Mobile Essentials plan. [1m]
- (d) Discuss whether Viettel's diversification strategy or Verizon's pricing strategy is more effective to increase revenue for a telecommunication company. [8]

<b>Command word/phrase</b>	“Discuss”	Provide a balanced view for the two firm strategies before coming to a reasoned judgement
<b>Content</b>	“diversification strategy” “pricing strategy” “increase revenue”	Venturing into other good/service markets Second-degree price discrimination Increase firm’s total revenue which is the product of price and quantity sold
<b>Context</b>	“Viettel”, “Verizon” “telecommunication company”	Strategies employed by these two firms Effectiveness for any telecommunication company

Introduction

- Total revenue for a telecommunication company is given by the product of the quantity of service it sells and the price of the given service.
- A balanced analysis of Viettel's diversification strategy to venture into another service market and Verizon's price strategy of second-degree price discrimination will be provided before reaching a reasoned judgement on their effectiveness.

**Body 1 - Explain how Viettel's diversification strategy can increase total revenue for the firm + Limitations**

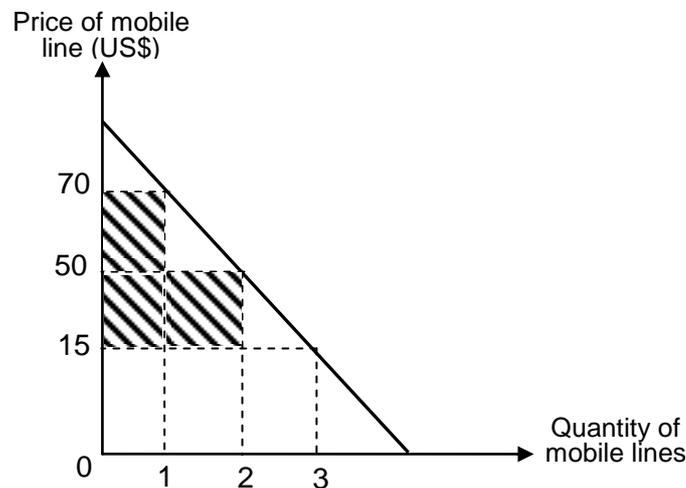
- Viettel sought to increase total revenue by implementing a diversification strategy which it ventured into other service markets such as postal, delivery and ride hailing services.
- By doing so, Viettel is able to increase the sources of consumer demand and as a result, obtain other sources of revenue beyond those arising from its telecommunication services.
- *Limitation:* However, venturing into other service markets means that the telecommunications company is stepping into unfamiliar territory and hence may not provide the quality of service that is competitive with incumbents of those markets. Hence they might experience a lower than expected demand for its service in the ride-hailing and postal markets. As a result, the increase in revenue could be limited.

**Body 2 – Explain how Verizon's pricing strategy can increase revenue for the firm + Limitations**

- Verizon, on the other hand, used a pricing strategy in the form of second-degree price discrimination to increase its total revenue.
- Under second-degree price discrimination, the firm charges lower prices for larger number of units that a consumer buys.
- For Verizon's Start Unlimited plan, one line costs \$70 a month, while two lines cost \$120 a month, three lines cost \$135 a month for three lines.

- Assuming a situation where a consumer purchases 3 mobile lines, Verizon would be able to capture some of the consumer surplus (shaded area) with 2<sup>nd</sup> degree price discrimination compared to the situation where it charges only one price, at US\$15 per line, for all 3 lines. As a result, total revenue increases.

Fig 1: 2nd Degree Price Discrimination



- Limitations (one of the following would suffice):*
  - However, such pricing strategy increases complexity for the consumers which may result in them staying away instead, lowering demand, and hence limit or even reduce total revenue.
  - Also, it is very difficult to estimate the exact demand curve of the market, which can limit the extent to which the revenue actually increases.
  - Not all consumers will have a need for multiple lines. Not all consumers will have large families/close friends networks to tap on for this plan, as friends/families might already be locked into other plans with other companies already.

### Evaluation Conclusion

- [Stand]:** A combination of these strategies could be adopted with the diversification strategy positioned as a longer-term strategy.
- [Situation/Time Frame]:** In Extract 1, it was suggested that “diversification did not bring immediate dividend”. In the short run, diversification strategies are unlikely to be effective strategy as firms’ ability to do so is limited by their “lack of software expertise” to glean insights from the data they have about the other service markets. It was also suggested that “necessary scale (is required) to drive profitability” as firms venture into other service markets. As a result in the short run, second degree price discrimination can be used to increase revenue, as a changing of the prices is much quicker to implement than the entry into a new market.
  - In the long run, as the telecommunication company could then develop appropriate capability to analyse data to identify suitable product development and achieve scaling of these businesses. Diversification would then be a more effective strategy as it brings about more revenue streams which reduces dependence on any one of these streams.
  - [Magnitude]** Moreover, in the long run, diversification is more difficult to copy by other firms than 2<sup>nd</sup> degree price discrimination.

**Mark Scheme**

Level	Knowledge, Application/Understanding, and Analysis	Marks
L2	For a well-developed answer that: <ul style="list-style-type: none"> <li>• is balanced by analysing the how both strategies increase the total revenue for a telecommunication company and their limitations</li> <li>• supports analysis with relevant economics concepts and tools of analysis; and</li> </ul>	4 – 6
L1	For an underdeveloped answer that: <ul style="list-style-type: none"> <li>• is unbalanced, e.g. only how strategies increase total revenue or limitations of the strategies; and/or</li> <li>• lacks economic rigour in the analysis</li> </ul>	1 – 3
E	Up to 2 marks for valid evaluative judgement on the effectiveness of both strategies to increase a telecommunication company's total revenue	1 – 2

**(e)** Discuss whether governments should follow Singapore's example of providing free public Wi-fi. [10]

<b>Command word/phrase</b>	"Discuss"	This is a single policy discussion question
<b>Content</b>	"governments should follow Singapore's example..."	In deciding whether to follow Singapore's policy, the benefits and limitations/ unintended consequences of the policy need to be considered.
<b>Context</b>	"free public Wi-Fi"  "government"	The context is on free public Wi-Fi and therefore Extracts 4 and 5 would come in particularly useful.  There is no context given to the 'other government' in question – can take advantage in your evaluation!

**Introduction**

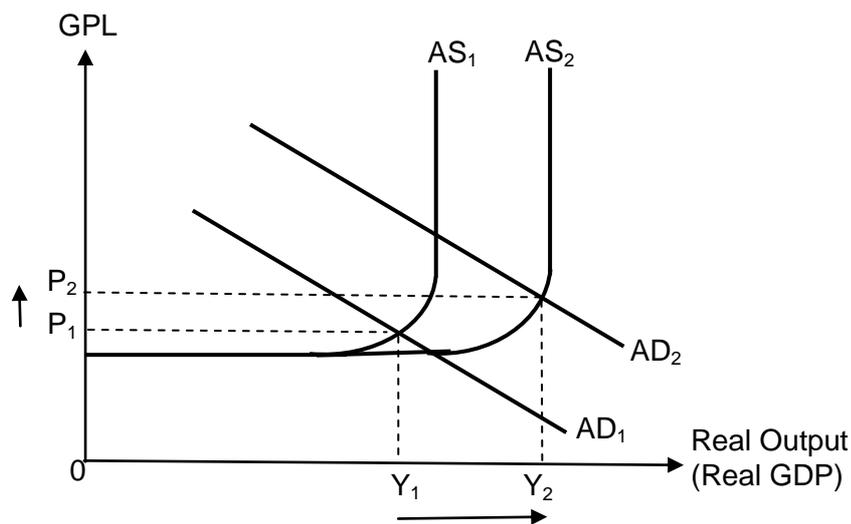
- The provision of free public Wi-Fi can be justified on both macroeconomic and microeconomic grounds, and we can consider the impact in terms of economic growth, efficiency and equity.

***Thesis – choose 1-2 out of the following three arguments:***

**Thesis 1: The promotion of free public Wi-Fi could help to generate sustained growth in the long run.**

- In the short run, the promotion of free public Wi-Fi will require a large amount of Government expenditure on infrastructure to boost connectivity around a city. It could also increase consumption as purchasing of goods become more convenient with online shopping. This, coupled with a multiplier effect where the initial increase in income would lead to further increases in induced consumption, would lead to a rise in AD.
- In the long run, the free public Wi-Fi would increase productivity and innovation among businesses. As mentioned in Extract 4, "Operators can also use Wireless@SG to offer improved services such as cashless payment and location-based analytics," which are all evidences of improved productivity.
  - As the quality of labour and entrepreneurs grow over time, this would lead to a rise in AS as well.

Fig 1: Sustained Growth in the economy



- As seen in the figure above, taken together, the increase in AD and AS would lead to an increase in income from  $Y_1$  to  $Y_2$ , with mild increases in general price levels from  $P_1$  to  $P_2$  – indicating that sustained growth has taken place.

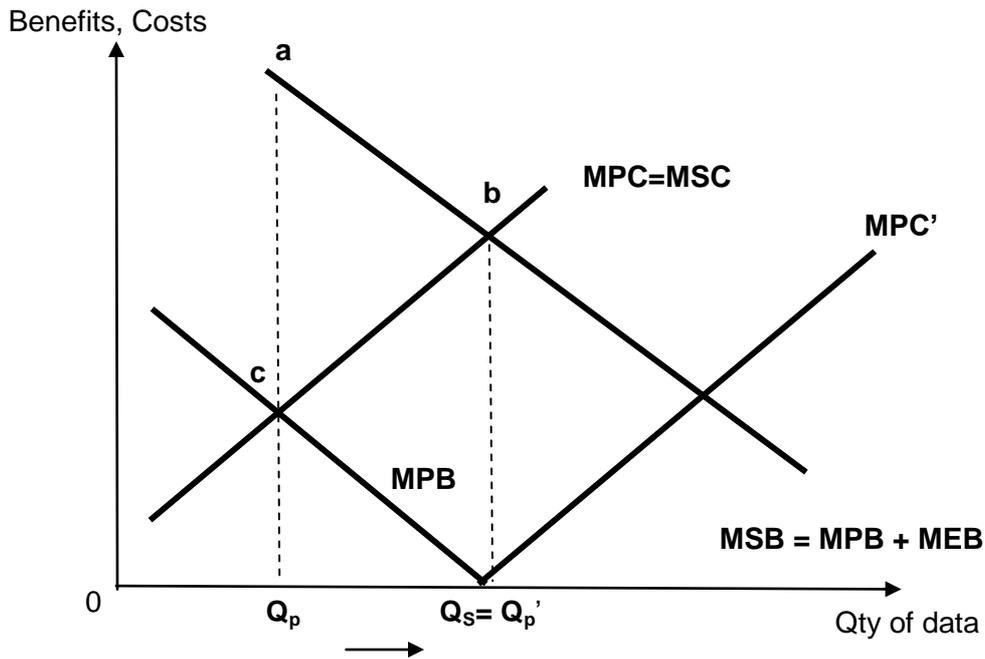
**Thesis 2: The promotion of free public Wi-Fi could help to achieve equity in the market for data access.**

- In developed countries such as Singapore, data can be seen to be a necessity in people's everyday lives as it gives ready access to information for work or entertainment for leisure.
- If this is left to the free market, the price of data may become too expensive for low-income consumers due to the expensive mobile data plans.
- As a result, the low income may not get access to essential government services online (Extract 2 – “cannot avail a single government service today without online intervention”) if Wi-Fi is not readily available. The direct provision of free public Wi-Fi would thus help to increase equity in the market for data access.

**Thesis 3: The promotion of free public Wi-Fi could help to promote greater efficiency by correcting under-consumption due to positive externalities in consumption in the market for data.**

- **<P: Private Decision>** When deciding to consume additional data, the consumer considers only his own private benefit such as the utility of the data, and private cost such as the cost of mobile plans.
- **<E: External Benefit>** However, the use of data results in external benefits as well, such as the increased productivity of the workforce, or new ideas to spur production in other firms.
- **<T: Third Parties>** The firms who were not involved in the consumption of Wi-Fi by workers and are therefore considered third parties.
- **<D>** Due to existence of marginal external benefits (MEB), there is a divergence between Marginal Private Benefits (MPB) and Marginal Social Benefits (MSB) by the amount of MEB. Assuming no negative externalities, Marginal Social Costs (MSC) = Marginal Private Cost (MPC).
- **<Qp vs Qs>** In the free market, out of self-interest, consumers consume  $Q_p$ , where  $MPC = MPB$ . However, the social optimal outcome is  $Q_s$ , where  $MSB = MSC$ . Since  $Q_p < Q_s$ , there is underconsumption of data.
- **<D>** Due to the underconsumption of  $(Q_s - Q_p)$ , society loses benefits of area  $Q_p ab Q_s$ , which is less than the cost -savings of area  $Q_p cb Q_s$ , resulting in a deadweight loss of the area  $abc$ . The price mechanism fails to allocate resources efficiently, the market fails and society's welfare is not maximised.
- As a result, the direct provision of Wi-Fi would cause a fall in MPC, increasing the consumption from  $Q_p$  to  $Q_p' = Q_s$  and removing the deadweight loss, achieving allocative efficiency.

Fig 2: Positive Externalities in data consumption



**Anti-Thesis – choose 1-2 out of the following three arguments:**

**Anti-Thesis 1: Countries should not provide free public Wi-Fi as the gains in equity may not be realised**

- As argued in Extract 5, free Wi-Fi can actually just lead to increased property prices for landlords instead of truly serving the poor. (supported by Extract 5)
- This is because in areas where the free Wi-Fi is stronger, more businesses would sprout up to take advantage of the improved connectivity.
  - For example, a café would be set up in an area where the free Wi-Fi connection is strong and charge relatively expensive prices for its coffee.
  - This would result in the poor still being unable to access the free Wi-Fi because to do so, they would have to dine at the café in the first place.

**Anti-Thesis 2: Countries should not provide free public Wi-Fi as there could be a large opportunity cost involved.**

- There could be a strain on the government budget due to extensive spending on the networks required for free public Wi-Fi to be set up.
  - The opportunity cost of the spending would be any gains in allocative efficiency in merit goods such as education/ healthcare market if the government had chosen to spent the money there.

**Anti-Thesis 3: Countries should not provide free public Wi-Fi as there negative**

**externalities in consumption of the internet.**

This is primary due to the easy access to online activities such as online gaming or online gambling

- **<P: Private Decision>** When deciding to spend an additional hour on online gambling, the consumer considers only his own private benefit such as his potential winnings and private cost such as the cost of data and the money he is gambling. Note that with free Wi-Fi, the private cost would be especially low.
- **<E: External Cost>** However, the consumption of online gambling results in external costs as well, such as the possibility of family members having to pay to fund the consumer's gambling addiction.
- **<T: Third Parties>** The family members of the online gambler are not involved directly in the consumption of online gambling and are therefore considered third parties.
- **<D>** Due to existence of marginal external costs (MEC), there is a divergence between Marginal Private Costs (MPC<sub>actual</sub>) and Marginal Social Costs (MSC) by the amount of MEC.
- **<Q<sub>p</sub> vs Q<sub>s</sub>>** In the free market, out of self-interest, consumers consume Q<sub>p</sub>, where MPC<sub>perceived</sub> = MPB. However, the social optimal outcome is Q<sub>s</sub>, where MSB=MSC. Since Q<sub>p</sub>>Q<sub>s</sub>, there is over-consumption of online gambling.
- **<D>** Due to the overconsumption of (Q<sub>p</sub>-Q<sub>s</sub>), society experiences an additional cost of area Q<sub>p</sub>b<sub>a</sub>Q<sub>s</sub>, which is more than the additional benefits of area Q<sub>p</sub>c<sub>a</sub>Q<sub>s</sub>, resulting in a deadweight loss of the area abc. The price mechanism fails to allocate resources efficiently, the market fails and society's welfare is not maximised, leading to allocative inefficiency.

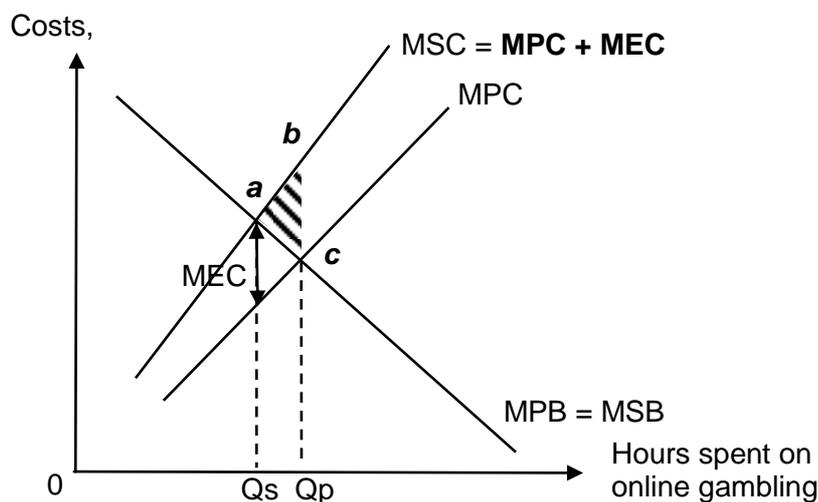


Figure 3: negative externalities from online gambling

**Note: 3 key arguments (2 benefits + 1 cost or 2 costs + 1 benefit) would suffice for the maximum L marks!**

**Evaluative conclusion (a reasoned stand plus a max of 2 ATMS angles would suffice):**

- **[Stand]** The provision of free public Wi-Fi would bring about a set of benefits and costs to a city but the extent of the benefits and costs would differ based on the city in question.
  - **[Situation]** Whether a government should adopt Singapore’s model of free public Wi-Fi depends on the country in question. The opportunity cost may be greater for a less-developed country as they might need to sacrifice spending in other more strategic and urgent sectors that can spur actual economic growth, such as road infrastructure.
  - **[Situation]** One reason why Singapore is able to enact free public Wi-Fi is due to our relatively small size and relative low incidence of absolute poverty. Other cities/countries may face a bigger challenge due to their larger size and the amount of ghettos/undeveloped areas that would be difficult to reach.
- **[Magnitude]** Given that there are potentially both positive and negative externalities arguments involved in the consumption of data, the efficiency argument is relatively weak in helping make a decision and government should focus more on the potential of Wi-Fi to spur growth.
- **[Alternatives]** To ensure that the benefits from free public Wi-Fi are truly realised, governments can have accompanying supply-side policies to enhance the effectiveness of free public Wi-Fi, such as courses for workers and companies on how to leverage on wireless systems to improve productivity.

Level	Knowledge, Application/Understanding, and Analysis	Marks
L2	For a well-developed answer that: <ul style="list-style-type: none"> <li>• is balanced by analysing the benefits of the policy and its costs/unintended consequences;</li> <li>• supports analysis with relevant economics concepts and tools of analysis; and</li> <li>• supports analysis with good use of the case material pertaining to free public Wi-Fi</li> </ul> Note: Candidates will not receive full credit if analysis does not cover both macro and micro aspects.	5 – 7
L1	For an underdeveloped answer that: <ul style="list-style-type: none"> <li>• is unbalanced, e.g. only positive or negative effects of the policy analysed; and/or</li> <li>• lacks economic rigour in the analyses of the benefits/costs of the policy; and/or</li> <li>• lacks use of the case material pertaining to free public Wi-Fi to support analysis.</li> </ul>	1 – 4
E	Up to 3 marks for valid evaluative judgement on the overall effect of impact of free public Wi-Fi to governments.	1 – 3

**H2 CSQ 2**  
**Suggested Answers**

**(a) (i)** With reference to Figure 1, describe the trend in Brazil's volume of exports from 2008 to 2016. [2]

**General trend [1]:** Brazil's volume of exports generally increased from 2008 to 2016

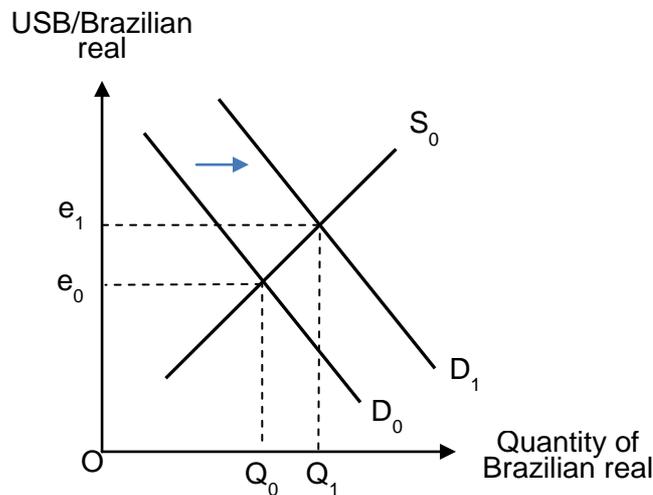
**Refinement [1],** any 1 of the following:

- fluctuated during the period
- largest fall in export volume from 2008 to 2009
- greatest increase in 2010

**(ii)** With the aid of a diagram, explain how the general trend above could have affected the external value of the Brazilian real. [3]

**Increase in demand for the Brazilian real [1]:** As Brazil's export volume generally increased from 2008 to 2016, there will be a general increase in the demand for the Brazilian currency in the same period. This is represented by a rightward shift of the demand curve for Brazilian real from  $D_0$  to  $D_1$  in Figure 4.

**Appreciation of the Brazilian real [1]:** The increase in the demand for the Brazilian currency puts an upward pressure on the external value of the Brazilian currency and results in an appreciation of the Brazilian real, represented by the increase in price of Brazilian real from  $P_0$  to  $P_1$ .



**Figure 4: Market for Brazilian real**

**Accurate diagram** showing increase in demand for the Brazilian currency and the appreciation of the Brazilian currency. [1]

**(b)** Using Figure 2, describe how productivity in Japan has changed since 2015. [2]

- As shown in Figure 2, there was a decline in GDP per hour worked since 2015. [1]
- Therefore, productivity in Japan decreased since 2015. [1]

**(c)** Using a production possibility curve diagram, explain **two** benefits of hosting the Olympics to the host country. [5]

**One benefit of hosting the Olympics is actual growth [2]:**

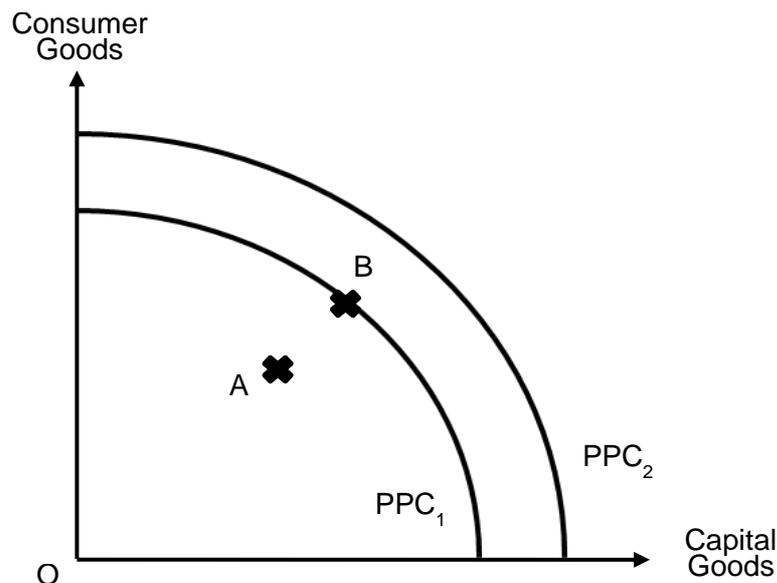
- Greater utilisation of resources [1] to meet the increase in investment and/or government expenditure as a result of hosting the Olympics [1]

**Another benefit of hosting the Olympics is potential growth [2]:**

- Increase in investment and/or government expenditure can increase productive capacity [1], such as infrastructure projects improving the quantity and/or quality of resources available in the economy [1]

**PPC to illustrate actual growth and potential growth [1]:**

- Actual growth: movement from Point A to Point B in Figure 1 (operating within the PPC to operating on the PPC)
- Potential growth: outward shift of the PPC from  $PPC_1$  to  $PPC_2$  in Figure 1



**Figure 1: Production Possibility Curve for Brazil**

\* Cap at 4 marks for explanations involving ONLY potential growth or ONLY actual growth. These answers needed to consider different factors for potential growth or actual growth in order to score 4 marks.

<b>(d)</b>	Assess how far the data provided suggests that hosting the 2020 Olympics will improve Japan's employment rate. [8]
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**Thesis: *The data suggests that hosting the 2020 Olympics can improve Japan's employment rate***

- More labour is demanded in the construction industry, a relatively labour-intensive industry, to support infrastructure projects ahead of the Olympics (Extract 8: "new stadiums, redeveloped urban areas and updated transport networks"), which results in a fall in demand-deficient unemployment
- Anticipated surge in tourist arrivals (Extract 8: "purpose-built hotels" and "tourism boost") may lead to firms hiring more factors of production and the derived demand for labour increases, reducing demand-deficient unemployment
- After winning the bid to host the 2020 Olympics, Japan's unemployment rate has decreased (Figure 2 shows a decline in unemployment rate since July 2014), which suggests that hosting the 2020 Olympics might have contributed to improving Japan's employment rate

**Anti-thesis 1: *The data suggest that hosting the 2020 Olympics does not improve Japan's employment rate***

- While tourism-related industries anticipate a surge in tourist arrivals, past experience might have dampened business confidence (Extract 8: "But the tourism boost that organisers hoped would follow failed to materialise, and the purpose-built hotels struggled to attract guests"), hence firms might refrain from hiring new labour on a permanent basis and instead rely on technology and/or temporary workers

**Anti-thesis 2: *The data is insufficient to conclude that hosting the 2020 Olympics can improve Japan's employment rate***

- While labour is needed in the construction industry to support infrastructure projects, the data does not provide information on the extent of impact on labour employment
  - The construction industry might be driven by new building technologies and the increase in labour employment might not be significant, and/or
  - The construction industry could be reliant on foreign labour instead of the local population
- The data provided does not indicate the extent of impact on permanent employment
  - While more workers might be temporarily hired before the Olympics to build infrastructure as well as during the Olympics to cope with the surge in tourist arrivals, higher unemployment results once the projects are completed and the subsequent contraction in economic activity after the Olympics
- While Figure 2 shows a fall in unemployment rate since July 2014, the data is insufficient to conclude if this was indeed due to hosting the 2020 Olympics or other factors, since no information is given about which industries had expanded and demanded more labour in this period

**Evaluative conclusion**

- **[Stand]** The data provided suggests that Japan’s employment rate might not improve from hosting the 2020 Olympics. The eventual impact depends on
- **[Situation]** The global economic situation plays a large part in determining the extent to which Japan’s employment rate can improve from hosting the Olympics as that would determine the extent of tourist arrivals, for example
- **[Magnitude]** extent to which Japan’s construction industry depends on local workers for the infrastructure projects

Level	Knowledge, Application/Understanding and Analysis	Marks
L2	For an answer that: <ul style="list-style-type: none"> <li>• Provides a rigorous analysis of the positive and negative effects of hosting the 2020 Olympics on Japan’s employment rate</li> <li>• Is well-supported with case material</li> </ul>	4-6
L1	For an answer that: <ul style="list-style-type: none"> <li>• Provides a limited analysis of the positive <u>or</u> negative effects of hosting the 2020 Olympics on Japan’s employment rate</li> <li><b>OR</b></li> <li>• Identifies the positive <u>and</u> negative effects of hosting the 2020 Olympics on Japan’s employment rate with little/no economic analysis</li> <li>• Might or might not have used the case material</li> </ul>	1-3
Level	Evaluation	Marks
E	For a well-reasoned assessment of the extent to which the data provided suggests that Japan’s employment rate will improve from hosting the 2020 Olympics.	1-2

<b>(e)</b>	Discuss whether the decision made by the Bank of England's Monetary Policy Committee (Extract 9) is appropriate for the UK economy. [10]

<b>Command word/phrase</b>	Discuss...  Decision... Appropriate...	Present key points for both sides of the argument (for and against) in detail and come to a conclusion. There should be some evidence of balance, though not necessarily of equal weighting.  The appropriateness of an action would require an analysis of the context in which it is being implemented in in order to determine how the decision would interact with other factors in order to determine the overall impact.
<b>Content</b>	decision made by the Bank of England's Monetary Policy Committee (Extract 9)...	According to extract 9, England's Monetary Policy Committee has decided to raise interest rates. This is a contractionary (interest rate) monetary policy.
<b>Context</b>	UK economy	The UK economy is currently facing: <ul style="list-style-type: none"> <li>• Depreciation of the pound → inflation</li> <li>• Stagnant wage growth</li> <li>• Poor consumer confidence and retail sales</li> <li>• Stalled growth</li> </ul> <p>The UK economy is also expected to grow <b>IF</b> England plays well in the <b>upcoming</b> World Cup</p>

**Introduction**

- The Bank of England's Monetary Policy Committee opted to raise interest rate (Extract 9)
- Context: the UK economy was recovering from a time where "the wider economy stuttered and growth stalled" (Extract 9)

**Thesis: *The decision to raise interest rate can benefit the UK economy***

- Reduce demand-pull inflation: Higher interest rate increased the cost of borrowing, resulting in fall in consumption expenditure and investment expenditure, which leads to a fall in AD and reduces any demand-pull inflationary pressures that the recovering UK economy might be experiencing
- Reduce cost-push inflation: Higher interest rate could make the interest rates in the UK relatively higher than in other countries, resulting in greater hot money inflows and an appreciation of the UK pound as the demand for the UK pound increased. Appreciation helps to reduce imported inflation (Extract 9: "The pound dropped sharply, pushing inflation up." implies appreciation of the pound can reduce inflation)

**Anti-thesis: *The decision to raise interest rate might have a negative impact on the UK economy***

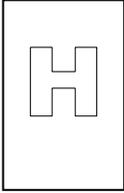
- Recovery in the UK is potentially temporary (Extract 9: “when England play well in the World Cup, England supporters are happier and are more inclined to spend on non-essential items”)
  - In this case, consumption expenditure is a significant component of the UK’s AD (Extract 9: “Britain is generally a consumer powered economy, so when people are buying, growth accelerates.”) and the increase in interest rate was likely to have a significant contractionary impact
- The fall in AD could hamper the economy’s recovery and cause it to slip back into slow/negative growth and raise demand-deficient unemployment

**Evaluative conclusion**

- **[Stand]** Whether the decision to raise interest rate by the Bank of England’s Monetary Policy Committee is appropriate depends on the state of the UK economy.
- **[Situation + Magnitude]** Should the UK economy be operating near/at its productive capacity, the benefits of the Committee’s decision to raise interest rate (i.e. reduce inflationary pressures) would likely outweigh the costs of doing so (i.e. slow/negative growth and higher demand-deficient unemployment), and hence the decision would be appropriate.
- **[Situation + Time frame]** Given the broader economic context of Britain’s exit from the European Union (“Brexit”), however, the UK economy’s long-term economic outlook is likely to be pessimistic and the optimism that followed sporting excellence at the World Cup could be short-lived. As such, the decision to raise interest rate might not be appropriate as it could cause the economy to slip back into a period of weak/negative economic growth, higher demand-deficient unemployment and possibly deflation.

Level	Knowledge, Application/Understanding and Analysis	Marks
L2	For an answer that: <ul style="list-style-type: none"> <li>• Provides a rigorous analysis of the positive and negative effects of higher interest rate on the UK economy</li> <li>• Is well-supported with case material</li> </ul>	5-7
L1	For an answer that: <ul style="list-style-type: none"> <li>• Provides a limited analysis of the positive <u>or</u> negative effects of higher interest rate on the UK economy</li> <li><b>OR</b></li> <li>• Identifies of the positive <u>and</u> negative effects of higher interest rate on the UK economy with little/no economic analysis</li> <li>• Might or might not have used the case material</li> </ul>	1-4
Level	Evaluation	Marks

E	For a well-reasoned assessment of the extent to the decision to raise interest rate is appropriate for the UK economy.	1-3
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TEMASEK JUNIOR COLLEGE  
Preliminary Examination 2019  
General Certificate of Education Advanced Level  
Higher 2

## ECONOMICS

Paper 2 Essays

**9757/02**

**Wednesday 18 September 2019**  
**2 hours 15 minutes**

Additional Materials: One 12 Page Answer Booklet, one piece of writing paper for rough work

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### READ THESE INSTRUCTIONS FIRST

**Do not turn over until you are told to do so.**

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

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

You may use a pencil for any diagrams or graphs.

Rough work can be done directly on the question paper, on the extra piece of writing paper, or in the answer booklet. If rough work is done in the answer booklet, cross it through before handing it in.

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

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

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

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

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



**Temasek Junior College**  
**Economics**

Answer **three** questions in total.

### Section A

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

- 1 (a) Explain why prices of the same soft drinks are usually higher in tourist attractions than in neighbourhood grocery stores. [10]

(b) Some governments are imposing a tax on soft drinks. At the same time, tourist attractions have announced an increase in their entrance fees.

Discuss the impact of these events on consumers and producers of soft drinks. [15]

- 2 In April 2018, as part of an escalating trade war, China imposed tariffs (ranging from 15-25%) on 128 US products (worth US\$3 billion) including fruit, wine, seamless steel pipes, pork and recycled aluminium in retaliation to the US steel and aluminium tariffs on Chinese imports into the USA.

Discuss the potential impact of the US-China trade war on different types of firms in the US. [25]

- 3 Current global policies on e-cigarettes (which mimic smoking by delivering nicotine without the harmful effects of cigarette's tar) range from outright prohibition in Singapore, to largely unregulated market access in the USA. Supporters of e-cigarettes believe they are less harmful than traditional cigarettes and help cigarette users kick the habit. Health lobbyists, meanwhile, argue that the health effects of e-cigarettes are still unclear.

(a) Explain why the Singapore government chose to ban e-cigarettes. [10]

(b) Discuss the factors that might have led to governments' differing approaches in intervening in the market for e-cigarettes. [15]

**Section B**

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

- 4 (a)** Explain the factors that increase the effectiveness of exchange rate centred monetary policy in managing an economy. [10]

- (b)** Discuss the view that exchange rate centred monetary policy should be focused primarily on achieving a low and stable rate of inflation in Singapore. [15]

- 5** In Budget 2017 and 2018, Finance Minister Heng Swee Keat announced increases in diesel tax, Goods and Services Tax (GST) and a new carbon tax. These measures reflect a global shift from direct to indirect taxes as a source of government revenue.

Source: *The Business Times*, 23 February 2017

Assess how a shift from direct to indirect taxes affects the microeconomic and macroeconomic goals of the Singapore government. [25]

- 6** Four decades of breakneck economic growth turned China into the world's biggest carbon emitter. But the government is trying to change that without damaging the economy—and perhaps even use its green policies to become a leader in technological innovation.

Source: *Bloomberg News*, 9 March 2018

- (a)** Explain the factors that contribute to sustainable growth in a country. [10]

- (b)** Discuss how China's pursuit of sustainable economic growth can impact its balance of payments. [15]

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**H2 Essays (9757/2)**

- 1 (a) Explain why prices of the same soft drinks are usually higher in tourist attractions than in neighbourhood grocery stores. [10]
- (b) Some governments are imposing a tax on soft drinks. At the same time, tourist attractions have announced an increase in the entrance fees. Discuss the impact of these events on consumers and producers of soft drinks. [15]

Part (a)

Question Interpretation

<b>Command word/phrase</b>	<i>Explain why</i>	This is a cause-and-effect question, with the effect given and students are required to explain the cause.
<b>Content</b>	<i>Price...higher in... than...</i>	Determined by difference in the level of demand and supply in different contexts, or price setting abilities of the firm(s).
<b>Context</b>	<i>Soft drinks.</i>	This is a necessity, but not without substitutes. (e.g. coffee, tea, mineral water).
	<i>Tourist attractions.</i>	Location tends to be more exclusive with a small number of sellers of a certain product e.g. soft drinks. Tourists have less alternatives to turn to.
	<i>Neighbourhood grocery stores.</i>	Location tends to be open access and offers a larger number of sellers of similar products e.g. soft drinks. Residents / visitors have more alternative to turn to.

Suggested Answer

**Introduction**

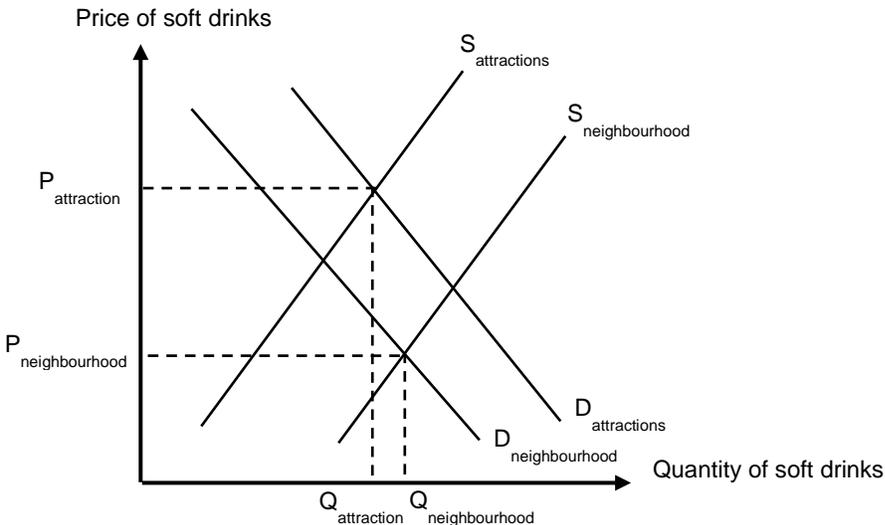
- Prices are determined by the interaction of demand and supply. Soft drink prices are typically higher in tourist attractions than in neighbourhood grocery stores. Differences in the price of soft drinks sold at tourist attractions and neighbourhood grocery stores could be due to differences in demand and supply conditions.

*Setting the context and theoretical framework.*

**Main Body 1 – The price of soft drinks differ in tourist attractions and neighbourhood grocery stores due to demand factors**

- Demand is typically higher in tourist attractions (especially those that are very popular, e.g. RWS) compared to neighbourhood grocery stores. ( $D_{\text{attractions}}$  is higher than  $D_{\text{neighbourhood}}$  in Fig 1). This is due to a higher human traffic flow in tourist attractions compared to neighbourhood grocery stores. It might also be the case that visitors to tourist attractions have higher

*Just one of the factors affecting the level of demand will do.*



**Figure 1: Soft drinks market**

income than average. The ability of tourists to pay for soft drinks is thus generally higher. This causes the demand for soft drinks to be higher in tourist attractions compared to that in neighbourhood grocery stores.

**Main Body 2 – The price of soft drinks differ in tourist attractions and neighbourhood grocery stores because of different supply conditions**

- Supply is typically lower in tourists spots compared to neighbourhood grocery stores. ( $S_{\text{attractions}}$  vs  $S_{\text{neighbourhood}}$  in Fig. 1). This is because some tourist attractions are located far away and can be relatively inaccessible (e.g. mountain resorts), while neighbourhood grocery stores are usually situated along or in nodes of supply chains. Supply is possibly lower in tourist attractions due to it being more difficult to obtain the licence to sell soft drinks in tourist attractions compared to selling soft drinks in a neighbourhood grocery store. In addition, there could be higher cost of production from higher delivery costs to bring soft drinks into tourist attractions (e.g. delivery vehicles need to pay the entrance fee in order to enter Sentosa to deliver soft drinks to RWS).

*Just one of the factors affecting level of supply will do.*

*Providing factors*

**Main Body 3 – PED**

- Also, the demand for soft drinks is likely to be relatively price inelastic in tourist attractions and relatively price elastic in neighbourhood grocery stores. This is because while tourists have fewer alternatives to turn to if soft drink prices are higher in tourist attractions, those who visit neighbourhood grocery stores could always choose to purchase from other firms (e.g. hawker centre, coffee shops, vending machines). Due to the relatively small number of substitutes for soft drinks in tourist attractions, sellers of soft drinks in tourist attractions have higher price-setting abilities compared to the neighbourhood grocery stores.
- Setting a higher price results in a less than proportionate fall in quantity demanded for sellers of soft drinks in tourist attractions since demand is relatively price inelastic. This allows them to earn higher total revenue.
- On the other hand, sellers in neighbourhood grocery stores would experience a more than proportionately increase in quantity demanded should they set a lower price given that demand is relatively price elastic. This allows them to earn higher total revenue.
- Given that the aim of the sellers of soft drinks is to maximise profit, those in tourist attractions would sell soft drinks at a relatively higher price while those in neighbourhood grocery stores would set a relatively lower price.

**Conclusion – bringing demand and supply conditions together**

- As a result of higher demand and lower PED, as well as lower supply in tourist attraction compared to neighbourhood shops, the equilibrium price of drinks in tourist attractions is likely to be higher than in neighbourhood stores. ( $P_{\text{attractions}}$  vs  $P_{\text{neighbourhood}}$  in Fig. 1).

determining PED.

*Explaining the  
different price-  
setting decisions.*

Level	Knowledge, Application/Understanding and Analysis	Marks
L3	<p>For a well-developed essay that</p> <ul style="list-style-type: none"> <li>• compares the levels of demand and supply as well as the PED between the two soft drinks markets to arrive at a logical conclusion of the price of soft drinks sold at tourist attractions being higher than those in neighbourhood grocery stores; and</li> <li>• has sufficient scope by considering the price-setting ability of the sellers in different drinks markets.</li> </ul>	8 – 10
L2	<p>For an underdeveloped essay that</p> <ul style="list-style-type: none"> <li>• uses the economic framework of demand and supply to analyse differences in price between the two soft drinks markets, but with gaps in rigour; and/or</li> <li>• lacks scope when considering demand and supply factors.</li> </ul>	5 – 7
L1	<p>For an undeveloped essay that</p> <ul style="list-style-type: none"> <li>• fails to analyse the differences in prices effectively using economic logic and framework; and/or</li> <li>• states the differences in demand and supply conditions, but do not go on to justify or explain the reason for the differences; and/or</li> <li>• misinterpreted the question and went on to purely analyse why there could be changes in prices of soft drinks in each market; and/or</li> <li>• is severely lacking in scope, with limited factors that account for the difference in price.</li> </ul>	1 – 4

Part (b)

Question Interpretation

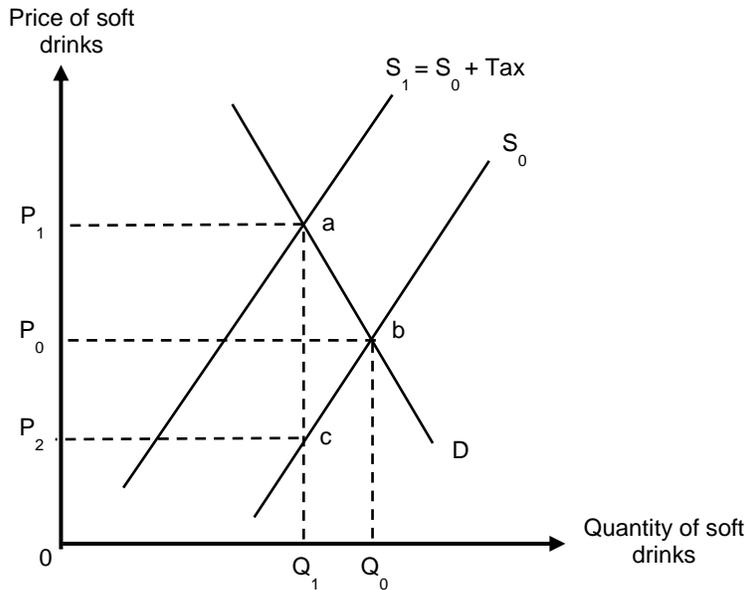
<b>Command word/phrase</b>	<i>Discuss the impact</i>	Various perspectives, outcomes (positive and negative) to be considered.
<b>Content</b>	<i>Impact on consumers and producers of soft drinks</i>	Impact on consumers is assessed by total expenditure, given by the price they pay for each unit of good multiplied by the quantity bought.  Impact on producers is assessed by total revenue, given by the amount that producers receive for each unit of good sold (net of any tax payments) multiplied by the quantity sold.
<b>Context</b>	<i>Tax on soft drinks. Tourist attractions increasing entry prices</i>	Increased cost of production for producers → supply falls.  Tourist attraction tickets are strong complements to soft drinks sold at tourist attractions since the demand for soft drinks is contingent on visitors entering the tourist attraction. Increase in entrance fees → DD for soft drinks fall more than proportionately.

Suggested Answer

**Introduction**

- The events that might affect consumer expenditure and producer revenue are increases in tourist attraction prices and taxes on soft drinks. Total consumers' expenditure is given by the price paid for each unit of soft drinks multiplied by the quantity bought. Producers' revenue is derived by total revenue, given by the amount that producers receive for each unit of soft drinks sold (net of any tax payments) multiplied by the quantity sold.

*Establishing the framework for analysing CE and PR.*



**Figure 2: Impact of tax imposed on soft drinks market**

**Main Body 1 – Impact of tax**

- Tax on soft drinks increase cost of production for producers. Supply falls from  $S_0$  to  $S_1$  (Fig. 2)
- With an increase in price from  $P_0$  to  $P_1$  as a result of the tax, quantity demanded falls less than proportionately (from  $Q_0$  to  $Q_1$ ). (As argued in part (a), demand for soft drinks is likely be price inelastic in tourist attractions). Increase in consumers expenditure due to price increase outweighs the decrease due to fall in quantity demanded. **Hence, consumers expenditure on soft drinks increase from  $P_0bQ_0$  to  $P_1aQ_1$ .**
- However for the producers, they have to pay a tax of  $P_1 - P_2$  on each unit of soft drink sold. Hence, the post-tax revenue is  $P_2cQ_1$ , which was lower than the initial amount they received before tax ( $P_0bQ_0$ ). **Hence, producer revenue on soft drinks falls.**

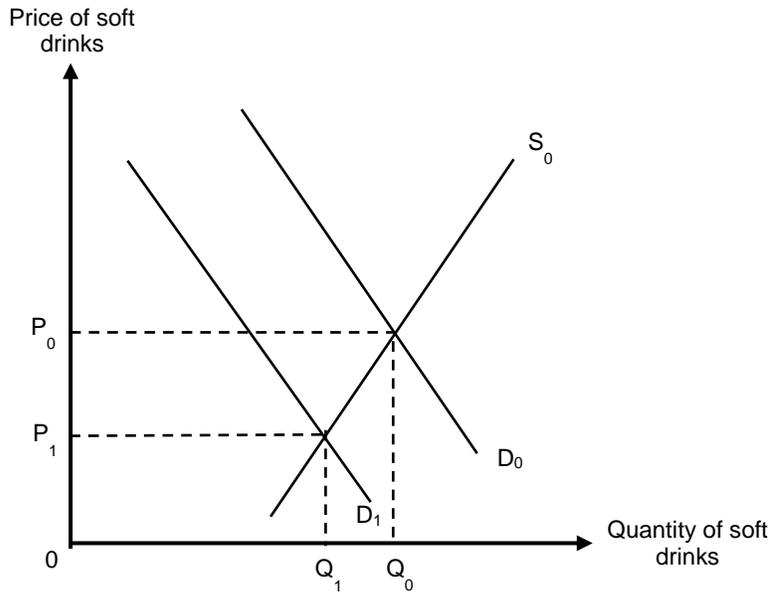
*Impact on consumer expenditure*

*Impact on producer revenue.*

**Main Body 2 – Impact of increase in tourist attraction entrance fees**

- Tourist attractions and soft drinks are strong complementary goods. When visiting tourist attractions, tourists are likely to buy soft drinks to quench their thirsts in the outdoor attractions. **The cross price elasticity of demand (XED) is therefore a negative one, and likely to be larger than one.** XED is defined as the percentage change in demand of a good in response to a change in the price of a related good, ceteris paribus.
- When price of tourist attractions increase, demand for soft drinks may fall from  $D_0$  to  $D_1$  (Fig. 3). As a result, equilibrium price falls from  $P_0$  to  $P_1$ , and equilibrium quantity falls from  $Q_0$  to  $Q_1$  (Fig. 3). **Consumption expenditure and producer revenue both fall from  $(P_0 \times Q_0)$  to  $(P_1 \times Q_1)$ .**

*Establishing relationship between entrance fees and soft drinks.*



**Figure 3: Impact of increasing entrance fees on soft drinks market**

**Evaluative Conclusion**

- **[Stand]** As a result of the imposition of tax and rise in tourist attraction entrance fees, producer revenue is likely to fall. Change in consumer expenditure depends on whether the rise in consumer expenditure due to tax outweighs the effect of fall in expenditure due to more expensive entrance fees.
- **[Magnitude]** However, the fall in soft drink revenue for will likely be more serious for soft drinks sold within the tourist attractions.
  - For the soft drinks sold outside the tourist attractions the XED value is likely to be very small, as few are willing consumers would buy drinks from outside the tourist attractions, given that some tourist attractions impose restrictions on bring food and drinks from outside the attractions.
  - As such, the fall in producer revenue will be less for soft drinks sold outside the attractions, as the fall in their revenue are mainly only affected by the taxes.
- **[Magnitude]** In tourist attractions, due to the strong negative XED between entrance fees and soft drinks, the magnitude of fall in consumer expenditure is likely to overcome the rise in consumer expenditure due to tax, resulting in an overall fall in consumer expenditure.
  - In non-tourist attractions, consumer expenditure is likely to fall as well. Consumers of soft drinks in non-tourist attractions are not very affected by the rise in tourist attraction prices, and given the substitutes available, they have a demand that is price elastic. Hence the tax will cause a more than proportionate fall in quantity demanded and a fall in consumer expenditure.

*Establishing the confirmed effect on PR, and uncertain effect on CE.*

*2 of the following ATMS angles would suffice.*

- **[Assumption]** The above analysis assumes a competitive market. However, the soft drink market is one that is dominated by a few large firms (e.g. F&N, Pokka). To maintain price competitiveness to retain their market share, the firms may choose to absorb the tax and maintain relative prices of the soft drinks. If this is the case, then in markets both inside and outside tourist attractions, consumer expenditure will fall simply due to the effect of a rise in entrance fees.

Level	Knowledge, Application/Understanding and Analysis	Marks
L3	For a well-developed essay that <ul style="list-style-type: none"> <li>• analyses the impact of <b>both</b> events on <b>both</b> consumer expenditure and producer revenue.</li> </ul>	8 – 10
L2	For an underdeveloped essay that <ul style="list-style-type: none"> <li>• lacks scope due to a lack of analysis on either the producer, the consumer or both parties; and/or</li> <li>• lacks scope due to a lack of analysis on their the tax or the tourist attraction price increase; and/or</li> <li>• may contain illogical links in analyses, or conceptual errors.</li> </ul>	5 – 7
L1	For undeveloped answers that <ul style="list-style-type: none"> <li>• are not answering the question, superficial and descriptive, or contains multiple areas of conceptual error.</li> </ul>	1 – 4
Evaluation		
E3	For evaluative comments that provide substantiated evaluative outcomes on <b>both</b> consumer expenditure <b>and</b> producer revenue, based on different situations or assumptions.	4 – 5
E2	For evaluative comments that provide some substantiated evaluative outcomes on consumer expenditure <u>or</u> producer revenue with some consideration of different situations/assumptions.	2 – 3
E1	For unsubstantiated evaluative comments.	1

**2** In April 2018, as part of an escalating trade war, China imposed tariffs (ranging from 15-25%) on 128 US products (worth US\$3 billion) including fruit, wine, seamless steel pipes, pork and recycled aluminium in retaliation to the US steel and aluminium tariffs on Chinese imports into the USA.

Discuss the potential impact of the US-China trade war on different types of firms in the US. [25]

Question Interpretation

<b>Command word/phrase</b>	<i>Discuss</i>	This is a cause-and-effect question but with a requirement for a balance of effects to be presented (i.e. positive and negative effects).
<b>Content</b>	<i>US-China trade war</i>  <i>impact .... on different types of firms</i>	This is the 'cause' and it encompasses both US tariffs on Chinese firms and retaliatory tariffs by China on US firms.  The key 'effect' is the impact on firms in terms of profits. Profits = Total Revenue – Total Costs. Can also consider firm's ability to survive the crisis (whether it might have to shut down)
<b>Context</b>	"firms in the US"	Tap on the preamble to come up with different examples of US firms!

Suggested Answer

**Introduction**

- The US-China trade war encompasses the use of protectionist measures like tariffs by both US and China against each other's goods.
- The impact that the US-China trade war has on different types of firms in the US will depend on the whether it is an **exporter of goods to China**, an **importer of goods from China** or a **firm which produces substitutes of goods from China**. It is also possible to differentiate in terms of small and large firms, domestically-oriented firms and export-oriented firms, as well as the nature of the product that the firm sells.

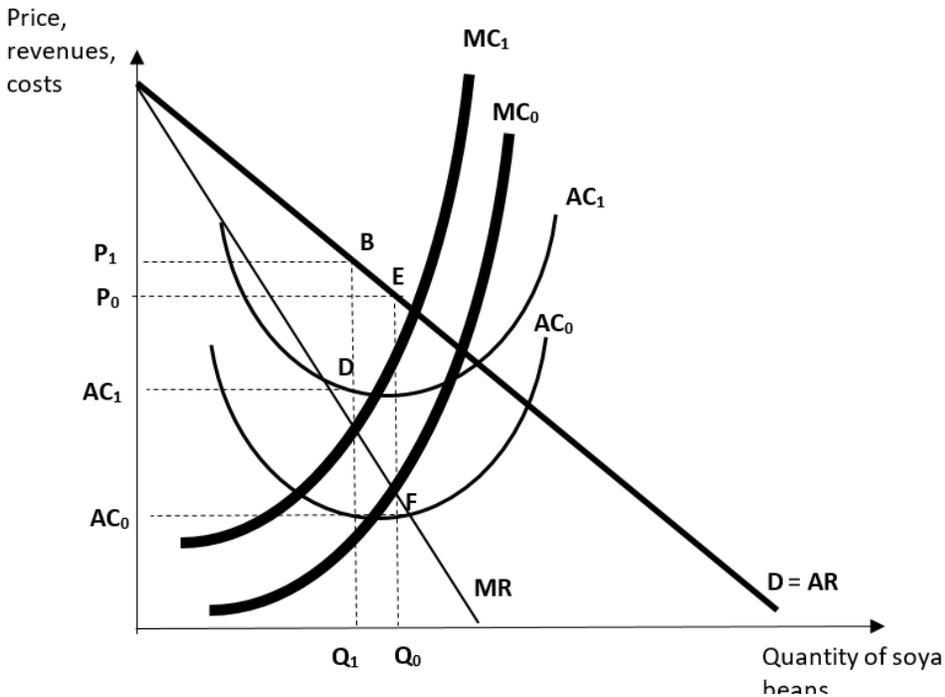
**Body 1: Impact of trade war on US firms which export goods to China**

- Firstly, with the US-China trade war, US firms which export goods to China (e.g. US farmers who sell fruits, wine and soya beans to China) would face tariffs imposed on their goods that enter China. These tariffs would add on to their costs of production and would raise their average costs. The AC curve of such a firm would shift up from  $AC_0$  to  $AC_1$  and its MC would shift up from  $MC_0$  to  $MC_1$ .

*Outline what constitutes a trade war*

*Outline the types of firms to be analysed*

*Many students modelled this as a fall in demand instead of a rise in costs leading to a fall in quantity demanded. To*



**Figure 4: Impact of increasing costs of production on US firm**

- Originally, the output of the firm was at  $Q_0$  where  $MC_0 = MR$  and the price was at  $P_0$ . The supernormal profit of the firm was represented by the area  $P_0EFAC_0$ . However, after the increase in the AC, the output of the firm is at  $Q_1$  and the price is at  $P_1$ . The supernormal profit of the firm has decreased and is now represented by the area  $P_1BDAC_1$ .
- **[Alternative + Magnitude]** However, the extent of this negative impact on the profits of the firm might not be so significant if these US firms take steps to diversify their markets. If successful, the demand for their products might not fall that significantly and their revenues and profits might only see a slight drop.
  - For example, US soya bean producers are currently trying to sell more of their products to other markets such as the European Union, Middle East and North Africa.
  - Furthermore, they are also trying to develop domestic demand by producing new varieties that are suitable for domestic use.
  - Another strategy that some of these firms are considering is to switch to producing another crop instead, like corn.

*figure out why AC and MC increases, go back to your DD/SS basics – a tax would cause supply to shift, not demand!*

*Notice how there is a chance for intermediate evaluation here? Basically, we are questioning whether profits will really fall!*

**Body 2: Impact of trade war on US firms which import factors of**

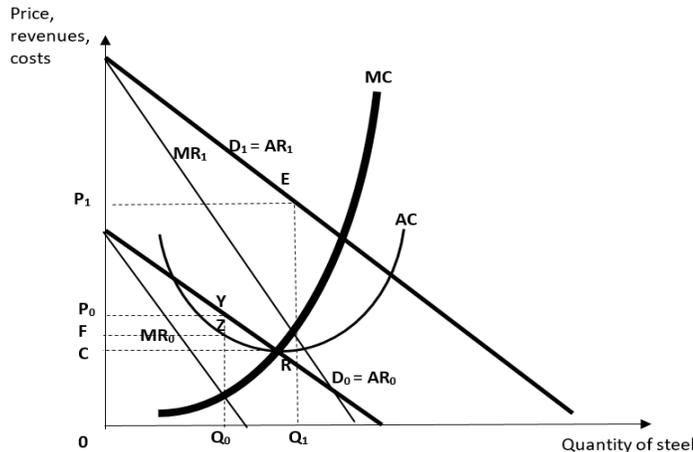
**production from China**

- Similar to US firms which export goods to China, US firms who import factors of production from China would also face a similar rise in their average costs. This is because these US firms would face tariffs imposed on their products by the US government. These tariffs would similarly add on to their costs of production, raise their average costs and reduce their profits, with the diagrammatic analysis similar to Figure 4 above.
  - For example, many of the US automakers who import steel and aluminium from China face a rise in the cost of their factor inputs.
- **[Alternative + Magnitude]** In order to reduce the negative impacts of these tariffs, US firms can try to source for cheaper domestically produced substitutes for these factor inputs or to find substitutes from countries outside of China. They could also try to slash costs via other ways such as to increase efficiency of their production via R&D. If successful, all these would help to offset some of the rise in their AC and the fall in profits would not be so drastic.
- **[Alternative + Magnitude]** How much of the tariffs these firms need to absorb may also depend on how they are able to pass on the higher prices to US consumers.
  - Passing a substantial portion of the tariff cost to consumers might be difficult for auto firms given that the demand for cars from a particular brand like Ford, tends to be quite price elastic as there are many close substitutes of cars from other well-known brands like Toyota.
  - When price increases, quantity demanded for its cars falls by more than proportionately, causing total revenue to fall.

*Once again, ATMS is used here to question whether profits will really fall.*

**Body 3: Impact of trade war on US firms which produce substitutes of factor inputs from China**

- Next, domestic producers who produce substitutes of factor inputs from China might gain. When the price of steel from China rises due to the imposition of tariffs by the US, quantity demanded for Chinese steel in the US drops.
- As steel from China and steel made in the US are goods in competitive demand with a positive XED value, this will cause US firms that use such steel in their production processes to switch to using US steel instead. The demand for US steel produced by a US steel firm will increase and the demand curve for its product will shift to the right from  $D_0 = D_1$



**Figure 5: Impact of increasing revenue on US firm**

- Originally, the output of the firm was at  $Q_0$  where  $MC = MR_0$  and the price was at  $P_0$ . The supernormal profit of the firm was represented by the area  $P_0YZF$ . However, after the increase in the demand, the output of the firm is at  $Q_1$  and the price is at  $P_1$ . The supernormal profit of the firm has increased and is now represented by the larger area of  $P_1ERC$ .

**Body 4: Impact of the trade war would differ based on the size of firms**

- Given that many US firms will be facing a fall in their profits during the US-China trade war, how well they can survive also depends on the size of the firm and the nature of the industry that they belong to.
- Big firms, which tend to be oligopolistic firms and monopolies, survive better than smaller ones during times of recession because they are able to earn supernormal profits even in the long run. Firms which belong to an oligopolistic or monopolistic market structure are able to accumulate supernormal profits and can use these reserves to cushion the fall in revenue during a recession, making them less likely to shut down during the trade war as compared to monopolistically competitive firms.
  - They are able to earn supernormal profits even in the long run because in oligopolies, there are high barriers to entry that prevents the entry of new firms which might have been attracted to the supernormal profits that firms earn in the industry. With excess profits from previous years acting as a buffer, the firm may not earn subnormal profits and therefore is able to better survive the trade war. For example, the large US auto firms like Ford and General Motors have been enjoying high profits for years before Trump's trade war and are unlikely to shut down despite their profits being squeezed.
  - On the other hand, smaller firms (e.g fruit/pork sellers) that are more monopolistically competitive in nature would earn normal profits in the long run. When tariffs are applied to their exports, they might end up earning subnormal profits and shutting down.

*Note that Body paragraphs 1-3 would give you excellent scope already and Body 4 and 5 are different extensions to the firm analysis that you can consider. However, to get a mid L3, Body 1-3 would suffice!*

**Body 5: Impact of the trade war would differ based on YED of the firms**

- It is very possible that this trade war leads to a recession in the US. This is because, as prices of US products increase in China, assuming demand for US exports is price elastic, quantity demanded for them will fall by more than proportionately and the export revenue of the US will fall. (X-M) falls, AD decreases and there will be a multiple fall in real national income via the reverse multiplier effect, resulting in a recession in the US.
- There could be a similar recession sparked in China due to the trade war as well as the trading partners of these countries due to the beggar-thy-neighbor effect. This could very well mean a global recession. **The effect of this recession induced by the trade war would have varying effects on different US firms, depending on the type of products that they sell.**
  - For example, firms that sell luxury goods like luxury watches would have a large and positive YED value and would notice a more than proportionate fall in the demand for their products, causing the demand curve for their goods to shift significantly towards the left and therefore their revenues and thus, profits to be reduced to a relatively large extent.
  - On the other hand, firms that sell necessities like bread, would have a smaller and positive YED value, and would notice a less than proportionate fall in the demand for bread, causing their revenues and profits to fall, but by a relatively smaller extent as compared to firms which sell luxury goods.
  - Finally, firms that sell inferior goods that sell basic models of mobile phones, would have a negative YED value, and might see the demand for their goods and therefore their revenues and profits to rise instead.

**Evaluative Conclusion**

- **[Stand]** Generally, the impact of the US-China trade war on firms in the US would be negative for most firms, with the exception of US substitutes to China's imports.
  - **[Magnitude]** For example, even though it is possible for US soya bean exporters to use different strategies to limit a fall in its demand, it would be difficult to completely negate the effect of the large fall in profits by selling less to China, which has been a major buyer for many years. According to an article from the Wall Street Journal, in 2017, China bought 57% of all U.S. soybeans that were exported, more than eight times the total sold to Mexico, the next-biggest buyer by quantity.

*A reasoned stand plus 2 of the following ATMS angles would suffice.*

*If you are able to quote facts such as those underlined, great! But don't worry too much if you don't have such general knowledge 😊*

- **[Time Frame]** Furthermore, even though it was mentioned that domestic steel producers would benefit in terms of revenues and profits, a protracted trade war, which might even extend beyond the time that President Trump is in office, could mean that the global economy, including the US enters a recession. This could cause a sharp fall in the derived demand for steel when incomes fall.
  - Even for the large firms that have large accumulated profits to cushion their losses, a recession would result in their reserves eventually run out and such firms might eventually have to shut down.
- **[Assumption]** However, in this essay, we have assumed so far that the US-China trade war would not be resolved. If resolved via a trade treaty where China removes its tariffs on US exports, it is highly possible that the various firms in the US would benefit significantly instead as their exports to China become more competitive as compared to before.

Level	Knowledge, Application/Understanding and Analysis	Marks
L3	For a well-developed answer that: <ul style="list-style-type: none"> <li>• contains rigorous explanations of the impacts on US exporters to China, US importers of goods from China as well as US producers of domestic substitutes of goods from China); and</li> <li>• shows balance with consideration of both the positive and negative impacts of the trade war on different types of firms.</li> </ul>	15 – 20
L2	For an under-developed answer that: <ul style="list-style-type: none"> <li>• has insufficient scope in answer (did not address impacts on US exporters to China, US importers of goods from China as well as US producers of domestic substitutes of goods from China); and/or</li> <li>• shows a lack of balance (e.g. only negative impacts analysed; and/or</li> <li>• has insufficient rigour in answer</li> </ul>	9 – 14
L1	For an undeveloped answer that is very limited in scope and has serious conceptual errors and gaps in explanations.	1 – 8
<b>Evaluation</b>		
E3	For an answer that uses competent economic analysis to support an evaluative judgement on the impact of the US-China trade war on different types of US firms	4 – 5
E2	For an answer with some economic analysis (either incomplete or with some inaccuracies) to support an evaluative judgement on the impact of the US-China trade war on different types of firms in the US	2 – 3
E1	For an answer that provides an unsupported evaluative statement on the impact of the US-China trade war on different types of firms in the US	1

- 3** Current global policies on e-cigarettes (which mimic smoking by delivering nicotine without the harmful effects of cigarette's tar) range from outright prohibition in Singapore, to largely unregulated market access in the USA. Supporters of e-cigarettes believe they are less harmful than traditional cigarettes and help cigarette users kick the habit. Health lobbyists, meanwhile, argue that the health effects of e-cigarettes are still unclear.
- (a)** Explain why the Singapore government chose to ban e-cigarettes. [10]
- (b)** Discuss the factors that might have led to governments' differing approaches in intervening in the market for e-cigarettes. [15]

Part (a)

Question Interpretation

<b>Command word/phrase</b>	<i>Explain why</i>	To give a thorough explanation on why the market failed in the case of e-cigarettes
<b>Content</b>	<i>ban</i>	Demerit good, negative externalities and imperfect information Show how ban works
<b>Context</b>	<i>e-cigarettes</i>	Contextualise to the e-cigarettes market

Suggested Answer

**Introduction**

- E-cigarettes are deemed a demerit good in Singapore, considered by the government to be socially undesirable and will be overconsumed if left to the free market. The two sources of market failure in e-cigarettes are negative externalities and imperfect information. The Singapore government has deemed it necessary to ban the good due to the large extent of negative externalities and/or imperfect information.

*Define demerit good and explain essay approach*

**Body 1: Contextualise market failure in e-cigarettes using PET**

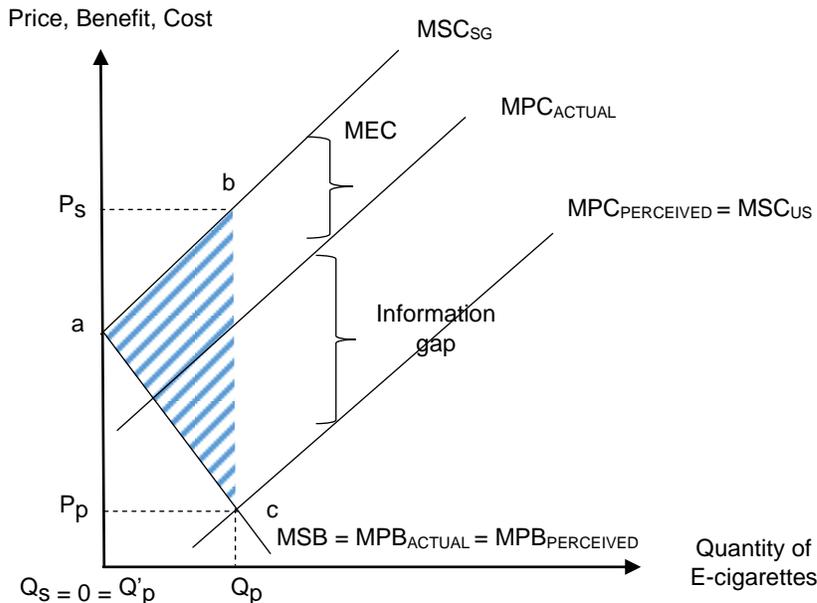
- <P: Private Benefits/Costs>** When consuming e-cigarettes, consumers consider only their own private benefits, such as the satisfaction derived from inhaling nicotine, and private costs, such as the cost of the e-cigarettes as well as healthcare costs associated with the activity.
- <E: Externalities>** Negative externalities refer to external costs incurred by third parties arising from consumption of e-cigarettes including the lower productivity from health-related issues, affecting the productivity and revenue of third parties not directly involved in the economic transaction, **<T: Third Parties>** such as fellow workers and employers.
- In addition, information failure results from myopic decision-making on the part of e-cigarette smokers, who tend to underestimate or ignore the full private costs, including long-term health risks such as developing lung

*Contextualise private benefits and costs as well as externalities and third parties for the e-cigarette market*

*Contextualise information failure to e-cigarette market*

cancer.

**Body 2: Compare private and social optimal outcomes in market for e-**



**Figure 6: Market failure in e-cigarettes with ban imposed**

**cigarettes using DQQD**

- **<D: Divergence>** In Figure 4, the existence of negative externalities creates a divergence between the Marginal Private Costs (MPC) and the Marginal Social Costs of Singapore ( $MSC_{SG}$ ). As consumers also underestimate the full private costs of e-cigarettes, they perceive the MPC to be lower than what it actually is. Diagrammatically, the  $MSC_{SG}$  curve lies above the  $MPC_{ACTUAL}$  by the amount of the Marginal External Costs (MEC), and the  $MPC_{ACTUAL}$  curve lies above the  $MPC_{PERCEIVED}$  curve by the extent of the information gap. Assuming that there are no positive externalities, Marginal Private Benefits (MPB) = Marginal Social Benefits (MSB).
- **<Qp: Private quantity>** Left to the free market, the consumers consume  $Q_p$  units of the e-cigarettes, where  $MPB_{PERCEIVED} = MPC_{PERCEIVED}$ , as they only consider their perceived private costs and benefits.
- **<Qs: Socially Optimal Quantity>** However, the social optimal level of consumption is  $Q_s$  units, where  $MSB = MSC_{SG}$ . Since  $Q_p > Q_s$ , there is an overconsumption of E-cigarettes.
- **<D: Deadweight Loss>** At  $Q_p$ ,  $MSC_{SG} > MSB$ . The additional unit of E-cigarettes consumed adds more to society's costs than to society's benefits. From  $Q_p$  to  $Q_s$  units, the total social costs (area  $Q_sabQ_p$ ) exceeds the total social benefits (area  $Q_sacQ_p$ ). The shaded area abc represents the deadweight loss which is the reduction of net benefits to society when E-cigarettes are not consumed at the social optimal level. The price mechanism fails to bring about a socially optimal allocation of resources and the market fails.

Draw and label diagram accurately. To save time, the same diagram is also used for Part (b).

Explain how deadweight loss arises from market failure in the e-cigarette market

**Body 3: Explain how ban works and why the Singapore government banned e-cigarettes**

- A ban can be seen as a quota where the output is set at zero. The imposition of a ban is socially optimal when the divergence between MSC and MPC perceived is very large such that MSB intersects MSC where the social optimal quantity is zero. This is why the Singapore government deemed it necessary to ban e-cigarettes, resulting in  $Q^p=0$ , so as to remove the deadweight loss and achieve allocative efficiency.

*Answer the question on why the Singapore government chose to ban e-cigarettes*

Level	Knowledge, Application/Understanding and Analysis	Marks
L3	For a well-developed answer that: <ul style="list-style-type: none"> <li>• provides a clear and developed explanation of how the market for e-cigarettes can fail (negative externalities and imperfect information); and</li> <li>• explains how a ban works to solve the market failure.</li> </ul>	8 – 10
L2	For an under-developed explanation that: <ul style="list-style-type: none"> <li>• explains the market failure due to only either negative externalities or imperfect information; and/or</li> <li>• does not include explanation of how the ban works; and/or</li> <li>• contains multiple gaps in conceptual accuracy or rigour.</li> </ul>	5 – 7
L1	For an undeveloped answer that is generally descriptive in nature, has serious misconceptions or with limited reference to any economic framework.	1 – 4

Part (b)

Question Interpretation

<b>Command word/phrase</b>	<i>Discuss</i>	To present arguments in detail and come to a conclusion
<b>Content</b>	<i>Factors Governments' differing approaches</i>	Cost, benefits, information, constraints, perspectives (DM Framework)  Ban vs Unregulated market
<b>Context</b>	<i>e-cigarette market</i>	Both e-cigarette and traditional cigarette market are relevant

Suggested Answer

**Introduction**

- As explained in part (a), the Singapore government has chosen to ban e-cigarettes. On the other hand, the US government has left the market largely unregulated. This essay discusses the factors that could explain these two vastly differing approaches, using the Decision-making Framework.

*Make links to part(a), reference the preamble and state the approach.*

**Body 1: Differing views on costs of e-cigarettes**

- The first factor that might have led to the governments' differing approaches could be their differing views on the costs of e-cigarettes. As shown in Figure 6, the Singapore government's view is that e-cigarettes exert a very high cost on society, and the divergence between MPC and  $MSC_{SG}$  is so large that the socially optimal quantity is one that is close to or at zero, thus justifying an outright ban on the market.
- The US government, meanwhile, may consider the MPC to be equal to the  $MSC_{US}$  (or have negligible divergence) due to a perceived lack of negative externality and information failure, so that the private quantity is the same or close to the socially optimal outcome. This results in USA's decision to keep the market largely unregulated. Intervening would result in more cost to society in the form of higher deadweight loss than not intervening at all.

*Use DM Framework, and always include Costs and Benefits as main factors to differentiate policies.*

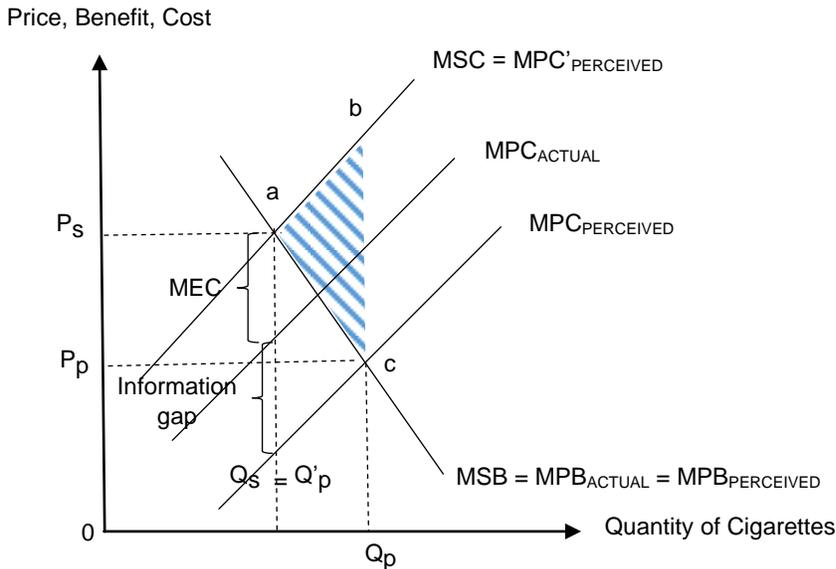
**Body 2: Differing views on benefits of e-cigarettes**

- The two governments may also have very different views on the benefits of e-cigarettes. The US government may consider e-cigarettes to not only be harmless, but useful in the fight against smoking. Concerned about market failure in the traditional cigarette market, it may be encouraging e-cigarettes as an alternative to cigarettes. Healthcare providers have touted e-cigarettes as an effective way of helping smokers quit their habit. By making e-cigarettes an attractive alternative to cigarettes, this increases the opportunity cost of smoking traditional cigarettes, thus shifting the

*Consider how e-cigarettes affect the market failure in the traditional cigarette market.*

$MPC_{PERCEIVED}$  to  $MPC'_{PERCEIVED}$  in the market for cigarettes, towards the MSC, achieving socially optimal outcome, as shown in Figure 7.

- In contrast, Singapore might view any benefits in the cigarette market to be minimal. This is because high taxes already being levied on the market for cigarettes, the MPC in Singapore is much closer to MSC, minimising the deadweight loss in the cigarette market for Singapore.



**Figure 7: Increasing opportunity cost in the cigarette market**

**Body 3: Differing levels of constraints**

- Singapore faces little constraints in implementing a ban as it has an effective regulatory and monitoring system to ensure compliance and to prevent black market activities. The society is also generally compliant and less likely to view the ban as a challenge to their right to consume e-cigarettes. The number of people affected by the ban is also smaller as e-cigarettes have not taken off yet in Singapore, making it easier to ban the good.
- The US government meanwhile, may find it harder to implement a ban even if they consider e-cigarettes to be harmful as the country is much bigger with more porous borders, increasing the likelihood of smuggling and black market activities. The number of people affected may be large and this move could be politically unpopular. Moreover, a ban entails high monitoring costs which might stretch policing resources in the US, which already faces huge budgetary constraints.

*Explain a third factor that governments might have considered.*

*Some students considered the implementation costs of the policies instead and this was accepted as well.*

**Evaluative Conclusion**

- **[Stand]** In making the decision on e-cigarette market intervention, governments will weigh factors such as costs, benefits, constraints and information.
- **[Magnitude]** The most important factor leading to the government's differing approaches is likely to be the constraints. If a government faces funding limitations that impede its ability to administer a ban, it is unlikely to do so even if it deems e-cigarettes to be harmful.
- **[Time Frame]** Factors that government consider most important will change with time as more information becomes available. Perspectives of economic agents especially users will become more important to governments as they take into account new information on benefits of e-cigarettes and consider the likelihood of government failure.

*Cheat code: This stand can be used for questions on Factors to consider when making decisions*

Level	Knowledge, Application/Understanding and Analysis	Marks
L3	For a well-developed answer that: <ul style="list-style-type: none"> <li>• provides a rigorous and balanced analysis that demonstrate understanding of factors that might have led to governments' differing approaches in intervening in the market for e-cigarettes, using the DM Framework; and</li> <li>• includes relevant real-world examples of policies throughout the essay to effectively support the analysis.</li> </ul>	8 – 10
L2	For an under-developed answer that: <ul style="list-style-type: none"> <li>• lacks scope and/or rigour in discussing the factors that might have led to governments' differing approaches in the market for e-cigarettes; and/or</li> <li>• lacks effective use of relevant real-world examples to support the analysis.</li> </ul>	5 – 7
L1	For an undeveloped answer that shows some knowledge of the factors that might have led to governments' differing approaches in intervening in the market for e-cigarettes.	1 – 4
Evaluation		
E3	For an answer that substantiates the <i>relative</i> importance of the various factors using analysis. Real world knowledge, weighing criteria, and challenging the assumptions underlying economic theories are used consistently in the weighing of the factor.	4 – 5
E2	For an answer that makes some attempt at a judgement on the factors governments might have considered when deciding on the different approaches to the intervention in market for e-cigarettes.	2 – 3
E1	For an answer that gives an unsupported evaluative statement(s) that addresses the question.	1

- 4 (a)** Explain the factors that increase the effectiveness of exchange rate centred monetary policy in managing an economy. [10]
- (b)** Discuss the view that exchange rate centred monetary policy should be focused primarily on achieving a low and stable rate of inflation in Singapore. [15]

Part (a)

Question Interpretation

<b>Command word/phrase</b>	<i>Explain the factors</i>	This is a cause-and-effect question, with 'causes' being the main points of explanation.
<b>Content</b>	<i>increase the effectiveness of exchange rate centred monetary policy (ER MP)</i>	Knowledge on exchange rate centred monetary policy and what determined its effectiveness.
<b>Context</b>	<i>managing an economy</i>	No particular context specified by question but students are expected to consider specific aims of ER MP when explaining the factors.

Suggested Answer

**Introduction**

Exchange rate centred monetary policy manages the economy through the control of the exchange rate. In order for it to be effective, we consider the following factors:

**Key arguments (picking 3-4 factors from the list below would suffice!)**

- **The openness of the economy.** As exchange rate monetary policy affects net exports most directly, the relative significance of net export to the other components of aggregate demand (AD) will determine the extent it will affect AD. Suppose the government wanted to raise actual growth, it will implement an expansionary exchange rate policy by depreciating the home currency. This will make exports more competitive and imports more expensive. Foreigners will buy more exports and locals will seek domestic alternative to imports. Assuming that the Mashall-Lerner Condition (MLC) holds, net exports will rise. If net export is a large component of AD relative to the other components, the expansionary exchange rate monetary policy will be more effective in raising actual growth.

*Unpack terms and scope essay*

*Explain how openness of an economy affects the effectiveness of ER MP. This point is similar to reliant on external sector.*

- **The Marshall-Lerner Condition (MLC).** The MLC holds when the sum of  $PED(X)$  and  $PED(M)$  is greater than one. This would mean that for any change in exchange rate, the desired corresponding effect on net export will be realised and will affect AD accordingly. Suppose that the government wanted to reduce inflation, it can implement a contractionary exchange rate monetary policy by appreciating the exchange rate. This will make exports more expensive and imports cheaper. If ML condition holds, it will trigger a corresponding fall in net exports and subsequently a fall in AD.  
*Explain how MLC affects the extent of ER MP's effect on net exports and on AD.*
  - **The size of multiplier.** Any change in the component of AD will work through the multiplier to cause a greater change in AD itself. The bigger the multiplier, the bigger the change in AD, which raises the effective of the exchange rate, centred monetary policy to achieve its intended objective. Countries with relative high Marginal Propensity to Consume (MPC) or relatively low Marginal Propensity to Save (MPS), Marginal Propensity to import (MPM) and Marginal Propensity to Tax (MPT) will have a larger multiplier. Suppose there is an increase in  $(X-M)$ , a greater proportion of the increase will be spent on domestic consumption rather than leaking out of the circular flow, triggering more rounds of domestic consumption that leads to a greater rise in AD and actual growth.  
*Explain how the multiplier affects the extent a change in net-exports have on AD.*
  - **Economic conditions of foreign countries.** The extent to which foreign countries respond to a change in the home country's exchange rate depends on the economic conditions that these countries are going through presently. A depreciation of the domestic currency is likely to be more effective in achieving its intended effect of boosting net-exports and AD if other countries are not suffering from recession or poor economic outlook, which may deter them from consuming imports. Similarly, the effect of an appreciation to reduce net-exports is also strengthened if other countries are not facing a boom and become more likely to reduce consumption of imports.  
*Explain how the external sector influences the effect of ER MP on a country's net-exports*
  - **Availability of foreign reserves (This factor is only applicable to contractionary policies).** Any change in the exchange rate requires the central bank to intervene in the foreign exchange market. While it is technically possible for the central bank to sell its own currency continually and gain foreign reserve to depreciate its exchange rate, the central bank can only appreciate its exchange rate provided it has sufficient foreign reserves. The amount of foreign reserve that a central bank has will limit the extent that it could support the appreciation of its own currency to achieve its objectives.  
*Explain how the amount of foreign reserves affects the extent a central bank's ability to appreciate the currency.*
- Explain how time lags affects the*

- **Time lags in terms of recognition, implementation and impact lags.** Effectiveness of policies will depend on how timely the government recognise the problem to be fixed and for the government to intervene and adjust the exchange rate accordingly. Furthermore, after adjustment of the exchange rate, it takes time for exports and importers to respond and adjust their inventories.

*effectiveness of ER MP. (This is a minor point as this applies to all policies)*

Level	Knowledge, Application/Understanding and Analysis	Marks
L3	For a well-developed answer that: <ul style="list-style-type: none"> <li>• fully explains how the factors will increase effectiveness of ER MP clearly in relation to the specific aims that ER MP is trying to achieve.</li> </ul> <i>(Note: at least 3 factors required to access L3 marks)</i>	8 – 10
L2	For an underdeveloped answer that: <ul style="list-style-type: none"> <li>• attempts to explain the factors and how it affects the effectiveness of ER MP with no relation to specific aims</li> </ul> <b>OR</b> <ul style="list-style-type: none"> <li>• provides a weak explanation of the factors in which the application of the factor in the explanation is cursory</li> </ul>	5 – 7
L1	For an undeveloped answer that has limited/no application of relevant economic concepts, and/or contains conceptual errors and descriptive treatment of answer	1 – 4

Part (b)

Question Interpretation

<b>Command word/phrase</b>	<i>Discuss the view</i>	To provide a balanced response to the view presented in the question.
<b>Content</b>	<i>exchange rate monetary policy  achieving low and stable rate of inflation</i>	Knowledge of exchange rate monetary policy and how it achieves low and stable of inflation and other macro goals, such as actual growth, low unemployment and healthy balance of payment.  The benefits of low and stable rate of inflation.
<b>Context</b>	<i>Singapore</i>	It would be useful to have some knowledge of the conditions surrounding Singapore that could determine its monetary policy focus

Suggested Answer

**Introduction**

- While an exchange rate monetary policy (ERMP) can achieve a low and stable rate of inflation in Singapore, it may lead to harmful unintended consequences. Furthermore, ERMP can also achieve other macroeconomic aims such as actual growth and healthy BOP. This essay will discuss if ERMP should focus primarily on achieving a low and stable rate of inflation.

*Unpack terms and scope essay*

**Thesis 1: ER MP should be focused primarily on low achieving a low and stable rate of inflation in Singapore because of the benefits to Singapore**

- *An appreciation of Singapore's currency would cause (X-M) to fall, assuming ML condition holds, thereby causing AD to fall and reducing demand pull inflation. Also, an appreciation would lower the cost of imported inputs and increase AS, reducing cost-push inflation.*
- With a low and stable rate of inflation, households enjoy greater certainty to make plans concerning consumption and savings. As inflation is low, this would give households greater certainty over the price level, which will encourage them to make plans for current and future consumption which will benefit both the material and non-material living standards of Singaporeans. It also encourages household to save as the real value of their income can be better preserved, which may improve upon their future material living standards. For example, Singaporean families find it worthwhile to make plans for their children's future education expenses when inflation is within normal expectations.

*Briefly state how ER MP can achieve low and stable rate of inflation in SG.*

*Explain the benefits of achieving a low and stable rate of inflation.*

*(approximately 2 benefits would suffice!)*

- Low and stable rate of inflation also creates a more conducive environment for firms to invest. As household save more, the supply of loanable funds increases which reduces interest rates, lowering the cost of borrowing for firms to finance their investments. Low inflation also enhances the confidence of firms since they now have greater certainty over the expected returns of their investment. This will promote firms to take out long term investments which benefits Singapore's potential growth.
- Besides benefits to household and firms, the economy will benefit as a whole when it also creates the conditions to achieve other macro-economic objectives. A low and stable rate of inflation tend to be an indicator of a healthy economy which encourage firms to raise their production levels and employ more factors of production leading to a fall in unemployment rate. It also maintain export competitiveness and leads to stronger net exports, which helps in improving the current account.
- Finally, a low and stable rate of inflation also enhances efficiency as fewer resources are needed to constantly update changing prices which reduces the menu costs.

***Thesis 2: ER MP should be focused on achieving a low and stable rate of inflation in Singapore because of its positive unintended consequences it brings (assuming large and persistent current account surplus)***

- In terms of positive unintended consequences, a positive aspect of achieving a low and stable inflation rate could be reducing a large current account surplus. As the currency appreciates, net exports falls which reduces the current account surplus. This is likely to complement the objective of a low and stable inflation.

*Explain possible positive unintended consequences of achieving a low and stable rate of inflation.*

***Anti-thesis 1: ER MP should not focused primarily on achieving a low and stable rate of inflation in Singapore because it should be focused on achieving actual growth and low unemployment***

- *Briefly state how exchange rate centred monetary policy can achieve other objectives such as actual growth and low unemployment (these two can be explained together) as well as healthy BOP. → Expansionary exchange rate monetary policy (depreciate exchange rate)*
- With actual growth and low unemployment, households enjoy a higher material standard of living. With greater production, firms hire more workers which allow them to earn an income that can be spent on goods and services. With income, households will be better able to save up to improve on future living standards. Having an income also reduces financial stress that promotes non-material standard of living as well.

*Explain the benefits of achieving other objectives*

- Actual growth and low unemployment is means that that is more production

and more people earning an income. This means that firms are able to produce and sell more of their goods and services thereby raising their revenue and profits. Actual growth and low unemployment is also associated with a healthy economy, which boost business confidence, encouraging firms to invest.

- As an economy, actual growth and low unemployment also raises tax revenue and lowers unemployment benefits. This creates an ideal condition for the government to use the tax revenue collected to improve various aspect of the economy that have a positive impact on both material and non material standard of living such as spending on education and healthcare. Crime rates are also lowered promoting the safety of citizens.

**Anti-thesis 2: ER MP should not focused on achieving a low and stable rate of inflation because of the negative unintended consequences of achieving low and stable rate of inflation such as lower economic growth, increase unemployment and worsening current account deficit (assuming large and persistent current account deficit)**

- In the pursuit of low and stable rate of inflation, the contractionary exchange rate monetary policy may have unintended consequences in terms of lower economic growth and higher unemployment. As the exchange rate appreciates, AD starts to fall due to the fall in net-exports. The fall in AD adversely impact actual growth as well as raising demand-deficient unemployment. Furthermore, the stronger exchange rate could have worsen a current account deficit by reducing net exports.

**Evaluative conclusion (one of the two sets of stand + elaboration would suffice)**

- **[Stand]** Exchange rate centred monetary policy should be focused primarily on achieving low and stable rate of inflation in Singapore.
- **[Magnitude]** Given Singapore's heavy reliance on external sector for export markets and imported goods, price stability has a far-reaching impact on almost all sectors. Therefore, a low and stable exchange rate can be argued to have the greatest impact on Singapore's material standard of living. This is supported by the fact that net-exports is the largest component of AD and is most likely to cause a shift in AD in Singapore of which changes to actual growth and employment levels is dependent upon.
- **[Situation]** Given that Singapore current account position tends to be in surplus, a contractionary exchange rate centred monetary policy helps to moderate the surplus earned.

*Explain the possible negative unintended consequences in achieving a low and stable rate of inflation*

*Evaluate by first providing a stand*

*Substantiate the stand by comparing the importance of low and stable inflation relative to the other objectives in Singapore.*

**OR**

- **[Stand]** Whether to use ER MP to achieve low inflation depends on the root

*Evaluate by first*

cause of inflation in Singapore.

- **[Situation]** As Singapore has a very open economy, it is likely that inflation is caused by external factors rather than domestic factors. In this case, ER MP should be focused primarily in addressing this source of inflation. Suppose inflation is caused by strong foreign demand for Singapore's exports or higher import prices, the appreciation of SGD will be effective in moderating the demand for exports and lower the prices of imports, thereby easing the extent of inflation.

*providing a stand*

*Substantiate the stand by explaining how inflation could be likely caused by external factors.*

Level	Knowledge, Application/Understanding and Analysis	Marks
L3	For a well-developed answer that: <ul style="list-style-type: none"> <li>• provide thorough and structured discussion on the benefits of achieving low and stable rate of inflation and other macro-economic objectives as well as unintended consequences. There is strong application to the Singapore context.</li> </ul>	8 – 10
L2	For an underdeveloped answer that: <ul style="list-style-type: none"> <li>• For essays that offered a one-sided and/or mere theoretical treatment on whether exchange rate centred monetary policy should be focused primarily on achieving a low and stable rate of inflation in</li> </ul>	5 – 7
L1	For an undeveloped answer that has limited/no application of relevant economic concepts, and/or contains conceptual errors and misinterpretations of the given context	1 – 4
Evaluation		
E3	For essays that substantiate the final stand with a clear criterion for weighing, taking into consideration the situation of Singapore.	4 – 5
E2	For essays that <i>attempt</i> to substantiate the final stand. However, the supporting reasoning are questionable or lacking in logical links.	2 – 3
E1	For unsubstantiated evaluative comments.	1

**5** In Budget 2017 and 2018, Finance Minister Heng Swee Keat announced increases in diesel tax, Goods and Services Tax (GST) and a new carbon tax. These measures reflect a global shift from

direct to indirect taxes as a source of government revenue.

Source: *The Business Times*, 23 February 2017

Assess how a shift from direct to indirect taxes affects the microeconomic and macroeconomic goals of the Singapore government. [25]

Question Interpretation

Command word/phrase	Assess how	Consider various arguments and come to a reasoned conclusion
<b>Content</b>	Shift from direct to indirect taxes	Reduce direct tax rates, such as personal income tax and corporate income tax,  Increase indirect tax rates, such as diesel tax, Goods and Services Tax (GST) and carbon tax
	Microeconomic goals	Efficiency and equity
	Macroeconomic goals	Economic growth, price stability, full employment, favourable balance of payments
<b>Context</b>	Singapore government	Consider the context/characteristics of the Singapore economy

Suggested Answer

**Introduction**

Many countries around the world are moving away from direct taxes to indirect taxes as a source of government revenue. The Singapore government's shift from direct to indirect taxes can either have positive or negative effects on the Singapore government's microeconomic goals (namely efficiency and equity) and macroeconomic goals (namely economic growth, price stability, full employment and favourable balance of payments).

*Brief statement of the microeconomic and macroeconomic goals of the Singapore government.*

**Development 1a: The shift from direct to indirect taxes can be beneficial to the Singapore economy because of the positive effects on the Singapore government's microeconomic goals.**

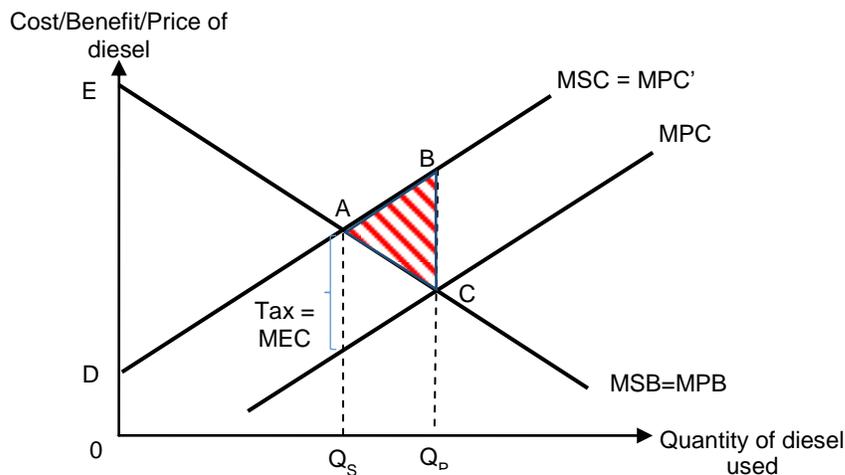
- Efficiency: The use of diesel could generate negative externalities, which

*Impact of the shift on efficiency, using*

are costs incurred by third parties who are not directly involved in the economic activity as producers or consumers.

- For example, diesel powered production equipment could lead to the formation and discharge of pollutive waste gases into the environment during the production process.
- This adversely affects residents living near the production plant, who are the third parties in this context. As a result of such external costs on third parties, there is over-consumption of diesel i.e. the socially optimum level of diesel usage ( $Q_s$ , determined by  $MSB=MSC$ ) is higher than the private optimal level ( $Q_p$ , determined by  $MPB=MPC$ ). This results in a deadweight loss as shown in the shaded area in Figure 8, indicating allocative inefficiency in the market for diesel.
- The shift to indirect taxes could help to correct the market failure resulting from such negative externalities. When the Singapore government increased the diesel tax (as highlighted in the preamble), the MPC of using diesel as a source of fuel increases for firms. This increase in MPC from  $MPC$  to  $MPC'$  results in a fall in the amount of diesel used towards the socially optimum level,  $Q_s$ , which in turn reduces the extent of allocative inefficiency. Furthermore, producers could be incentivised to improve their production methods in order to reduce or even avoid having to pay diesel taxes in future. The government would thus be able to address market failure and achieve allocative efficiency when shifting from direct to indirect taxes.

*negative externalities in the use of diesel as an example*



**Figure 8: Negative Externalities in the Use of Diesel**

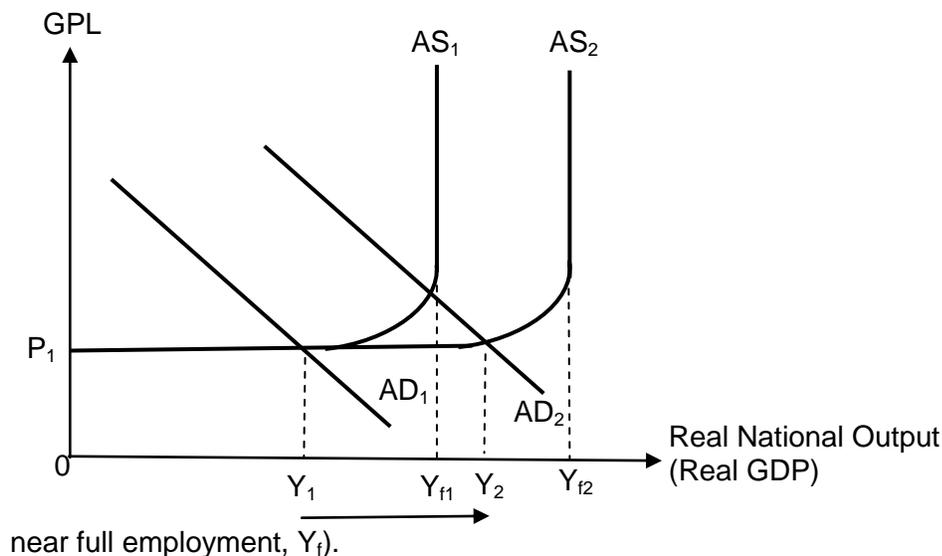
- However, there is a possibility of government failure if the taxes, which are imposed to offset the loss in income tax revenue, are too high, resulting in under-consumption of diesel and a larger deadweight loss instead.

***Development 1b: The shift from direct to indirect taxes can be beneficial***

**to the Singapore economy because of the positive effects on the Singapore government's macroeconomic goals.**

- **Sustained Economic Growth:** The shift away from direct taxes as a source of government revenue can be achieved through reducing the personal income tax rates and/or corporate income tax rates.
  - For instance, when the Singapore government reduces corporate income tax rates, firms will have more after-tax profits and this incentivises firms to increase the level of investment expenditure. In the short run, this increase in investment expenditure results in an increase in aggregate demand since investment expenditure is a component of aggregate demand.
- This increase is illustrated in Figure 9 by the rightward shift of the aggregate demand curve from  $AD_1$  to  $AD_2$ . Assuming the Singapore economy has sufficient spare capacity, this increase in aggregate demand contributes to the achievement of actual growth via the multiplier effect.
- In addition, in the long run when firms increase the level of investment such as expanding their production plant, the quantity and/or quality of resources can increase and this leads to an increase in the productive capacity of the Singapore economy. This is illustrated in Figure 9 by a rightward shift of the vertical range of the aggregate supply curve from  $AS_1$  to  $AS_2$ .
- When both aggregate demand and aggregate supply increase in tandem, the Singapore government can achieve sustained economic growth. This is illustrated by the increase in real national output from  $Y_1$  to  $Y_2$  without resulting in inflationary pressures (since general price levels remain fairly stable at  $P_1$ ) or unemployment (since the economy continues to operate

*Impact of the shift on sustained growth, using the change in level of investment expenditure as an example*



**Figure 9: Impact of shift from direct to indirect taxes on Economic Growth**

- **Sustainable growth:** In addition, the increase in indirect taxes such as the diesel tax and the new carbon tax reduces the level of pollution and environmental degradation in Singapore, which contributes to the achievement of sustainable growth.

**Development 2a: The shift from direct to indirect taxes can, however, be a problem for the Singapore government due to the negative effects on the microeconomic goals.**

- **Equity:** When the Singapore government shifts from direct to indirect taxes, such as raising GST, this leads to higher prices of goods and services in general. Given that the lower-income and higher-income groups are subject to the same GST rate, indirect taxes such as GST are essentially regressive in nature. The increase in indirect taxes takes up a larger proportion of the income for the lower-income group than the higher-income group. Lower-income households may thus be priced out of the market for certain necessities such as rice and oil, which results in an inequitable distribution of resources.

**Development 2b: The shift from direct to indirect taxes can, however, be a problem for the Singapore government due to the negative effects on the macroeconomic goals.**

- **Cost-push inflation:** When the Singapore government shifts from direct to indirect taxes, such as introducing the new carbon tax, firms that contribute to carbon emissions in Singapore will incur higher cost of production. As such taxes are likely to impact a significant number of industries in Singapore (e.g. transport, construction, oil refining), there could be a general increase in the cost of production in the Singapore economy. As a result, there is a fall in the aggregate supply (upward shift of the AS curve) indicating cost-push inflation over time.
- **Worsening of the balance of payments:** The price competitiveness of Singapore's exports could also be eroded due to cost-push inflation. Considering that the demand for Singapore's exports tends to be price elastic since there are many substitutes in the global economy, this increase in the price of exports could lead to a more than proportionate fall in the quantity demanded for exports. As such, Singapore's export revenue could fall. The current account worsens due to the worsening balance of trade, which in turn results in a worsening of Singapore's balance of payments, ceteris paribus.
- **Lack of inclusive growth:** The shift from direct taxes to indirect taxes may limit the Singapore government's ability to achieve inclusive growth. By reducing the reliance on direct taxes that are progressive in nature and raising the reliance on indirect taxes that are regressive in nature

*Impact of the shift on sustainable growth*

*Impact of the shift on equity, using GST as the example of indirect tax*

exacerbates the issue of income inequality since the shift is likely to benefit the higher-income groups at the expense of the lower-income groups.

**Evaluative Conclusion:**

- **[Stand]:** Whether the overall impact of a shift from direct to indirect taxes benefits the Singapore economy depends on the ability of the government to harness the positive outcomes while alleviating the negative impacts.
- **[Alternatives]:** On top of the shift from direct to indirect taxes, the Singapore government could complement it with other economic policies to help the lower-income groups cope with the negative effects (such as inflation). These include transfer payments and subsidies to ensure the lower-income groups are not priced out of the market for basic necessities. The worsening income inequality situation as a result of this shift from direct to indirect taxes has also given rise to calls for universal basic income through legislating minimum wage schemes and free healthcare provision by the government.

*Impact of the shift on price stability, using cost-push inflation as an example*

*Impact of the shift on BOP, using the current account an example*

*Impact of the shift on inclusive growth*

- **[Situation]** The impact of this shift from direct to indirect taxes eventually depends on the relative tax rates in Singapore and other countries, especially since the shift from direct to indirect taxes is a global phenomenon. In the event that Singapore's direct and indirect tax rates are lower than her international competitors for skilled labour and foreign direct investment, the impact of this shift is more likely to be beneficial than if Singapore's tax rates are relatively higher.
- **[Magnitude]** The impact on various microeconomic and macroeconomic goals also depends on the magnitude and pace of the shift from direct to indirect taxes. While a gradual change will mitigate any negative impact of the shift, Singapore's direct tax rates are already among the lowest in the world and any further direct tax cuts are likely to be minimal, thus limiting the positive benefits of this shift away from direct taxes.

*A reasoned stand plus 2 of the following ATMS angles would suffice.*

Level	Knowledge, Application/Understanding and Analysis	Marks
L3	<p>For a well-developed answer that:</p> <ul style="list-style-type: none"> <li>• gives a rigorous, balanced and analytical explanation of the effects of the shift from direct to indirect taxes on the microeconomic <u>and</u> macroeconomic goals of the Singapore government; and</li> <li>• utilises the Singapore context well.</li> </ul>	15 – 20

L2	<p>For an under-developed answer that:</p> <ul style="list-style-type: none"> <li>• gives a largely descriptive explanation of the effects of the shift from direct to indirect taxes on the microeconomic <u>and</u> macroeconomic goals of the Singapore government.</li> </ul> <p><u>OR</u></p> <ul style="list-style-type: none"> <li>• gives an analytical explanation of the effects of the shift from direct to indirect taxes on the microeconomic <u>or</u> macroeconomic goals of the Singapore government.</li> </ul> <p><u>OR</u></p> <ul style="list-style-type: none"> <li>• gives an analytical explanation of the effects of the shift from direct to indirect taxes on the microeconomic <u>and</u> macroeconomic goals without reference to the Singapore context.</li> </ul>	9 – 14
L1	For an undeveloped answer that shows some basic knowledge of the effects of the shift from direct to indirect taxes on the microeconomic <u>and/or</u> macroeconomic goals of a government, with or without reference to the Singapore context.	1 – 8

<b>Evaluation</b>		
E3	For a well-reasoned attempt at substantiating the final stand with a clear criterion for weighing the impact of the shift from direct to indirect taxes on the microeconomic and macroeconomic goals of the Singapore government.	4 – 5
E2	For a limited attempt at substantiating the final stand with a clear criterion for weighing the impact of the shift from direct to indirect taxes on the microeconomic and macroeconomic goals of the Singapore government.	2 – 3
E1	For unsubstantiated evaluative comments.	1

**6** Four decades of breakneck economic growth turned China into the world’s biggest carbon emitter. But the government is trying to change that without damaging the economy—and perhaps even use its green policies to become a leader in technological innovation.

Adapted from *Bloomberg*, 9 March 2018

**(a)** Explain the factors that contribute to sustainable growth in a country. [10]

**(b)** Discuss how China’s pursuit of sustainable economic growth can impact its balance of payments. [15]

Part (a)

Question Interpretation

<b>Command word/phrase</b>	<i>Explain the factors</i>	Make clear how sustainable growth can be achieved by detailing the process through which the cause-and-effect relationship occurs, and elaborate with economic reasoning.
<b>Content</b>	<i>sustainable growth</i>	Sustainable growth indicates a rate of growth that can be sustained without creating other significant economic problems (such as depleted resources and environmental problems), particularly for future generations.
<b>Context</b>	<i>in a country</i>	Can be any country but can also refer to China, a country mentioned in the preamble.

Suggested Answer

**Introduction**

- Sustainable growth indicates a rate of growth that can be sustained without creating other significant economic problems (such as depleted resources and environmental problems), particularly for future generations.
- For sustained growth, which is a pre-requisite for sustainable growth to be achieved, there must be a positive and stable growth rate through a rise in both AD and AS, without significant upward pressure on the general price level (GPL), over an extended period of time. Therefore, for sustainable growth to be achieved, there must be a rise in AD, a rise in AS and prudent management of a country’s environment.

*Unpack terms and scope essay*

**Body 1: Factor affecting AD**

- Firstly, any factor that causes the AD to increase enables the country to achieve sustainable growth. As  $AD = C + I + G + (X-M)$ , an increase in any component of AD would increase the AD. For example, if there is strong economic growth in trading partners, this would cause a rise in the disposable incomes and purchasing power of consumers in these foreign countries, and therefore an increase in the demand for the domestic country's exports. The domestic country will experience an increase in  $(X-M)$  and its AD will increase.
- Another factor that causes AD to increase would be domestic policies such as a fall in corporate and income taxes. This would raise firms' expected post-tax profits and therefore increase the level of I in the economy.
  - For example, given China's much slower economic growth rate, its government is currently trying to buttress its growth rate by lowering corporate taxes in order to stimulate investments. China's government has also lowered income taxes to raise the purchasing power of domestic consumers to stimulate consumption.
- As  $(X-M)$ , C and I increase, AD would increase, ceteris paribus. There would be a multiplied effect on Y via the multiplier effect, thus achieving actual growth.

*Explain a factor that increases the AD*

**Body 2: Factor affecting AS**

- Secondly, any factor that causes the AS to increase contributes to sustainable growth. This could be due to increases in quantity or quality of factors of production, which are land, labour, capital and entrepreneurship. If the country experiences an increase in the size of the population, there would be an increase in the quantity of labour, causing the productive capacity of the economy to increase. This would mean that the economy is able to produce more goods and services.
  - An example is Singapore where our population has recently hit a record of 5.7 million this June. Another reason why could be due to the government policy of increased government expenditure on subsidising R&D by firms. This means that there is an increase in the quality of capital goods in the economy, causing productive capacity to increase.
- The AS of the economy would increase due to both of these factors and the AS curve shifts to the right. The full employment level of output increases and potential growth is achieved. At the same time, GPL falls and this helps to reduce inflationary pressure.
- When both AD and AS rise in tandem, real national income increases over a sustained period of time and inflationary pressure is not significant. Therefore, sustained growth, which is a pre-requisite for sustainable growth, is achieved.

*Explain a factor that increases the AS*

**Body 3: Factor affecting environmental or resource conservation**

- Lastly, another factor that contributes to sustainable growth is the government's pursuit of pro-environmental policies. Starting from 2017, mainland factories in China have been taxed for producing air, water, solid waste and noise pollution.
  - For example, a tax on goods that generate air pollution in their production process would mean a rise in the cost of production for firms, forcing them to internalize the external costs of production.
  - This in turn would raise their marginal private costs to the same level as the marginal social costs of production, reducing the  $Q_p$  to the same level as the  $Q_s$ , eliminating the deadweight loss to society. With a reduction in the production of goods that generate air pollution, there would be improved air quality.
- This improvement in air quality might help to improve the health and productivity of China's workforce, increasing the quality of labour and cause the AS to increase. The AS curve shifts to the right. This increases the full employment level of output, achieving potential growth.
- This also results in a healthier workforce and preservation of air, water and land quality, indicating that China's growth can be extended into the long run without any serious depletion of resources, thus making it sustainable.

*Explain a factor that contributes to the protection of the environment (use economic analysis)*

**Conclusion**

- In conclusion, the factors above can help a country achieve sustainable growth. A successful pursuit of sustainable growth can possibly help a country achieve its various macroeconomic goals, such as a healthy balance of payments.

Level	Knowledge, Application/Understanding and Analysis	Marks
L3	For an answer that: <ul style="list-style-type: none"> <li>• Provides a rigorous analysis of factors that help to achieve sustained growth and the environment factor.</li> <li>• Uses relevant examples</li> </ul>	8 – 10
L2	For an answer that: <ul style="list-style-type: none"> <li>• Provides a rigorous analysis of factors that help to achieve sustained growth or the environment factor</li> <li>• Analysis of factors that help to achieve sustained growth and the environment factor lacks rigour</li> <li>• Shows limited/no use of relevant examples</li> </ul>	5 – 7
L1	For an answer that: <ul style="list-style-type: none"> <li>• Has limited/no application of relevant economic concepts, and/or</li> <li>• Contains conceptual errors and misinterpretations of the given context</li> </ul>	1 – 4

Part (b)

Question Interpretation

<b>Command word/phrase</b>	<i>Discuss</i>	Present key points for both sides of the argument (for and against) in detail and come to a conclusion. There should be some evidence of balance, though not necessarily of equal weighting.
<b>Content</b>	<i>Sustainable growth</i>	Refer to (a)
	<i>Balance of payments</i>	The different accounts of the balance of payments
<b>Context</b>	<i>China</i>	Reference has to be made to China

Suggested Answer

**Introduction**

- China's pursuit of sustainable growth will affect both the current account as well as the capital and financial account of the balance of payments. Under its current account, one can consider the effect on the trade balance, the income balance as well as the net current transfers of the country. Furthermore, one can consider both short term and long term capital flows when explaining the effect of pursuing sustainable growth on the capital and financial account.

*State the framework that can be used for the balance of payments*

**Body 1: Explain the impact of China pursuing sustainable growth on its current account (pick one benefit and one cost)**

**Body 1a: Explain the impact of China's pursuit of sustainable growth on its trade balance**

- (Benefit)** With sustainable growth, the reduction in air pollution would have a beneficial effect on the health of workers in the economy, which can improve the current account.
  - For example, the smog in Beijing, which has been reduced to some extent in recent years, is still affecting the health of the country's population.
  - This pursuit of sustainable growth, if successful, will result in an increase in the productivity and therefore the quality of labour. Increased productivity would translate to a drop in the unit cost of production for firms, allowing firms to lower prices to increase export competitiveness.
  - Given that demand for Chinese products tend to be price elastic as

*Explain costs and/or benefits of pursuing sustainable growth on the trade balance*

many of their products are manufactured goods such as electronics that have close substitutes from firms in other countries, a lowering in prices of exports will increase quantity demanded by more than proportionately.

- Export revenue will increase and therefore net export revenue will rise. The current account will improve via the trade balance and therefore the balance of payments will improve too.
- **(Benefit)** Next, limiting firms from pollution and cleaning up the already tainted soil can help to improve the quality of the soil in China which can affect agricultural output. This can improve the current account over time.
  - Chemical and fertilizer industries have been poorly regulated in China, resulting in large amounts of toxic chemicals entering the soil and therefore reduced agricultural yields as toxic soil is less productive.
  - For example, the Chinese have experimented with growing willow trees to clean up contaminated soil. Demand for its crops will increase if they are now deemed to be of better quality in the world market. At the same time, an increase in crop yields lowers the unit costs of production for crops.
  - This helps to raise export competitiveness for the agricultural sector as well as firms are able to lower export prices. Assuming that demand for Chinese crops are price elastic, which is likely as many of these crops like corn are also produced in other countries, quantity demanded for these crops will increase by more than proportionately and export revenue will rise.
  - Import expenditure could also fall as China's increased ability to sustain itself agriculturally is improved.
  - The rise in export revenue and fall in import expenditure both contribute to a rise in the value of the net exports. The current account is improved via the trade balance and therefore the balance of payments improves as well.
- **(Benefit)** As mentioned in the preamble, China's focus on sustainable growth would mean a search for technologically and economically viable green technology that could help the country improve its current account.
  - Such green technology, if developed domestically, could be exported to other countries as sustainable growth is an increasingly recurring theme across many countries which face similar environmental issues. Products like advanced solar panels and electric cars using cutting-edge technology produced in China could raise demand for China's exports if it develops a reputation and a branding for green technology. Its export revenue increases, raising the value of its net exports and therefore improve its current account too.
- **(Cost)** However, in order to pursue sustainable growth, there must also be reduced mining of natural resources, which can potentially worsen the current account.

- For example, China is a key supplier of the world's iron and copper, resources which are limited and will eventually run out.
- If the Chinese government is able to limit mining output, the current account may deteriorate in the short run as less of these resources will be exported.
- **[Time-Frame]** However, it can also help to maintain China's current account balance in the long-run because such resources can continue to be exported for a longer period of time, just at a slower rate. It also means that China would not have to depend on foreign imports for such materials in the future as well.

*Notice that this is evaluation in the form of a counterbalance to play down the cost using Time Frame*

**Body 1b: Explain the impact of China's pursuit of sustainable growth on its income balance**

- **(Cost)** If more foreign firms are attracted into China due to the improved health and productivity of labour and better quality land in the country, although they might be an increase in FDI in the short run, they might repatriate their profits made back to their home countries in the long run. This would result in an outflow of currency from the income balance of the current account, worsening the balance of payments in the country

*Explain costs and/or benefits of pursuing sustainable growth on the income balance of the current account*

**Body 1b: Explain the impact of China's pursuit of sustainable growth on its net current transfers**

- **(Cost)** With sustainable growth, there would be less pollution in the environment, making China a more attractive place for foreigners to live in. With more labour inflows, there will be an increase in the outflows of currency in the form of remittances from China as these workers send part of their wages back to their home countries. This will cause the current account to worsen via the net current transfers and therefore cause the balance of payments to worsen.

*Explain costs and/or benefits of pursuing sustainable growth on the net current transfers of the current account*

**Body 2: Explain the impact of China pursuing sustainable growth on its capital and financial account (one benefit and one cost would suffice)**

**Body 2a: Explain the impact of China's pursuit of sustainable growth on**

***its long term capital flows***

- **(Cost)** A greater focus on achieving sustainable growth most probably means that environmental regulations will become relatively stricter as compared to before, causing the capital and financial account to worsen.
  - For example, it could mean that laws are imposed to stop firms from air, soil and water pollution, with the punishment of a heavy fine. This is a regulatory burden to the firms because adhering to these regulations most likely means that they would have to find other less polluting methods of production which often tends to raise their costs of production.
  - This rise in costs of production might cause foreign firms operating in China to leave the country, and instead, migrate to other countries with lower overall costs of production so that they can maintain their profits.
  - This increase in long-term capital outflows would worsen the capital and financial account of the country and thus cause the balance of payments of the country to deteriorate. There could also be a fall in the inflow of FDI as the country becomes less attractive to foreign investors who are considering setting up manufacturing bases in China.

*Explain costs and/or benefits of pursuing sustainable growth on long-term capital flows*

***Body 2b: Explain the impact of China's pursuit of sustainable growth on its short term capital flows***

- **(Benefit)** China's focus on sustainable growth may attract more property speculators who predict that a more attractive place for living and working would cause the demand for housing to rise as more immigrants enter the country. There may be a rise in short-term capital inflows to the country as more property speculators from overseas buy property and land in China. This can cause the capital and financial account to improve.

*Explain costs and/or benefits of pursuing sustainable growth on short-term capital flows*

***Evaluative Conclusion***

- **[Stand]** Overall, China's balance of payments is likely to improve with its pursuit of sustainable growth.
- **[Time Frame]** Even though it could result in an increase in FDI outflows as foreign firms leave due to much stricter regulations, this is likely to be a short-run effect as these firms may return to the Chinese market when the improvements in the productivity of its land and labour are attained in the long-run via environmental policies which generally require time to work.
- **[Situation]** Whether the balance of payments actually improves is also dependent on China's ability to enforce its policies for sustainable growth. For example, it is facing some difficulties in enacting soil-improvement plans because they depend on enforcement by local officials, who might be working hand-in-glove with local polluters. However, so far, efforts to

*A reasoned stand plus 2 of the following ATMS angles would suffice.*

achieve sustainable growth which often included draconian measures, have achieved huge gains with air quality in China recording significant improvements.

- **[Situation]** Furthermore, developing green technology and therefore improve its current account is highly achievable for China, given its vast quantity of local talent with high technical expertise. However, its ability to market these technology in the world market also depends on the country's ability to develop a strong branding and reputation for sustainability, and this might be more difficult to create as compared to mere products.

Level	Knowledge, Application/Understanding and Analysis	Marks
L3	For a well-developed answer that: <ul style="list-style-type: none"> <li>• contains rigorous explanations of how China's pursuit of sustainable growth can affect both its current and capital and financial account; and</li> <li>• shows balance with consideration of both the positive and negative impacts on the balance of payments</li> </ul>	8 – 10
L2	For an under-developed answer that: <ul style="list-style-type: none"> <li>• has insufficient scope in answer (only the current OR capital and financial account covered); and/or</li> <li>• shows a lack of balance; and/or</li> <li>• has insufficient rigour in answer</li> </ul>	5 – 7
L1	For an undeveloped answer that is very limited in scope and has serious conceptual errors and gaps in explanations.	1 – 4
Evaluation		
E3	For an answer that uses competent economic analysis to support an evaluative judgement on the impact on China's balance of payments.	4 – 5
E2	For an answer with some economic analysis (either incomplete or with some inaccuracies) to support an evaluative judgement on the impact on China's balance of payments.	2 – 3
E1	For an answer that provides an unsupported evaluative statement on the impact on China's balance of payments.	1