

TAMPINES JUNIOR COLLEGE
JC2 PRELIMINARY EXAMINATION



ECONOMICS

Paper 1

9757/01

Tuesday, 28 Aug 2018

2 hours 15 minutes

Additional Materials: Writing Paper

READ THESE INSTRUCTIONS FIRST

Write in dark blue or black pen.

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

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

Paper 1 (Case Study) [40%]

Answer **ALL** questions

Submit each Case Study separately.

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

Answer **all** questions.

Begin **each case study** on a **fresh sheet of paper**. Case study questions 1 and 2 are to be submitted **separately**.

Question 1 The Singapore Energy Market

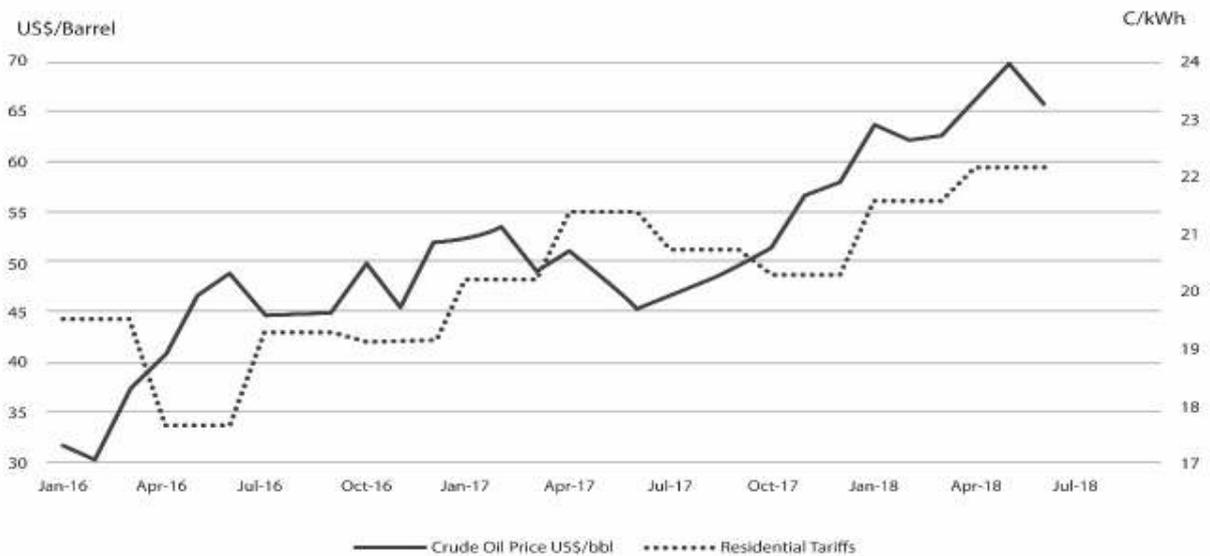
Extract 1: Electricity Tariffs to increase in first quarter 2018

The Energy Market Authority (EMA), a government authority that regulates the electricity industry, has announced that residential electricity tariffs will increase by an average of 6.3% in the first quarter of 2018. The increase is due to the higher cost of natural gas for electricity generation, which went up by 14%, as compared to the previous quarter. This means that the average monthly electricity bill for families living in four-room HDB flats will increase by \$4.78, affecting their cost of living.

Households already saw increases in electricity tariffs since late last year, from October to December 2017. If the Singapore households anticipate that the electricity charges will continue to rise, then they should plan to conserve energy to save their utility bills in the future. But this could prove to be a hassle as electricity is vital for residential consumption.

Adapted from: *The Straits Times*, 29 December 2017

Figure 1: Oil Price and Residential Electricity Tariffs



Source: *Channel News Asia*, 28 June 2018

Extract 2: Solar power adoption—yay or nay?

The increased carbon-consciousness across both the public and private sectors has accelerated the adoption of solar power on the island, with installed solar capacity nearly quadrupling over the last three years. Meanwhile, tests to explore the viability of placing solar panels on reservoirs are underway. If viable, this promises to raise the amount of solar energy that can be generated in land-scarce Singapore.

Despite the immense benefits, the Singapore government is firm on not subsidising solar power, as it may lead to wasteful overconsumption. More importantly, market players will not

have a true sense of the cost of energy, resulting in distortions of energy usage decisions. Additionally, the high price of crude oil in the past 10 years has accelerated investments in renewable energy, where the cost of energy from solar sources is now lower than that from gas.

Instead, the government implemented initiatives to spur solar adoption. For instance, last month Jurong Town Corporation (JTC) gave Sun Electric the rights to install solar panels on the rooftops of 27 JTC buildings, and to export the solar energy into the grid which can also be sold to users in other buildings. This marked a new business model as previously, power generated under solar leasing models primarily served users of the building itself before excess energy is brought into the grid.

Some incumbent electricity retailers have changed the way they operate in Singapore, investing heavily in solar power technology. For instance, Sembcorp Industries has recently spent S\$3.3 million to acquire two operating rooftop solar facilities from Renewable Energy Corporation (REC) Solar. Also, Keppel Land's headquarters in Bugis Junction are now fully powered by renewable energy generated offsite. In the private sector, various companies have also taken the green route. Apple made waves in late-2015 when it became the first company here to be entirely powered by renewable energy in a landmark deal with local solar developer Sunseap.

But a rise in solar adoption also brings along increased stress on the grid and other operational challenges, as solar power is intermittent in nature; power generation firms will have to ensure there is sufficient baseload power even with higher use of solar energy. Also, the increased costs in operating the grid and ensuring sufficient baseload power have to be fairly distributed among the various parties involved.

To be sure, renewable energy such as solar is only one of a few technologies changing the face of the energy sector worldwide; others include energy storage. Due to the rapid cost reduction of batteries, energy storage has the potential to be a game-changer. Advances in energy storage can better integrate intermittent generation sources such as solar energy into the grid, and drive electric vehicle adoption. Such viability has led to foreign firms investing in energy storage in Singapore, such as VDE Renewables and Narada from Germany and China respectively.

Source: *Various*

Extract 3: Electricity market in Singapore to sizzle in 2018 with new elements

In April 2018, households and businesses in Jurong will be the first in Singapore to choose their electricity retailers in the soft launch of a fully liberalised power market.

"Our main objective of introducing the Open Electricity Market is to promote greater competition in the electricity market. With competition, consumers stand to benefit from competitive pricing, enhanced service standards and innovative packages from electricity retailers," said EMA's chief executive Ng Wai Choong. He added that consumers can be assured of the reliability of their electricity supply regardless of which retailer they choose, as they will continue to receive electricity supply through the national power grid operated by Singapore Power (SP) Group.

Such liberalisation and the entry of new players had led to greater price competition and transparency for consumers, as well as targeted pricing plans to suit different consumers' needs. This is because retailers say they aim to offer customers price plans that are cheaper than SP's regulated tariff rates. For instance, Sunseap, the largest solar energy provider here, is looking to offer packages that are 15 to 30 per cent lower than current

rates. While other retailers were not prepared to give specific rates, their enterprise customers have seen between 20 to 50 per cent savings since they switched from SP. Also, liberalisation can give rise to innovative partnerships, and even increase the uptake of technology solutions such as IoT (Internet of Things) applications and asset management tools. For instance, electricity retailers in Japan have partnered a wide range of companies, such as supermarkets and telecommunications firms, to offer bundled deals and cross promotions. Furthermore, retailers are also ramping up their back-end infrastructure to handle a much greater volume of customers. Best Electricity Supply, part of the Prime Group which includes Prime Taxi, is investing heavily to build up an efficient and reliable IT system for sign-ups, billing, and payment collection. Similarly, Senoko Energy, one of the largest power generation firms here, is now focused on preparing its retail team to ensure that the firm provides a high level of dedicated customer service.

However, there are some possible drawbacks. Mr Allan Loi, a research associate at the Energy Studies Institute at the National University of Singapore, warned that not all plans will be suitable for consumers. “These dynamic pricing plans might be very volatile, and not for the risk-averse or low-income consumers. Consumers will need to monitor these prices themselves.” It is also unclear whether consumers will be charged for switching suppliers, which may deter consumers from switching.

Nonetheless, consumers need not worry excessively. SP Group said that it will be a seamless process, which will be much like how consumers switch telecommunications firms. Mr Chuah from SP Group said that “the (switching) process will take a few days, but there will be no interruption to the electricity supply in the process.”

Having more choices is almost always beneficial for the consumer. For now, it is still unclear if the local market is large enough for the many retailers to survive. Therefore, even as the energy buffet table fills up, the EMA will certainly have to keep a watchful eye. It might take quite a while yet before the shape of Singapore’s future electricity market fully emerges.

Source: *Various*

Questions

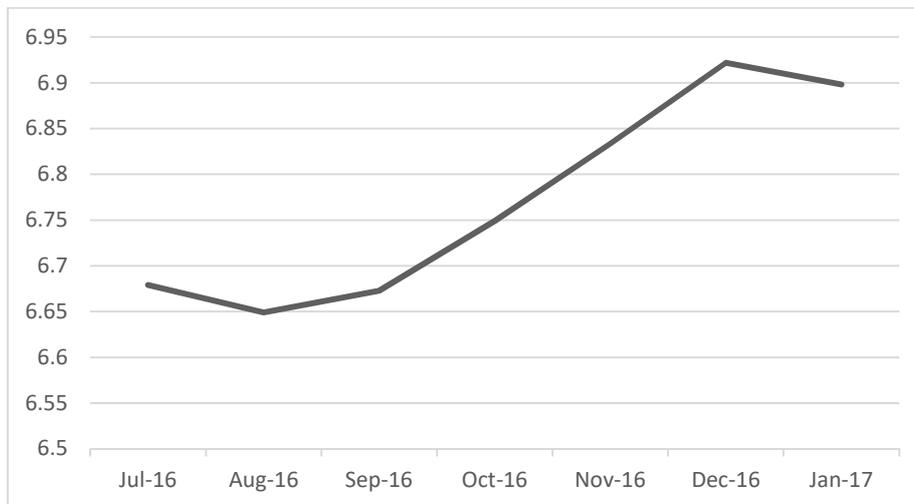
- (a) Using Figure 1,
- (i) Describe the trend in crude oil price from January 2016 to July 2018. [2]
 - (ii) With the aid of a diagram, explain the impact of the change in crude oil price on the Singapore economy. [3]
- (b) Using a diagram, analyse the burden of an increase in the price of natural gas on producers and consumers of electricity. [3]
- (c) Using the concept of opportunity cost, explain one effect arising from the increase in the price of natural gas on:
- (i) consumers, [2]
 - (ii) SP Group. [2]
- (d) Assess the factors that the Singapore government would have considered in their decision not to subsidise solar power. [8]
- (e) In view of the possible economic impact, discuss whether the liberalisation of the electricity market in Singapore can ever be justified. [10]

[Total: 30]

Question 2

All hail, America!

Figure 2: Yuan per USD, monthly average



Source: *International Monetary Fund* (www.imf.org), 5 July 2018

Table 1: US Trade with Canada - Top 5 Exports and Imports, 2016

Top 5 US Exports to Canada		Top 5 US Imports from Canada	
1.	Other parts and accessories of vehicles	1.	Passenger cars, new and used
2.	Passenger cars, new and used	2.	Crude oil
3.	Trucks, buses and special purpose vehicles	3.	U.S. goods returned, and reimports
4.	Industrial machines, other	4.	Other parts and accessories of vehicles
5.	Petroleum products, other	5.	Lumber

Source: *United States Census Bureau* (www.census.gov), 5 July 2018

Extract 4: US fights for protectionism

Tapping into economic discontent, President Donald Trump has argued for protectionism and asserted that decades of free trade policies were responsible for the collapse of the American manufacturing industry and its ballooning trade deficit. He has been feeding on the perception among many Americans that globalisation has brought more pain than gain. For example, globalisation has brought cheap consumer goods into the country, costing domestic jobs and depressing wages. Outsourcing of jobs to cheaper markets has also been a concern.

President Trump wants to renegotiate the North American Free Trade Agreement which lowers trade barriers between the US, Canada and Mexico and rejected claims that the deal has helped the US economy create more jobs and reduce trade deficit by opening up export markets. He has also argued that since China joined the World Trade Organisation, Americans have witnessed the closure of more than 50,000 factories and the loss of tens of millions of jobs. He wants the US government to label China a “currency manipulator” and has lambasted the rapidly growing Asian economy for “unfair subsidy behaviour”.

Source: *The Guardian*, 9 November 2016

Extract 5: Trump's 'America First' Policies

The America First Policies seek to support citizens in America and put America first. Some of the key policy initiatives include the renegotiation of trade deals to expand trade in ways to be fairer for all Americans through jobs creation, implementation of huge tax cuts to stimulate spending and attract foreign direct investments, as well as reformation of the immigration system to prioritise the needs of Americans.

While the policies claim to promote greater inclusivity by reengaging more workers to be employed in more productive jobs and create an environment that fosters new business formation and healthy competition, critics argued that America is trying to achieve their objectives at the expense of other countries. America should instead look into strategies to better prepare their workers for the future. After all, putting America first may not necessarily put all American workers ahead.

Source: *Various*

Extract 6: The Looming Global Trade War

The World Trade Organisation (WTO) used to update themselves every so often through rounds of negotiation designed to spread the benefits of trade wider in ways on which all could agree. But disagreements between rich and poor countries over whether the poor should get special treatment in the name of development mean that no new round has been completed for more than 20 years. Things that really ought to be dealt with have thus just kept piling up. It didn't help also that China, which joined the WTO in 2001, brought to the party a model of trade-distorting state-infused capitalism beyond anything the existing rules had been shaped for.

Desperately in need of new rules but unable to create them, the WTO has been disappointing many of its members, perhaps none more so than America. The organisation has been able to do little to stop China's state-owned enterprises from exporting the surpluses created by their subsidised overcapacity, thus overwhelming producers elsewhere.

Yet US tariffs on aluminium—where imports from China matter more—are less than half what they are on steel. Steel tariffs on the other hand barely scrape China, but hurt Canada, the European Union (EU), South Korea and Mexico severely as most of the steel imports come from these US allies. The impact of tariffs in general on China is muted further by its external rebalancing – switching from external demand to domestic demand in generating growth – since the global financial crisis.

American steel imports account for about a third of the country's steel use, and around 7% of the world's total trade in the metal. According to the commerce department a tariff of 24%—the level it recommended—would have been enough to crimp imports by a third in 2017, equal to roughly 10% of demand.

An analysis by the Trade Partnership, a consultancy, predicts that increases in the price of steel and aluminium under these tariffs will, in the short-term, create 33,000 metal-making jobs and destroy 179,000 metal-dependent ones. In the context of the whole economy, though, such numbers are not that big. America added more than 2million net jobs during the past year.

The biggest question is over Canada and Mexico, the other two members of the North American Free-Trade Agreement (NAFTA). In 2016 Canada sold 88% of its steel exports to America, Mexico 73%; a continent-wide web of supply chains links all three economies. In previous rounds of tariff imposition, both neighbours were exempt. The White House has

seemed to promise carve outs for Canada and Mexico, and perhaps other allies. But Mr Trump has tweeted that such exemptions would depend, perhaps in the long term, on the other two countries giving him the concessions that he wants in NAFTA renegotiations. Both the Canadian and Mexican governments have said that, if hit by tariffs, they will strike back quickly and decisively.

The EU—which sells more steel to America by value, if not by volume, than anyone else—has also said it will retaliate, and has been specific about how. It has promised to launch a formal WTO dispute, and is poised to impose its own steel safeguard measures should it face a surge of imports turned away from America. “If the EU does not act, our steel industry will pay the bill for protectionism in the US,” warned the head of WV Stahl, Germany’s steel-industry trade group. The EU has also drawn up a list of American exports it would hit with a “reciprocal” 25% tariff for a total of €2.8billion (US\$3.5billion).

However, Mr Trump seems likely to take even a proportionate retaliation badly. He has said that he would meet such a response with tariffs on cars. Given that America imported €38bn of cars from the EU in 2016 that would be a big escalation.

Source: *The Economist*, 8 March 2018

Questions

- (a) With reference to Figure 2, summarise the changes in the value of the USD [2]
between July 2016 and January 2017.
- (b) (i) With reference to Extract 4 and using a demand and supply diagram, [3]
explain how US’ “ballooning trade deficit” might account for the change in
the value of the USD between July and August 2016.
- (ii) Explain one possible reason, other than its trade position, for the change [2]
in the value of the USD between August and December 2016.
- (c) With reference to Table 1, discuss the extent to which the theory of comparative [5]
advantage could explain the pattern of trade between US and Canada.
- (d) With reference to Extract 6, discuss whether steel tariffs would worsen current [8]
and future living standards in China.
- (e) Discuss the view that protectionism is the best way to achieve inclusive growth [10]
in the US.

[Total: 30]

a) Using Figure 1,

i) Describe the trend in crude oil price from January 2016 to July 2018. [2]

Suggested Answer:

Overall trend: Price of crude oil generally increased. [1]

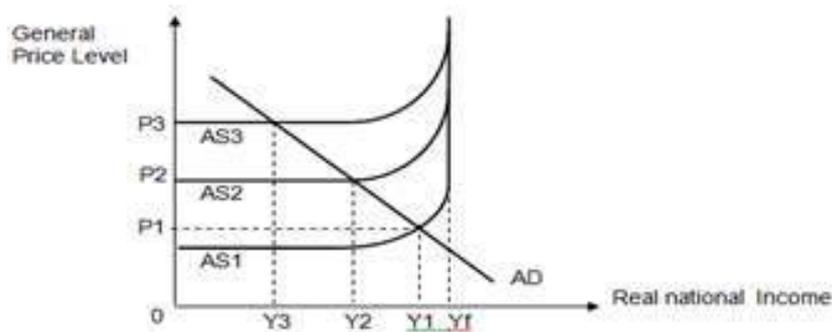
Refinement: However, the price of crude oil fell from February 2017 to June 2017. [1]

ii) With the aid of a diagram, explain the impact of the change in crude oil price on the Singapore economy. [3]

Suggested Answer:

Macroeconomic impact:

Since crude oil is an essential input in many production processes, this implies the demand for crude oil is highly price-inelastic. An increase in the crude oil price will lead to an increase in the cost of production, reducing firms' profit margins and hence a fall in SRAS. Thus, SRAS shifts to the left, leading to a rise in GPL and hence cost-push inflation in Singapore. This thus compromises the macroeconomic goal of price stability.



Note: Students who elaborated on microeconomic impacts will be capped at 2m.

b) Using a diagram, analyse the burden of an increase in the price of natural gas on producers and consumers of electricity. [3]

Suggested Answer:

Explain effect on supply arising from increase in cost of production:

As mentioned in Extract 1, Para 1 "higher cost of natural gas for electricity generation" → natural gas is essential in the production of electricity, thus an increase in the price of natural gas raises the cost of production of electricity and hence lowers firms' profit margins. This reduces the supply of electricity,

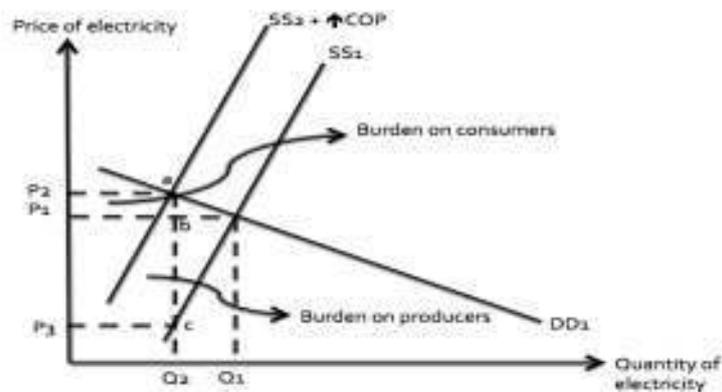
ceteris paribus. Supply curve thus shifts to the left from S_1 to S_2 as shown in the diagram below. [1]

Concept of price elasticity of demand and supply can be used to determine the incidence of an increase in the price of natural gas that is experienced by the producer and consumer of electricity.

Explain relative price elasticities of demand and supply:

In this case, the supply of electricity is likely to be more price-inelastic than demand. This is because it takes a long time for natural gas to be extracted, while consumers have higher availability of substitutes (e.g. crude oil). Therefore, the supply of natural gas is **relatively** more price-inelastic than demand. [1]

Draw diagram:



Explain diagram + linkage back to the question (who bears greater burden?):

As seen in the diagram above, since supply is relatively more price-inelastic than demand, the supply curve is steeper than the demand curve. As mentioned, the fall in supply results in a leftward shift, thereby raising prices. The new burden on consumers is at P_2abP_1 , which is smaller than the burden on producers at P_1bcP_3 . [1] Hence, the producers would bear a greater burden of the increase in price while consumers bear a smaller proportion.

Note: Diagram + explanation of diagram warrants 1m. Alternatively, students can argue that demand is relatively more price-inelastic than supply.

c) Using the concept of opportunity cost, explain one effect arising from the increase in the price of natural gas on:

i) consumers, [2]

ii) SP group. [2]

Suggested Answer:

Define opportunity cost:

Opportunity cost refers to the next best alternative foregone.

- i) **Effect on consumers:**
 The opportunity cost of consumption is the next best alternative forgone---the next best good/ service that the consumers have to forgo due to the increase in the price of natural gas, depending on how consumers rank their choices. [2]

Alternative answer:

A consumer aims to maximise utility, and will consume at $MPB=MP_C$. In this case, the opportunity cost of consumption will be the potential returns which they could have earned from saving (e.g. interest earned from banks), which could be used to finance further consumption. [2]

- ii) **Effect on SP group:**
 A firm aims to maximise profits, and will produce at $MC=MR$ and MC cuts MR from below. In this case, an increase in the price of natural gas raises the cost of production of electricity and hence lowers profit margins. Thus, the opportunity cost would be the expansion of firm foregone, which could be undertaken with the revenue earned instead, such as advertising funds, or even the potential R&D that the SP group could have consider investing in, depending on how SP group ranks its choices. [2]

Any plausible explanation of effect on consumers and producers are acceptable.

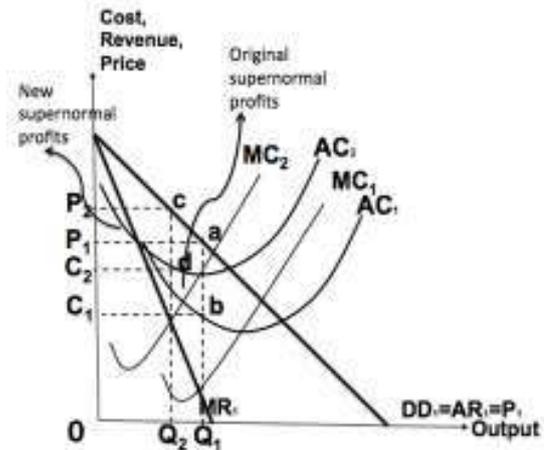
d) Assess the factors that the Singapore government would have considered in their decision not to subsidise solar power. [8]

Suggested Answer:

*Students are to explain the factors that a rational government would consider in not subsidizing solar power. Whilst rational decision-making usually requires students to consider a range of factors, such as benefits and costs, constraints, and external/ 3rd party factors, it is important to note that the question requires students to argue for the case why the Singapore government would have considered in their final decision **not to subsidise** solar power. In other words, the benefits are not required in this context, as the costs would have outweighed the benefits. Finally, as the mark allocation is 8m inclusive of evaluation marks, any **2-3** arguments that provided a range would suffice.*

Introduction
There are various factors that the Singapore government would have considered in whether to subsidise solar power. Extract 2, Para 2 states that “despite the immense benefits, the Singapore government is firm in not subsidising solar power as it may lead to wasteful overconsumption”. By arriving at the final decision not to subsidise solar power, this implies that the possible costs and constraints would outweigh the benefits in subsidising solar power. All these possible factors are assessed below.
Body

	<p><i><diagram is optional></i></p> <p>In addition, the Singapore government may also have considered on the possibility of exacerbating the “increased stress on the grid and other operational challenges” as mentioned in Extract 2, Para 5. Should the Singapore government subsidise solar power, this may only serve further incentivise the firms to consume solar power by a greater extent, where this increase in cost of consumption results in greater inefficient allocation of resources. In turn, this leads to a heightened stress on the grid, implying that the overconsumption of solar power will raise the cost of consumption, thereby lowering profits of firms, and in turn, they may have to pay a higher price for solar power, as Extract 2, Para 5 mentions that the increased cost will have to be “fairly distributed among the various parties (e.g. firms) involved”. As a result, this may defeat the initial purpose of government subsidy, which is to lower cost.</p> <p><u>Linking back to the question:</u> Thus, the possible inefficiencies arising from subsidising solar power would be one possible reason that the Singapore government would have considered in their decision not to subsidise solar power.</p>
<p>Factor (2): 3rd party factor: High crude oil price → rise in investment in solar power by private firms</p>	<p><u>Topic sentence:</u> One other factor that the Singapore government would have considered would be the external/ 3rd party factor, where the crude oil price has led to a rise in the solar power investment undertaken by private firms.</p> <p><u>Elaborate:</u> Extract 2, Para 2 states that “the high price of crude oil...has accelerated investments in renewable energy”, where Extract 2, Para 4 further states that “some incumbent electricity retailers” have been “investing heavily in solar power technology”. The higher price of crude oil has resulted in a higher cost of production, thereby raising AC and MC, and hence profits. This is shown in the diagram below.</p>



Assuming that the firm is an oligopoly that tends to earn supernormal profits, the figure on the left shows initially revenue curves are given by $DD_1=AR_1$ and MR_1 .

Prior to the rise in the price of input, its cost curves are given by MC_1 and AC_1 . At the profit maximising level of output Q_1 where $MR=MC$ and MC cuts MR from below, the firm was initially charging price P_1 per unit of its good. The associated AC of production at this point is C_1 , and hence original supernormal profits earned is at P_1abC_1 . With the rise in the price of input, cost of production rises, resulting in an upward shift of AC & MC curves, where the cost curves become AC_2 and MC_2 respectively. As a result, the new profit maximizing level of output Q_2 where $MR=MC$, the firm is now charging at P_2 per unit of its good, while the AC rises to C_2 . Thus, the new supernormal profits earned is at P_2cdC_2 . There is a fall in supernormal profits earned instead.

<diagram is optional>

As such, with a fall in the profits earned, this gives firms an incentive to invest in a cheaper alternative, and in this case, solar power. This implies that the firms have been allocating resources to invest in solar power. For instance, Extract 2, Para 4 further highlights that Sembcorp Industries has spent \$3.3 million, while Apple is now entirely powered by renewable energy. As such, with many private firms engaging in solar power investment, this lowers the need for the Singapore government to subsidise solar power adoption.

Linking back to the question: Thus, the extensive private investment in solar power would be one possible reason that the Singapore government would have considered in their decision not to subsidise solar power.

<p>Factor (3): External factor: <i>Rise in alternatives/ substitutes to solar power</i></p>	<p><u>Topic sentence:</u> A possible factor for the Singapore government’s consideration would be the rise in the alternatives or substitutes for solar power as an external factor.</p> <p><u>Elaborate:</u> Extract 2, Para 6 mentions about other possible renewable energy besides solar power, such as “energy storage”. This may prove to be a sustainable alternative to solar power due the “rapid cost reduction of batteries” in storing energy. As batteries are essential inputs in energy storage, this implies that a rapid cost reduction of batteries will result in a fall in cost of production for firms if they were to switch over to energy storage instead. This suggests that the fall in the price of substitute (e.g. energy storage) will result in a possible fall in demand for solar power in the future. Also, Extract 2, Para 6 also highlights how energy storage may be a better alternative/ substitute to solar power as it “can better integrate intermittent generation sources such as solar power”, and thus is a better input for final goods such as “electric vehicle”, which is evident in the energy storage investments undertaken by VDE Renewables and Narada from Germany and China respectively. As such, this may raise the demand energy storage and thus lower the demand for solar power in the future. Overall, both factors highlight the possibility of a fall in demand for solar power in the future due to the rise in alternatives/ substitutes. Thus, this may reduce the viability of the need to subsidise solar power in Singapore.</p> <p><u>Linking back to the question:</u> Thus, the rise in alternatives/ substitutes such as energy storage would be one possible reason that the Singapore government would have considered in their decision not to subsidise solar power.</p>
<p>Factor (4): Constraints: Govt budget</p>	<p><u>Topic sentence:</u> Also, another factor that the Singapore government would have considered would be its own budget constraints.</p> <p><u>Elaborate:</u> Extract 2, Para 1 mentions on “tests to explore the viability of placing solar panels on reservoirs” and “installed solar capacity” in various parts of Singapore). This implies that for Singapore to adopt solar power nation-wide, this would require extensive government budget, such as the building of infrastructure necessary for solar power adoption, which would put a strain on the government budget. Even though the Singapore government is currently experiencing a budget surplus and would most probably</p>

	<p>able to subsidise solar power adoption, it will nevertheless still incur high opportunity costs. For instance, if the Singapore government were to allocate more budget for solar power adoption, it will result in less budget to be allocated for other sectors of the economy, such as the provision of public and merit goods. Moreover, the Singapore government should not provide extensive subsidies, as this may also result in over-reliance on the government. Moreover, the government also cannot provide subsidies into the long run, as it may eventually pose the risk of a budget deficit and hence the need to raise taxes for the future generations, resulting in intergenerational inequity & disincentive to work, save and invest. All these thereby imply that subsidies as a policy is not a sustainable solution.</p> <p><u>Linking back to the question:</u> Thus, the government budget would be one important consideration for the Singapore government in its decision not to subsidise solar power.</p>
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Synthesis & Evaluative Conclusion
<p>Overall, to synthesise, the most important consideration that influenced the Singapore government not to subsidise solar power would be the possible inefficiencies in subsidising solar power that arose from the under-pricing of solar power. As the main aim of any rational government is to maximise the welfare of its own citizens, and therefore one of its microeconomic aims would be efficiency. Thus, this suggests that the Singapore government would have taken into consideration how private investment in renewable energies would have already reduced the need for subsidies, lest it results in over-consumption. Moreover, by reducing the possible inefficiencies in subsidising solar power, it also concurrently helps to reduce the strain on the government budget.</p> <p><u>Evaluative conclusion:</u> Overall, the government needs to adopt a rigorous cost-benefit analysis before embarking on its final decision not to subsidise solar power. Nonetheless, perhaps the decision to be made by the Singapore government was not a binary one where it simply decides whether to subsidise or not subsidise solar power in Singapore. Rather, what was more relevant as a consideration, is the extent and pace to which solar power or renewable energies can be undertaken. Given that renewable energies may aid in reducing negative externalities, it would be wise for a rational government to implement other policies to accelerate the pace of renewable energies in Singapore. This is evident in Extract 2, Para 4 where it is states that “the government implemented initiatives to spur solar power adoption”, such as JTC giving Sun Electric the rights to install solar panels on rooftops.</p>

Mark Scheme

Level	Knowledge, Application, Understanding & Analysis	Marks
L2	Answers in this level will give a sound analysis on factors that a rational government would have considered in their final decision not to subsidise solar power.	4-6
L1	Answers in this level will give a superficial analysis on factors that a rational government would have considered in their final decision not to subsidise solar power. Capped at 3m if only 1 factor is identified & elaborated.	1-3
E	Marks awarded for evaluating analysis presented on which factor is relatively more significant for a government to consider. A well-reasoned conclusion is provided.	1-2

e) In view of the possible economic impact, discuss whether the liberalisation of the electricity market in Singapore can ever be justified. [10]

Suggested Answer:

Students are to elaborate on the positive and negative impacts of liberalizing the electricity market. Good scripts would span across the various stakeholders of the economy. Finally, as the mark allocation is 10m inclusive of evaluation marks, any 2-3 arguments that provided a range would suffice.

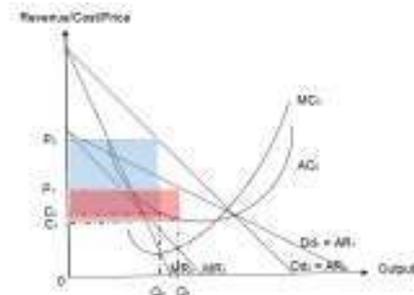
Introduction
<u>Define:</u> Liberalisation means the opening up of market to greater competition.
<u>Model of framework:</u> Liberalisation of the electricity market implies that the Singapore government would reduce the legal barriers to entry. This allows firms to enter more easily, resulting in an influx of firms and hence heightened competition. The positive and negative impact of such liberalisation will be discussed below.

Body	
<u>Thesis:</u> Liberalisation of the electricity market in Singapore is justified	<u>Anti-thesis:</u> Liberalisation of the electricity market in Singapore is not justified
<p><u>↓allocative inefficiency:</u></p> <ul style="list-style-type: none"> * Firstly, liberalisation of the electricity market in Singapore is justified because it can cause ↓allocative inefficiency in the electricity market * <u>Define allocative efficiency:</u> Refers to the situation whereby resources are allocated in such a way that the right quantity is 	<p><u>Lower profits for electricity providers:</u></p> <ul style="list-style-type: none"> * In the face of liberalisation of the electricity market leading to ↑ intense competition and ↓market power, the firm will no longer be able to exert market power to restrict output and push up the prices of providing electricity to maximise profits.

produced for each good. In this case, the good in question is electricity.

- * Implies Pareto Optimality → Impossible to change the allocation of resources in such a way so as to make someone better off without making someone else worse off.
- * Condition: $P=MC$ → Price (P) = value consumers place on the last unit of electricity consumed; Marginal cost (MC) = additional cost that producers incur from producing one more unit of electricity produced
- * Initially, the initial demand curve of the electricity firm is price-inelastic. Thus, its demand and revenue curves are steep. It produces at profit-maximising conditions at i) $MC=MR$; ii) MC cuts MR from below, and thus charges at P and produces at Q.
- * However, with liberalisation → ↑influx of firms → ↓market power as firms' demand become more price-elastic due to the ↑availability of substitutes + ↓demand → demand and revenue curves become gentler and also shift to the left from DD/AR to DD1/AR1. Assuming same cost structure, the firm now has ↓market power to charge very high prices as a result of ↑competition. Hence the price charged is ↓ at P1. The new price P1 is now closer to the marginal cost (distance XZ < distance AC). Deadweight loss ↓ to area XYZ.

- * With ↑availability of substitutes and ↑competition, firms will experience ↓demand, and also a more price elastic demand curve. Thus, the demand and revenue curves will shift to the left, and become gentler. This ↓firm's ability to raise/set price without experiencing a more than proportionate ↓quantity demanded, ceteris paribus, thereby earning ↓TR. Assuming COP is constant, ↓π.



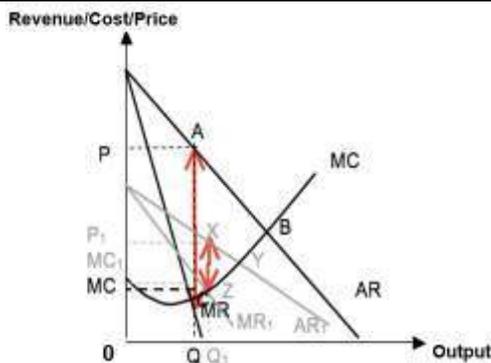
*

Link back to the question:

- * Hence, liberalisation of the electricity market is not justified because of ↓π earned by producers and hence the latter lose out.

Inability to reap extensive internal EOS:

- * However, should the government liberalise the electricity market, it leads ↓market share of each firm. This ↓ability to reap extensive internal economies of scale (EOS) to achieve cost advantage.
- * **Define internal EOS:** Defined as a ↓unit COP due to the firm's own expansion, independent of industry
- * However, in this case, with liberalisation, the firm now is less able to reap extensive internal EOS, and hence the unit cost of production is higher now than before.



*

Link back to the question:

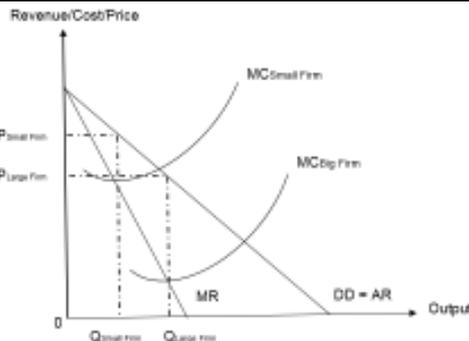
- * This is supported by Extract 3, Para 2 “with competition, consumers stand to benefit from competitive pricing”. Hence, liberalisation of the electricity market is justified because welfare loss has been reduced, while price has reduced from P to P1, increasing consumer surplus. Consumers benefit.

↑ dynamic efficiency:

- * Definition: Considers whether firms are more likely to develop efficient techniques or innovates overtime
- * Assuming Theory of Contestable Markets holds, where the threat/fear of competition arises → incumbent firms are encouraged to innovate & engage in R&D, such as process & product innovation to continue stronghold in the market & deter entrance of new firms
- * This is supported by Extract 3, Para 4 “liberalisation can give rise to innovative partnerships, and even increase the uptake of technology solutions such as IoT applications and asset management tools”

* Process innovation:

- ✓ Effect on producers: (+) Cost advantage: innovates production processes → · ↑ efficient → ↓



- * Explanation of diagram: Based on the diagram above, the firm’s initial MC curve is at MCbig firm, and is able to reap more internal EOS, and therefore the MC curve is lower. As such, based on π-max conditions, where MC=MR & MC cuts MR from below, it charges at 0Pbig firm & produce at 0Qbig firm. However, with liberalisation of the electricity market, the firm now is unable to reap as much internal EOS as before as it becomes smaller due to ↓ market share. Thus, the firm’s new MC curve is ↑ at MCsmall firm. As such, based on π-max conditions, where MC=MR & MC cuts MR from below, it charges at 0Psmall firm & produce at 0Qsmall firm. Overall, the unit COP is ↑ than before liberalisation.

* Effects on producers: (-) Lost Cost advantage → ↑ COP → ↓ π

* Effect on consumers: (-) Assume ↑ COP is passed on in the form of ↑ P → ↓ CS

Link back to the question:

- * Hence, liberalisation of the electricity market is not justified because of COP arising from the inability to reap extensive internal EOS. Both producers and consumers may lose out.

COP → □ ↓ AC & MC → AC & MC curves shift downwards → · ↑ π

- ✓ **Effect on consumers:** (+)
Assume ↓ COP is passed on in the form of ↓ P → · ↑ consumer surplus
- ✓ This is supported by Extract 3, Para 3 → “retailers are...ramping up their back-end infrastructure”. For example, “Best Electricity Supply, part of the Prime Group which includes Prime Taxi, is investing heavily to build up an efficient and reliable IT system for sign-ups, billing, and payment collection”

* **Product innovation:**

- ✓ **Effect on producers:** (+)
Revenue advantage: ↑
Uniqueness assuming R&D is successful → ↓ Eab value (↓ degree of substitutability) → change T&P → ↑ DD, cp → ↑ DD/AR & MR → DD/AR & MR curves shift right → ↑ π
- ✓ **Effect on consumers:** (+) ↑
quality products + ↑ variety → ↑ consumer welfare & satisfaction
- ✓ This is supported by Extract 3, Para 2 → “enhanced service standards and innovative packages from electricity retailers” & Extract 3, Para 3 “targeted pricing plans to suit different consumers’ needs”

* Link back to the question: Hence, liberalisation of the electricity market is justified because profit may rise for firms, while consumers will gain from an increase in consumer surplus/welfare & satisfaction.

↓ **X-inefficiency:**

- * Defined as organisational complacency due to the lack of

competition where firm has little or no incentive to keep costs low.

- * In the face of liberalisation of the electricity market, where more electricity providers such as Sunseap joins in the market, they tend to be less X-inefficient as they are now less complacent arising from the rise of competition → cost is lower than the minimum possible costs as cost controls become stricter or less lax.
- * This shows that liberalisation of the electricity market → firm to be ↓ complacent & hence make ↑ efficient usage of resources
- * Thus, liberalisation of electricity market → ↓ COP → shift AC & MC downwards, ceteris paribus → ↑ π

↓ Inequity:

- * Moreover, liberalisation of the electricity market can reduce the extent of inequity.
- * Firms with ↑ market power → earns supernormal π at the expense of consumers by extracting consumer surplus → e.g. selling at ↑ P → unfairness/ inequity ensues as firms exploit consumers → turns consumer surplus into TR & supernormal π → firm is allowed to grow wealthy at the expense of consumers
- * However, with liberalisation, the demand becomes ↓ and demand becomes more price-elastic due to ↑ availability of firms → ↓ supernormal π due to ↑ market share → ↓ extent of inequity → Benefit to Society
- * **Effect on consumers:** (+) Low-income households will be better off → improve income distribution due to ↓ extent of inequity

* **Evaluation:** If supernormal π are ploughed back into R&D → benefit consumers. However, with ↓ supernormal π → consumers may not benefit

↓ **Switching costs for consumers**

* As mentioned in Extract 3, Para 6 “seamless process...the (switching) process will take a few days, but there will be no interruption to the electricity supply in the process” → No disruption to electricity supply, yet consumers will get to benefit out of the many choices in electricity supplier because of liberalisation of the electricity market → Benefit to consumers

Synthesis & Evaluative Conclusion

Relevant judgement MUST already be based upon a well-elaborated two sided discussion.

Possible judgement could include:

- * the desirability of liberalisation of the electricity market may depend upon the extent to which electricity markets are regulated
- * the desirability may depend upon the extent to which existing dominant firms fear entry by other firms (i.e. degree of contestability)
- * the desirability may depend upon exactly how many firms there are in the market. (For example, despite liberalisation of the electricity market, there still exists only a few large firms competing against each other, then a less competitive market structure may exist in reality).

Liberalisation of the electricity market is beneficial for the consumers as mentioned in Extract 3, Para 7 “Having more choices is almost always beneficial for the consumer”. However, in Singapore context, given her small size, it is also mentioned that “it is still unclear if the local market is large enough for the many retailers to survive”. Therefore, EMA will need to keep a watchful eye to regulate the electricity market to ensure that with the entry of new players, service standards, packages offered by electricity retailers as well as reliability of their electricity supply do not get compromised, and that the relevant stakeholders in society (e.g. consumers) are not exploited. Hence, this suggests that constant checks can be conducted to ensure that electricity charges remain affordable.

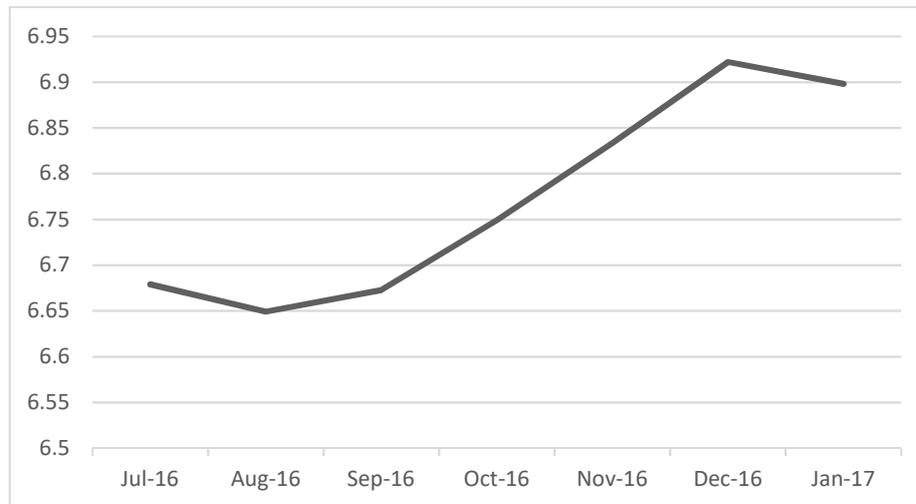
Mark Scheme

Level	Knowledge, Application, Understanding & Analysis	Marks
L2	Answers in this level will give a sound analysis on arguments that illustrate the pros and cons of liberalisation of the electricity market.	5-7
L1	Answers in this level will give a superficial analysis on arguments that illustrate the pros and cons of liberalisation of the electricity market.	1-4
E	Marks awarded for evaluating analysis presented on weighing the relative pros and cons of liberalisation of the electricity market. A well-reasoned conclusion is provided.	1-3

Question 2

All hail, America!

Figure 2: Yuan per USD, monthly average



Source: *International Monetary Fund* (www.imf.org), 5 July 2018

Table 1: US Trade with Canada - Top 5 Exports and Imports, 2016

Top 5 US Exports to Canada		Top 5 US Imports from Canada	
1.	Other parts and accessories of vehicles	1.	Passenger cars, new and used
2.	Passenger cars, new and used	2.	Crude oil
3.	Trucks, buses and special purpose vehicles	3.	U.S. goods returned, and reimports
4.	Industrial machines, other	4.	Other parts and accessories of vehicles
5.	Petroleum products, other	5.	Lumber

Source: *United States Census Bureau* (www.census.gov), 5 July 2018

Extract 4: US fights for protectionism

Tapping into economic discontent, President Donald Trump has argued for protectionism and asserted that decades of free trade policies were responsible for the collapse of the American manufacturing industry and its ballooning trade deficit. He has been feeding on the perception among many Americans that globalisation has brought more pain than gain. For example, globalisation has brought cheap consumer goods into the country, costing domestic jobs and depressing wages. Outsourcing of jobs to cheaper markets has also been a concern.

President Trump wants to renegotiate the North American Free Trade Agreement which lowers trade barriers between the US, Canada and Mexico and rejected claims that the deal has helped the US economy create more jobs and reduce trade deficit by opening up export markets. He has also argued that since China joined the World Trade Organisation, Americans have witnessed the closure of more than 50,000 factories and the loss of tens of millions of jobs. He wants the US government to label China a “currency manipulator” and has lambasted the rapidly growing Asian economy for “unfair subsidy behaviour”.

Source: *The Guardian*, 9 November 2016

Extract 5: Trump's 'America First' Policies

The America First Policies seek to support citizens in America and put America first. Some of the key policy initiatives include the renegotiation of trade deals to expand trade in ways to be fairer for all Americans through jobs creation, implementation of huge tax cuts to stimulate spending and attract foreign direct investments, as well as reformation of the immigration system to prioritise the needs of Americans.

While the policies claim to promote greater inclusivity by reengaging more workers to be employed in more productive jobs and create an environment that fosters new business formation and healthy competition, critics argued that America is trying to achieve their objectives at the expense of other countries. America should instead look into strategies to better prepare their workers for the future. After all, putting America first may not necessarily put all American workers ahead.

Source: *Various*

Extract 6: The Looming Global Trade War

The World Trade Organisation (WTO) used to update themselves every so often through rounds of negotiation designed to spread the benefits of trade wider in ways on which all could agree. But disagreements between rich and poor countries over whether the poor should get special treatment in the name of development mean that no new round has been completed for more than 20 years. Things that really ought to be dealt with have thus just kept piling up. It didn't help also that China, which joined the WTO in 2001, brought to the party a model of trade-distorting state-infused capitalism beyond anything the existing rules had been shaped for.

Desperately in need of new rules but unable to create them, the WTO has been disappointing many of its members, perhaps none more so than America. The organisation has been able to do little to stop China's state-owned enterprises from exporting the surpluses created by their subsidised overcapacity, thus overwhelming producers elsewhere.

Yet US tariffs on aluminium—where imports from China matter more—are less than half what they are on steel. Steel tariffs on the other hand barely scrape China, but hurt Canada, the European Union (EU), South Korea and Mexico severely as most of the steel imports come from these US allies. The impact of tariffs in general on China is muted further by its external rebalancing – switching from external demand to domestic demand in generating growth – since the global financial crisis.

American steel imports account for about a third of the country's steel use, and around 7% of the world's total trade in the metal. According to the commerce department a tariff of 24%—the level it recommended—would have been enough to crimp imports by a third in 2017, equal to roughly 10% of demand.

An analysis by the Trade Partnership, a consultancy, predicts that increases in the price of steel and aluminium under these tariffs will, in the short-term, create 33,000 metal-making jobs and destroy 179,000 metal-dependent ones. In the context of the whole economy, though, such numbers are not that big. America added more than 2million net jobs during the past year.

The biggest question is over Canada and Mexico, the other two members of the North American Free-Trade Agreement (NAFTA). In 2016 Canada sold 88% of its steel exports to America, Mexico 73%; a continent-wide web of supply chains links all three economies. In previous rounds of tariff imposition, both neighbours were exempt. The White House has seemed to promise carve outs for Canada and Mexico, and perhaps other allies. But Mr Trump

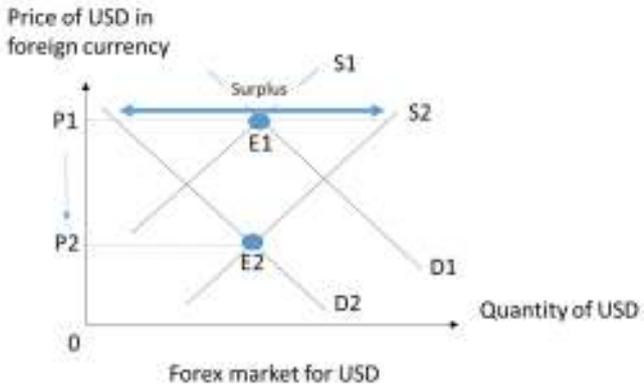
has tweeted that such exemptions would depend, perhaps in the long term, on the other two countries giving him the concessions that he wants in NAFTA renegotiations. Both the Canadian and Mexican governments have said that, if hit by tariffs, they will strike back quickly and decisively.

The EU—which sells more steel to America by value, if not by volume, than anyone else—has also said it will retaliate, and has been specific about how. It has promised to launch a formal WTO dispute, and is poised to impose its own steel safeguard measures should it face a surge of imports turned away from America. “If the EU does not act, our steel industry will pay the bill for protectionism in the US,” warned the head of WV Stahl, Germany’s steel-industry trade group. The EU has also drawn up a list of American exports it would hit with a “reciprocal” 25% tariff for a total of €2.8billion (US\$3.5billion).

However, Mr Trump seems likely to take even a proportionate retaliation badly. He has said that he would meet such a response with tariffs on cars. Given that America imported €38bn of cars from the EU in 2016 that would be a big escalation.

Source: *The Economist*, 8 March 2018

Questions

(a)	<p>With reference to Figure 2, summarise the changes in the value of the USD between July 2016 and January 2017.</p> <p>Overall appreciation. [1] Depreciation between Jul & Aug-16 & Dec-16 & Jan-17. [1]</p>	[2]
(b)	<p>(i) With reference to Extract 4 and using a demand and supply diagram, explain how US’ “ballooning trade deficit” might account for the change in the value of the USD between July and August 2016.</p> <p>Using Ballooning Trade Deficit to infer market movement of USD: $M > X \rightarrow$ $\uparrow SS_{USD}$: US residents buy more imports \rightarrow Sell USD to buy foreign currency \rightarrow $\uparrow SS_{USD}$ from S_1 to S_2 $\downarrow DD_{USD}$: Foreigners buy less of US exports \rightarrow $\downarrow DD_{USD}$ from D_1 to D_2</p>  <p>\rightarrow surplus of USD @ $P_1 \rightarrow$ USD depreciation from P_1 to P_2</p> <p>[2m: Trade deficit $\rightarrow M > X \rightarrow$ Surplus \rightarrow Depreciation 1m: Diagram + explanation of either $\uparrow SS$ or $\downarrow DD$]</p>	[3]

	<p>(ii) Explain one possible reason, other than its trade position, for the change in the value of the USD between August and December 2016.</p> <p>Currency manipulation by China (Ext 4 Para 2) [2]: In order to keep Chinese exports priced competitively in USD → Buy USD with Yuan so as to → ↑DDusd → USD appreciation</p> <p>OR</p> <p>KFA or invisibles surplus more than offsetting the deficit in BOT [2]: net surplus on the BOP → DDusd > SSusd → appreciation → elaborate using any possible reason for surplus on KFA or invisibles such as boost in confidence level stemming outflow of FDI/encouraging inflow of FDI etc</p>	[2]
(c)	<p>With reference to Table 1, discuss the extent to which the theory of comparative advantage could explain the pattern of trade between US and Canada.</p> <p>Define: The theory of comparative advantage states that countries can mutually benefit from specialisation and trade if they were to specialise in the production of goods that they incur a lower opportunity costs in and trade for goods where they incur a higher opportunity costs in producing. Comparative advantage will explain the composition of goods a country trades for.</p> <p>With reference to Table 1, specialisation is observed where US exports trucks, buses, special purpose vehicles, industrial machines and petroleum products to Canada due to lower opportunity costs incurred as compared to Canada in the production of these capital-intensive goods. Canada, on the other hand, exports crude oil and lumber due to specialisation in these areas. Both countries get to trade for goods which they do not produce within their countries. [2]</p> <p>However, the theory of comparative advantage does not explain why US and Canada are both exporting passenger cars and other accessories parts which they are producing domestically. Instead, the reason for exporting products which US and Canada are already producing could be due to intra-industry trade arising from tastes and preferences where both countries seek to import a variety of passenger cars and other accessories parts to widen the choice options for consumers in their countries. [2]</p> <p>Hence, to a small extent, the theory of comparative advantage explains pattern of trade between US and Canada. While the theory of comparative advantage explains the supply side reasons for the pattern of trade between US and Canada, the intra-industry trade arising from tastes and preferences explains the demand side for pattern of trade. [1]</p>	[5]
(d)	<p>With reference to Extract 6, discuss whether steel tariffs would worsen current and future living standards in China.</p> <p><u>Current & Future SOL would worsen</u></p> <ul style="list-style-type: none"> - Current: Worsen because ↑P_{foreign currency} of exports → fall in Qd for exports → ↓X_{yuan} (= P_{yuan} × ↓Qx) → ↓AD → multiple ↓ in income, output and employment → lower purchasing power for gds & svc & less real output to be enjoyed → worsen MSOL. Hardship associated with ↑ unemployment → social discontent & ↑ crime rates to make ends meet → adversely affects living environment → worsen NMSOL. (The greater the E_{px} → the greater ↓X_{yuan} → the greater the worsening in SOL) - Current: Worsen because of domino effect i.e. steel tariffs on China's trading partners such as EU and Canada reduce their income and purchasing power 	[8]

for Chinese exports $\rightarrow \downarrow X \rightarrow \downarrow AD \rightarrow$ multiple \downarrow in income, output and employment \rightarrow lower purchasing power for gds & svc & less real output to be enjoyed \rightarrow worsen MSOL. Hardship associated with \uparrow unemployment \rightarrow social discontent & \uparrow crime rates to make ends meet \rightarrow adversely affects living environment \rightarrow worsen NMSOL. (The more EU and Canada imports from China, the greater the worsening of SOL)

- **Future:** Worsen because of fall in investment in steel industries in China \rightarrow slows down potential growth \rightarrow real output increases more slowly in the future \rightarrow future MSOL lower than it would otherwise be. (Potential growth may become negative if capital depreciates faster than it is being replaced via investment.)

Current & Future SOL might not worsen but could in fact improve

- **Current:** Improve because less pollution due to reduced steel production \rightarrow improve living environment \rightarrow improve NM SOL
- **Future:** Improve because less environmental degradation and resource depletion \rightarrow sustainable growth \rightarrow improve both MSOL and NMSOL
- **Future:** Improve due to policies to develop other potential drivers of growth \rightarrow reduce reliance on steel industry & increase I in other potential industries \rightarrow potential growth \rightarrow improve MSOL
- **Future:** Improve due to retaliatory action of other US trade partners such as Canada and S Korea (tit-for-tat tariffs on US imports into their countries) \rightarrow look to import from other countries such as China $\rightarrow \uparrow X$ of China $\rightarrow \uparrow AD \rightarrow$ multiple \uparrow in income, output and employment $\rightarrow \uparrow$ purchasing power for gds & svc & \uparrow real output to be enjoyed $\rightarrow \uparrow$ MSOL. \downarrow unemployment $\rightarrow \downarrow$ social discontent & \downarrow crime rates to make ends meet \rightarrow positively affects living environment $\rightarrow \uparrow$ NMSOL. (The more EU and Canada imports from China, the greater the improvement of SOL)

Overall impact on SOL (Evaluative conclusion)

Current: worsen but to a small extent bec:

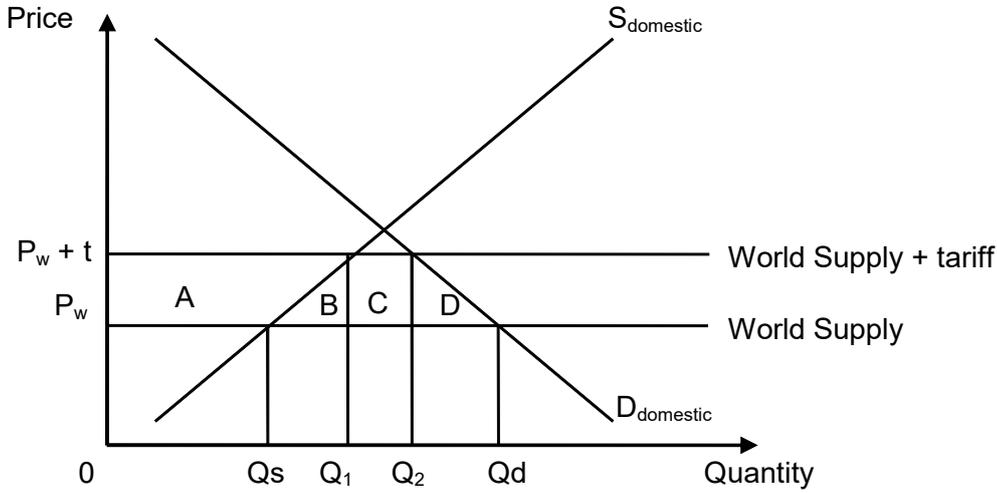
- China is not key exporter of steel to US (Ext 6 Para 3)
- China's is rebalancing its growth drivers (Ext 6 Para 3) – exports no longer a key driver of growth which is key contributor to MSOL

Future: Key determinant on future impact will be policy response: Negotiate trade agreements with other countries/partners + retraining and education to facilitate redeployment of workers displaced from steel industries in other industries \rightarrow mitigate negative impact of US steel tariffs on China by reducing reliance on steel and exports industries as key drivers of growth, & reducing reliance on US as key trading partner

Mark Scheme

Levels of Response	Descriptor	Marks
L2	Explains that steel tariffs can both positively and negatively impact China's current & future SOL 6m require a response that recognises both material and non-material SOL.	4-6m
L1	A narrowly scoped response that explains - either positive or negative impact - impact on either current or future SOL	1-3m

Evaluation

	E	Overall evaluative stand on the <u>extent</u> of impact on China with justification that appeals to evidence from the case material.	1-2m	
(e)	<p>Discuss the view that protectionism is the best way to achieve inclusive growth in the US.</p> <p>Protectionism refers to the partial or complete protection of domestic industries from foreign competition in domestic markets.</p> <p>Inclusive growth is economic growth that is distributed fairly across society and creates opportunities for all. (Note: Inclusive growth should be seen to benefit not just consumers in terms of equity and employability, but also allowing the relatively smaller firms in gaining better competitive grounds, having a share of the economic growth, in competing with the larger firms.)</p> <p>With reference to Extract 6, the protectionist measure put in place by U.S to protect their home industry is in the form of tariffs. Tariffs are taxes levied by government on imports.</p> <p><u>Thesis: Protectionism is the best way to achieve inclusive growth</u></p> <p>Protectionism in the form of tariffs raises the prices of imports into US and it seeks to control the level of imports and protect the U.S domestic industries as domestic production increases from Q_s to Q_1, a level that is closer to the level before trade. The crippling manufacturing industries will thus manage the external competition better and this reduces the rate of unemployment.</p>  <p>The use of trade barriers will help to reduce the imported goods to Q_1Q_2 from foreign countries into US. Assuming ceteris paribus, the expenditure on imports will thus reduce and help to improve the situation of current account deficit. This in turn will improve the net exports, $(X-M)$, increasing AD and hence higher real national income and employment via the multiplier effect.</p> <p>Hence, the imposition of tariffs creates jobs in U.S, improving the employability of the locals. At the same time, U.S domestic firms and infant industries are also able gain better grounds to compete with foreign competition given that tariffs deters potential competition from foreign countries in U.S. These intended outcomes from the effects of tariffs in turn improves the inclusive growth in U.S.</p>			[10]

Anti-thesis: Protectionism not the best way as it worsens inclusive growth

However, protectionism may not be the best way to achieve inclusive growth as it may worsen inclusive growth instead of improving it. As seen from Extract 6, *“An analysis by the Trade Partnership, a consultancy, predicts that increases in the price of steel and aluminium under these tariffs will, in the short-term, create 33,000 metal-making jobs and destroy 179,000 metal-dependent ones.”* While the imposition of tariffs may have created jobs in the metal-making industries, there were also jobs destruction in industries which relied on metals as factor of productions as these firms’ profits were reduced due to higher cost of production due to the imposition of tariffs. In this context, the jobs created for a small group of workers brought about by tariff came at the expense of the jobs from a larger group which goes against the intent of inclusive growth.

Furthermore, Extract 5 states that, *“After all, putting America first may not necessarily put all American workers ahead.”* This implies that tariffs should only generally be used as a short-run measure to temporarily protect the industries in US and continue to provide jobs for them as an immediate measure. It should not be prolonged as a long term measure even after the issue has been resolved. As U.S looks deeper into the underlying reason behind their ballooning trade deficit, it is a result of their loss of exports competitiveness which should be dealt with. In the long run, US will lose out to more competitive countries if they continue with the use of tariffs and possibly retaliation from other countries as supported by Extract 6, *“The EU—which sells more steel to America by value, if not by volume, than anyone else—has also said it will retaliate,”* the recurring issue of job losses within the country will persist, worsening the inclusive growth in U.S as job opportunities for different sectors will be destroyed. Hence, instead of achieving inclusive growth, the situation will worsen causing further job losses, especially in the exports industries.

It should also be noted that protectionism may also result in certain firms in the protected industries gaining greater market dominance, leading to a greater share of the gains from economic growth to reside with the bigger firms. Eventually, the US firms in the steel making industries which have gained market dominance may engage in practices which seek to eliminate the smaller firms to further strengthen their market power. This will result in a worse off outcome for smaller U.S firms which are struggling to continue production and remain profitable in the industry, worsening inclusive growth from the firms’ perspective.

Anti-thesis: Supply side policy is a better approach to achieve inclusive growth

U.S should instead adopt a more sustainable policy such as the supply side policy to achieve inclusive growth. From Extract 5, *“critics argued that America is trying to achieve their objectives at the expense of other countries. America should instead look into strategies to better prepare their workers for the future.”* which implies that supply side policies rather than protectionism is perceived to be the better approach to achieve inclusive growth. Supply side policies such as the training of lower skilled workers, allows their skillsets to improve, raising their job mobility and efficiency level. This in turn allows workers to gain better job employability opportunities across various industries.

At the same time, supply side policies such as subsidies can be provided to the smaller firms in US to allow them to have a better headstart in their innovation initiatives through a lower cost of production to engage in researches to develop more cost-efficient methods and gain a more competitive edge against the relatively bigger firms.

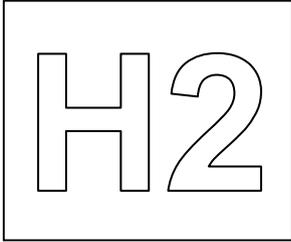
However, the use of supply side policies requires the government to have a healthy budget in order for the policies to be financed in a sustainable manner. Given the situation where U.S is in a huge budget deficit, the implementation of the mentioned policies may be a challenging task. Despite that, the U.S government should seek to explore various methods to arrive at a better fiscal position in order to implement the supply side policies which will help achieve inclusive growth which will be beneficial to the country in the long term.

Evaluation:

Overall, protectionism is more appropriate as a policy to solve the immediate issues such as the trade deficit rather than being used as a long term policy to achieve inclusive growth. The achieving of inclusive growth is not automatic and it requires the deliberate intervention from the government to achieve the intended goal. U.S should adopt a more sustainable method to achieve inclusive growth and they should adopt policies to reduce the budget deficit of the U.S government in order to implement supply side policies to achieve inclusive growth. Depending on the policies adopted, there may be repercussions on the U.S economy. While U.S seeks to achieve inclusive growth, their current protectionist strategies adopted may be at the expense of the world economy.

Mark Scheme

Level of response	Descriptor	Marks
L2	Balanced and developed analysis on how protectionism and one other proposed policy may achieve inclusive growth.	5-7
L1	Analysis with under-developed explanation and/or one-sided argument.	1-4
Evaluation		
E	Rationalised stance and judgment on whether protectionism is the best way to achieve inclusive growth. Consideration of the sustainability of protectionism as a measure and the need for a complementing policy.	1-3



**TAMPINES JUNIOR COLLEGE
JC2 PRELIMINARY EXAMINATION**



ECONOMICS

Paper 2

9757/02

Tuesday, 11 Sept 2018

2 hours 15 minutes

Additional Materials: Writing Paper

READ THESE INSTRUCTIONS FIRST

Write in dark blue or black pen.

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

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

Paper 2 (Essay) [60%]

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.

Submit each section separately.

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

Answer **three** questions in total.

Begin **each question** on a **fresh sheet of paper**. Section A and B are to be submitted **separately**.

Section A

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

1. Explain how economic agents such as consumers and firms behave rationally and discuss the extent to which elasticity concepts are useful to firms and governments in making rational decisions. [25]

2. The blockbuster merger between American telecommunications giant, AT&T Inc. and American media and entertainment company, Time Warner (home to huge entertainment and news brands such as HBO, CNN, and Warner Bros), which is worth about \$85.4 billion had been approved by the United States District Court in Washington.

Source: The New York Times, June 12 2018

Compare the different strategies which firms in the real world would deploy to compete for greater profits and discuss whether businesses should always merge to dominate in all product markets so as to maximise their profits earned. [25]

3. (a) Explain how imperfect information and factor immobility may result in market failure. [10]
(b) Discuss the view that government intervention will always result in a more efficient allocation of resources than leaving the market alone. [15]

Section B

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

4. China announced proactive fiscal policies aimed at stabilising growth in the world's second largest economy as it grappled with excess capacity and sluggish demand.

Adapted from The Economic Times, 9 September 2015

- (a) Using the circular flow of income, explain how an increase in government spending can lead to a bigger change in national income. [10]
- (b) Discuss whether conflict in macroeconomic objectives is the most important reason that underlies the use of fiscal policy in any economy. [15]

5. As a result of careful budgeting, the overall Singapore government budget has recorded more surpluses than deficits in the past 20 years.

Source: Singapore Budget 2017, www.singaporebudget.gov.sg

- (a) Explain the consequences on an economy of failing to achieve its macroeconomic aims. [10]
- (b) Assess the likely impact of a budget surplus on the Singapore economy. [15]

6. President Xi Jinping told the world's major economies to remain true to the philosophy of building an open global economy that navigated the challenges of the financial crisis. He called on G20 members such as Singapore, Germany and the United States, to remain committed as it is vital in reenergising the global economy.

Source: Asiaone, 11 July 2017

To what extent can policies undertaken by the Singapore government mitigate the negative impacts of building an open global economy and reap its benefits to the fullest? [25]

END OF PAPER

Explain how economic agents such as consumers and firms behave rationally and discuss the extent to which elasticity concepts are useful to firms and governments in making rational decisions. [25]

Suggested Answer Approach:

Introduction for first part question:

- ♥ Define what is meant by “behave rationally”:
 - “Behave rationally” refers to making decisions rationally i.e. maximising self-interest whereby decisions are made at the margin.
 - Economic agents such as consumers and firms will select the alternative that will best maximise their personal well-being when called upon to decide between choices. In selecting the best alternative, these economic agents are said to have made a *rational* choice. We assume that
 - Consumers aim to maximise their satisfaction (welfare/utility)
 - Firms aim to maximise profits.

Essay Development for first part question:

- ♥ Explain how individual consumers whose objective is to maximise their satisfaction (welfare/utility) “behave rationally”:
 - Define MB and MC from consumers’ perspective
 - Draw diagram to illustrate + diagram explanation:

When MB is more than MC at $0Q_1$ (or any output below Q_e), the total net benefits from consumption rises as the rational consumer increases consumption. Thus, the consumer should consume more units to maximise utility.

When MB is less than MC at $0Q_2$ (or any output beyond Q_e), the total net benefits from consumption falls as the rational consumer increases consumption. Thus, the consumer should consume lesser units to maximise utility.

Utility is maximised for the rational consumer when the total net benefits are maximised at $0Q_e$ whereby $MB=MC$. At Q_e , consumption is optimal.
- ♥ Explain how firms whose objective is to maximise their profits “behave rationally”:
 - Define MR and MC from firms’ perspective
 - In the following analysis, a big firm, e.g. monopoly, would make rational decision of maximising profits by producing at an output where marginal cost is equal to marginal revenue ($MC=MR$) and MC cuts MR from below.
 - Draw diagram to illustrate + diagram explanation:

When MR_1 is more than MC_1 at $0Q_1$ (or any output below Q_M), this means that the addition to total revenue from the sale of the last unit of output is greater than the additional cost incurred to produce it. Hence, the monopolist should produce more and increases output towards Q_M because it results in an increase in the firm’s profit.

When MR_2 is less than MC_2 at OQ_2 (or any output beyond Q_M), this means that the addition to total revenue from the sale of the last unit of output is less than the additional cost incurred to produce it. Hence, the monopolist should produce lesser and reduce output towards Q_M because firm can reduce cost by reducing its output, leading to an increase in profits.

Profits are maximised for the monopolist when $MC=MR$ with OQ_M being produced and priced at P_M and monopolist cannot increase its profits any further by changing its output. At Q_e , production is optimal.

(Analysis on perfectly competitive market would also be acceptable.)

Essay Development for second part question:

Thesis: Elasticity concepts such as E_P , E_Y and E_{AB} are useful to firms in making rational decisions *(Explain any 2 elasticity concepts with relevant examples)*

Firms: seek to maximise their profits through maximising total revenue and minimising total costs.

The concepts of elasticity of demand namely E_P , E_Y and E_{AB} could be used to firms to maximise total revenue and assuming total cost remains constant, firms will be able to maximise their profits.

♥ Price Elasticity of Demand (E_P)

Define:

- E_P measures the degree of responsiveness of the quantity demanded of a good to a change in its price, ceteris paribus.

State how E_P helps firms make rational decisions:

- E_P is relevant in helping firms make rational decision on their pricing and non-price strategies.

Apply how E_P helps firms make rational decisions:

Explain the pricing strategy:

- In this case when demand for bubble tea is price-elastic, bubble tea retailers such as R&B Tea should lower prices of their bubble tea so that there is a more than proportionate increase in quantity demanded for their bubble tea, ceteris paribus.

Explain the non-price strategy:

- R&B Tea can implement non-price strategies to make demand for its bubble tea even more price-inelastic. It can spend on simple, small-scale advertising such as online advertising to set their product (bubble tea) apart from their competitors such as neighbourhood bubble tea shops and to carve out a niche market for itself. When product differentiation in terms of advertising is successful, it creates brand loyalty, making consumers feel that there are no close substitutes and they are not willing to purchase rival products leading to a more price inelastic demand. Hence, R&B Tea can increase prices of its new innovative / signature products without fearing a huge fall in their quantity demanded.

Overall, the total revenue rises. Thus, E_P helps R&B Tea make rational decision on its pricing and non-price strategies so as to increase sales revenue. Assuming total cost of production remains constant, R&B Tea will be able to increase its profits level.

♥ Income Elasticity of Demand (E_Y)

Define:

- E_Y measures the degree of responsiveness of demand for a good to a change in income level, ceteris paribus.

State how E_Y helps firms make rational decisions:

- E_Y is relevant in helping firms make rational decision on formulating appropriate output strategies based on the prevailing economics situations.

Apply how E_Y helps firms make rational decisions:

Business strategy: Firms would change the output mix depending on the prevailing economics situations.

Explain the output strategy:

- On the type of goods to produce
With the knowledge of E_Y , it will impact the output decision of firms, for example, to 'produce more' normal, luxury goods [$E_Y > 1$] instead of inferior goods [$E_Y < 0$] during an economic boom.

(Alternative application of E_Y would also be acceptable.)

Thus, E_Y helps firms make rational decision on its output mix so as to increase sales revenue. Assuming total cost of production remains constant, firms will be able to increase its profits level.

♥ Cross Elasticity of Demand (E_{AB})

Define:

- E_{AB} measures the degree of responsiveness of demand for a good to a change in to changes in the price of a related good B (substitute / complements), ceteris paribus.

State how E_{AB} helps firms make rational decisions:

- E_{AB} is relevant in helping firms make rational decision on formulating pricing and marketing /output strategies in response to the pricing decisions of competitors or firms selling complementary products.

Apply how E_{AB} helps firms make rational decisions:

Substitutes:

Explain the pricing strategy:

- The E_{AB} of for instance, Sony Playstation (PS) 4 with respect to a price change of a close substitute such as Xbox 1 is positive and high. Hence, if rival Microsoft (MS) Xbox One lowers its price, this will lead to a more than proportionate fall in demand for Sony PS 4, ceteris paribus. Sony thus has to keep an eye on these rival game console competitors because the negative impact on revenue due to a fall in price of close rivals' products will be large. This is known as rival consciousness.
- Thus, if rival MS Xbox One lowers its price, Sony will respond by lowering its prices to prevent a large fall in demand and thereby minimise the loss of total revenue. However, this may lead to a price war where firms undercut one another. The end result could be one where all firms lose out, leading to a lose-lose or self-defeating situation.

Explain the non-price strategy:

- As such, Sony will try to differentiate its game console from its rivals so as to decrease the E_{AB} value between Sony and its competitors. In order to avoid a price war, Sony could consider non-price strategies such as:
 - *Real* product differentiation
 - *Imaginary* product differentiation
- If Sony is successful in the latter, Sony will not be as vulnerable to decisions made by rival firms.

Thus, E_{AB} helps Sony Corporation make rational decision on its pricing and non-price strategies so as to increase sales revenue. Assuming total cost of production remains constant, Sony Corporation will be able to increase its profits level.

Anti-Thesis: There are limitations when using elasticity concepts such as E_P , E_Y and E_{AB} by the firms (*Explain any 2 limitations*)

There are however, limitations of E_P , E_Y and E_{AB} in terms of its usefulness to a firm.

- Firstly, elasticity values explain the effect on demand and total revenue but do not consider total cost which will affect profits level too.
- Secondly, it is difficult to gather accurate data for analysis of elasticity values and they are at best estimates.
- The *ceteris paribus* assumption may not hold as many factors are in fact changing at the same time and so the value of elasticities may be misleading to a firm.

(Any other appropriate limitations would also be acceptable. The limitations of elasticity concepts explained above (2nd and 3rd point) can also be applicable to government.)

Thesis (T): Elasticity concepts such as E_P and E_S are useful to any government in making rational decisions

Anti-Thesis (AT): There are limitations when using elasticity concepts such as E_P , E_Y and E_S by the government

♥ T: An understanding of E_P is important to any government in making rational decisions when considering government intervention such as a tax or a subsidy as it could help ensure a socially efficient market outcome is reached rather than government failure resulting.

- Consider the imposition of a tobacco tax on cigarettes given that demand for cigarettes is price inelastic due to the lack of nicotine substitutes and its addictive nature and there is a leftward shift of the supply curve, quantity demanded will fall less than proportionately to the rise in price and consumer will bear the brunt of the tobacco tax.

If the government's objective is to use tobacco tax to curb consumption of smoking, this policy has failed miserably in achieving its objective as the fall in quantity demanded is marginal. However, if the objective is to raise tax revenue, tobacco tax is effective in helping the government raise substantial tax revenue which could be used to finance anti-smoking campaigns or finance healthcare services.

As such, the government needs to be clear of its objective in implementing certain measures coupled with an understanding of E_P .

♥ AT: However, taxation is effective in reducing smoking especially among the teenagers, young adults and the poor. Empirical evidence has shown that the demand for cigarettes is relatively more price-elastic among the teenagers, young adults and the

poor. A tax (that raises the price of cigarettes) will reduce the quantity demanded (of cigarettes) by more than proportionately. Therefore, the reduction in the external cost of consumption that smoking incurs (pollution, health problems to non-smokers) will be very significant.

- ♥ T: An understanding of E_s is important to any government in making rational decisions when considering the formulation of agricultural policy.
 - For instance, supply of food is likely to be price inelastic in the short run as it may be difficult for farmers to expand food production since food takes time to grow and harvest. As such, governments often need to ensure there are adequate stocks of food to avoid famine / social unrest.
- ♥ AT: However, food in general is a perishable product and stocks of perishables can be difficult to maintain.

Synthesis: Judgement and Conclusion

Firms & Governments

- ♥ **Make a stand.**
Weigh, rank and justify which is the most significant factor.
State Judging Criteria (in order to make a reasoned judgment).

All in all,

- ♥ Elasticity concepts despite being useful and therefore necessary in helping firms and government in making rational decisions, they are subjected to limitations and do not provide a complete and holistic analysis. Thus other factors have to be incorporated to help firms and governments in making a more accurate and informed decisions.

Knowledge, Application, Understanding and Analysis		
Level	Descriptor	Marks
3	<p>For an answer showing both sides of the arguments, that makes rigorous explanation of the marginalist principle and how elasticity concepts help firms and governments make rational decisions There is good economic analysis with clearly illustrated diagrams, sound relevant examples and good essay structure.</p> <p>i.e.</p> <p>Students who provide a balanced and rigorous answer with sufficient depth will get L3 marks.</p>	15-20
2	<p>For an answer with sufficient scope but lack depth in coverage and quality explanation and undeveloped arguments (clarity and coherence) with some attempt to provide examples.</p> <p>i.e.</p> <p>Students who provide a one-sided analysis will get L2 marks. Students who provide a balanced answer but lacks depth of analysis will get high L2 marks.</p>	9-14
1	<p>For an answer that displays some knowledge of the marginalist principle and how elasticity concepts help firms and governments make rational decisions but with erroneous or weak or unclear explanation.</p> <p>i.e.</p> <p>Students who have inadequate development of analysis (only a few valid points) / vague knowledge will get L1 marks. Students who make serious conceptual errors and did not address the question will get L1 marks.</p>	1-8

Allow up to 5 additional marks for Evaluation		
E3	For an evaluative discussion based on economic analysis.	4-5
E2	Some attempt at evaluation, but are mostly summative conclusion. Evaluation is relevant to the question but does not fully explain the judgment or does not base it on relevant analysis.	2-3
E1	For an unexplained judgment, or one that is not supported by analysis.	1

The blockbuster merger between American telecommunications giant, AT&T Inc. and American media and entertainment company, Time Warner (home to huge entertainment and news brands such as HBO, CNN, and Warner Bros), which is worth about \$85.4 billion had been approved by the United States District Court in Washington.

Source: The New York Times, June 12 2018

Compare the different strategies which firms in the real world would deploy to compete for greater profits and discuss whether businesses should always merge to dominate in all product markets so as to maximise their profits earned.

[25]

Suggested Answer Approach:

<u>Introduction for first part question:</u>		
<ul style="list-style-type: none"> ♥ State that: <ul style="list-style-type: none"> - All firms seek to maximise profits (traditional objective) if they were to behave rationally. - To compete for greater profits, cost must be reduced or total revenue raised. ♥ Identify the methods of competition that might take place for firms namely, price and non-price competition / strategies <ul style="list-style-type: none"> - Define / explain price and non-price competition <ul style="list-style-type: none"> ○ Price competition (Pricing strategy) ○ Non-price competition (Non-price strategy) 		
<u>Essay Development for first part question:</u>		
Price competition (Pricing strategy):		
Monopoly	Monopolistic Competition	Oligopoly
Define a monopoly This would mean: ♥ since there is only one firm, the firm is the industry ♥ the monopolist has no rivals and ♥ the monopolist has the power to dictate either the price or the quantity sold resulting in a relatively price inelastic and steep DD/AR curve mainly	Define a monopolistic competition Each firm's product is slightly differentiated from the others in the industry. Each firm's product is largely similar but not identical (close but not perfect substitutes of each other). Due to the presence of close substitutes, a MpC firm faces a slightly downward sloping demand curve (i.e. fairly price elastic and gentle demand curve as compared to the case of a pure monopoly). <i>Decrease price:</i>	Define an oligopoly Oligopolistic firms tend to have high degree of mutual interdependence in decision making. I.e. <i>Increase price:</i> In Singapore, owing to the high degree of strategic interdependence between the firms, oligopolistic firms such as petrol retailers can engage in collusive behaviour → ♥ Price leadership so as to earn higher TR hence profits ♥ Evaluation: Nonetheless, although the market

<p>due to the lack of close substitutes.</p> <p><i>Increase price:</i></p> <p>♥ In general, since demand for monopolist's product is price inelastic, monopolist can raise price since a price rise will lead to a less than proportionate fall in quantity demanded for their product which will lead to an increase in total revenue and profits level, ceteris paribus.</p> <p><i>Cite relevant examples:</i></p>	<p>♥ Bubble tea shops for e.g. may compete in terms of price by offering discounts and selling promotional item drinks at reduced price. The effectiveness of such price competition however, depends on the E_p of the products.</p> <p>♥ The more price elastic the demand for its bubble tea drinks, the more the bubble tea shop retailers need to reduce the price. This is because a reduction in price leads to a more than proportionate rise in the quantity demanded of the bubble tea drinks. Hence, TR rises, ceteris paribus, profits rises.</p> <p>♥ <u>Evaluation:</u> Nonetheless, even if there is intense price competition, it is usually only in the short run and does not lead to price wars. This is due to the fact that MpC firms generally do not have sufficient financial resources to engage in such behaviour, as they tend to earn only normal profits in the long run, given the relatively weak barriers to entry and exit.</p>	<p>structure and conditions of retail petrol in Singapore does suggest a material risk of collusive or coordinated practices between the market players, based on the current facts and data collected and released by the Competition Commission Singapore, there is no real empirical evidence that the petrol retailers are engaged in anti-competitive behaviour.</p> <p><i>Accept other responses such as price war or kinked demand theory.</i></p>
Non-Price competition (Non-Price strategy):		
Monopoly	Monopolistic Competition	Oligopoly
<p>In contestable markets, monopolists might be expected to engage in non-price competition. Advertising, branding and</p>	<p>Methods of non-price competition:</p> <p>a) Location of the shops: b) Simple, small-scale advertising to promote brand loyalty unlike oligopolistic firms</p> <p><i>Cite examples</i></p>	<p>Oligopolistic firms engage in non-collusive behaviour → non-price competition such as</p> <p>a) Offering loyalty rewards and membership discounts b) Able to tie in with banks on credit-card promotions</p>

<p>research and development (R&D) help to build brand recognition and raise the entry costs for potential firms that want to break into the industry.</p>		<p>c) Intensive, large-scale advertising / promotional efforts / media exposure to promote brand loyalty d) Oligopolistic firms also conduct extensive research and development (R&D) encouraged by the right to sustain and keep subsequent supernormal profits, resulting in real product improvements <i>Cite examples</i></p>
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Introduction for second part question:

- ♥ Define a merger:
 - A merger refers to 2 firms which used to be separate entities but after the merger agreement the two firms become one joint entity which will have increased market power, making it difficult for new firms to enter.
- ♥ Set the context for your essay:
 - It is true that businesses should always merge to dominate the market for that product so as to maximise their profits earned. However, there could be other why some industries chose not to merge and remain small.

Essay Development for second part question:

Thesis: Firms merge to gain revenue and cost advantages
 → Higher profits for merged firm

<p><u>Revenue advantage:</u></p> <ul style="list-style-type: none"> ♥ Increased total revenue (TR) earned <ul style="list-style-type: none"> - Merged firm results in lesser competition and higher market power. The firm is thus able to exert market power by restricting output and driving up the prices of their entertainment services so as to maximise profits. - With fewer substitutes available, merged firm is able to experience a <u>more inelastic demand / AR curve</u>. This enables the merged firm to raise / set price for its services without experiencing a more than proportionate fall in quantity demanded, hence experiencing higher TR earned. 	<p><u>Cost advantage:</u></p> <ul style="list-style-type: none"> ♥ Substantial internal economies of scale (EOS) reaped [cost advantage due to large scale of provision of entertainment services] <ul style="list-style-type: none"> - A merged firm operating in an oligopolistic telco and media industry would be in a better position to enjoy substantial internal EOS arising from large scale of production. - Example of internal EOS that can be reaped by merged firm in telco and media industry Explain for e.g. → <i>Managerial economies of scale</i> <i>Financial economies of scale</i>
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∴ **↑TR & ↓TC → higher / greater Πs enjoyed when firms merged, ceteris paribus**

Anti-Thesis (AT) 1:

Firms may not want to merge in certain product markets for various reasons

<p><u>Revenue advantage:</u></p> <ul style="list-style-type: none"> ♥ Nature of service provided: Personalised / Direct Services <p>The size of business unit tends to be small if the work involves the provision of personal services such as that of doctor, accountant, tailor and hairdresser. Many small retailers have also managed to compete successfully alongside large firms mainly because they have been able to provide attention to the particular requirements of their customers who are willing to pay a little more for personalised service. Such personalised services may lead to consumers switching over to buying their products, leading to a rise in demand and hence total revenue. Hence, the firm gains revenue advantage.</p> <p>These businesses gain little advantage in merging and dominating the entire market. They would prefer to remain small and nimble to response to the changing needs and demands of their customers in a bid to maximise profits earned.</p>	<p><u>Reducing cost disadvantage:</u></p> <ul style="list-style-type: none"> ♥ Economies of scale are <i>limited</i> in some industries <p>For most retail businesses, like small provision shops selling groceries and general goods in mainly residential area and restaurants, internal economies of scale are quickly exhausted and internal diseconomies of scale set in early. The minimum efficient scale (MES) of the firm is small relative to the size of the whole industry and as output continues to increase, average costs may rise due to problems such as coordination and decision-making. Hence, these firms should remain small, so as to avoid internal diseconomies of scale from setting in earlier, allowing these firms to reduce cost disadvantage.</p>
<p><i>Anti-Thesis (AT) 2: Not all firms aim to maximise profits earned → other objectives of firms</i></p>	
<ul style="list-style-type: none"> ♥ Explain the objective of Sales Revenue Maximisation (short-run goal) 	
<p><u>Synthesis: Judgement and Conclusion</u></p>	
<ul style="list-style-type: none"> ♥ Make a stand. ♥ Weigh, rank and justify which is the most significant factor to consider whether to merge or not ♥ State Judging Criteria (in order to make a reasoned judgment). 	

Knowledge, Application, Understanding and Analysis		
Level	Descriptor	Marks
3	<p>For an answer showing both sides of the arguments, that makes rigorous explanation of the pricing and non-price strategies by various market structures and the arguments for and against mergers so as to maximise profits earned. There is good economic analysis with sound relevant examples and good essay structure.</p> <p>i.e.</p> <p>Students who provide a balanced and rigorous answer with sufficient depth will get L3 marks.</p>	15-20
2	<p>For an answer with sufficient scope but lack depth in coverage and quality explanation and undeveloped arguments (clarity and coherence) with some attempt to provide examples.</p> <p>i.e.</p> <p>Students who provide a one-sided analysis will get L2 marks. Students who provide a balanced answer but lacks depth of analysis will get high L2 marks.</p>	9-14
1	<p>For an answer that displays some knowledge on the strategies deployed by firms without making reference to any market structure and the arguments for and against mergers so as to maximise profits earned but with erroneous or weak or unclear explanation.</p> <p>i.e.</p> <p>Students who have inadequate development of analysis (only a few valid points) / vague knowledge will get L1 marks. Students who make serious conceptual errors and did not address the question will get L1 marks.</p>	1-8

Allow up to 5 additional marks for Evaluation		
E3	For an evaluative discussion based on economic analysis.	4-5
E2	Some attempt at evaluation, but are mostly summative conclusion. Evaluation is relevant to the question but does not fully explain the judgment or does not base it on relevant analysis.	2-3
E1	For an unexplained judgment, or one that is not supported by analysis.	1

inefficient allocation of resources. The two common types of factor immobility include occupational and geographical immobility.

Occupational Immobility

Occupational occurs when there are *barriers to the mobility of factors of production between different sectors of the economy* which leads to these factors remaining unemployed, or being used in ways that are not economically efficient.

For instance, due to the lack of relevant education and training, workers may not have the skills to switch jobs when there are structural changes in the economy. For example, Singapore economy transitioned from low-value adding manufacturing to an economy that demands for knowledge, innovation and service-based economy. Such a mismatch of labour skills can deter markets, and consequently the economy, from attaining its maximum potential output level. The immobility of workers can happen between different industries and occupations. It may be due to the lack of qualification or ability to do alternative jobs, less desirable working condition (greater stress) or less fringe benefits in the alternative job (e.g. amount of personal free time). Hence, structural unemployment arises due to such a mismatch between the skills and jobs, is long-term and represents a waste of scarce resources.

Geographical Immobility

Geographical immobility is often due to inability or lack of willingness of factors of production to move from one geographical area to another. Some reasons resulting in geographical immobility would include the existence of family and social ties, the financial costs involved in moving homes such as cost of selling houses, removal expenses and other associated expenditure, huge regional variations in house prices and differences in the general cost of living between regions. Furthermore, a poorly developed transport system and infrastructures will worsen such immobility.

Linking back to question

Factor immobility will result in more time taken to search for suitable factors of production and the economy will hence be in a constant state of disequilibrium where there is difficulty in reach the social optimum level of output. Furthermore, factor immobility places barriers to the movement of factor inputs to their most productive use. This implies a loss of productive efficiency which would in turn lead to higher costs for businesses, higher prices for consumers and a loss of potential output worsening the situation of market failure.

Conclusion

Hence, due to imperfect information and factor immobility, inefficient allocation of resources occurs. Therefore, government will need to intervene to correct the market failure.

Level	Descriptors	Marks
L3	For a thorough and well-developed explanation using economic concepts and appropriate examples on how imperfect information and factor immobility (both geographical and occupational immobility) may lead to market failure.	8 – 10
L2	For an under-developed explanation on how imperfect information and factor immobility may lead to market failure. Answer may contain some conceptual errors but appropriate economic concepts and analysis used. Some examples provided but not well-explained.	5 – 7
L1	For an undeveloped answer that shows lack of knowledge of the reasons for market failure. Answer contains a few valid points, which are mostly irrelevant and erroneous.	1 – 4

Suggested Answers part (b)

Introduction

Government usually intervenes when the market fails to achieve an optimal outcome for society. Government may intervene when the market fails to allocate resources due to missing market, externalities, market dominance but there are also occasions where it is better for the government to let the free market allocate the resources instead.

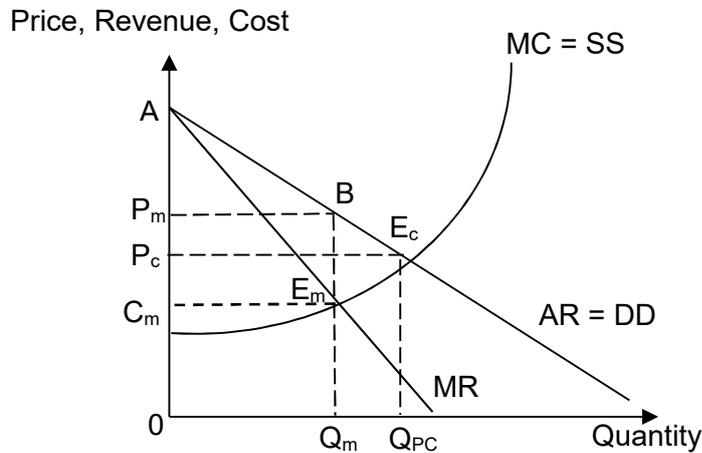
Thesis 1: Government intervention will result in more efficient allocation of resources than the free market in the provision of public goods

Government should provide for public goods as they will not be provided if left to the free market. Public goods are non-excludable and non-rivalrous in nature. Public goods are non-excludable because the producer or seller does not have any feasible means to exclude non-payers from benefiting from the good once the good is provided. Public goods are also non-rivalrous because the use by one person does not diminish the benefit to the next person consuming the good. As a result, there is no rivalry in consumption. Hence, there is no additional opportunity cost for the second and third person to use the good.

Using streetlights as an example, there are no feasible means to exclude non-payers from benefiting from the use of streetlights once it has been provided, there will be no consumers demanding the good as there will be issues of free ridership arising. Furthermore, producers are not interested to produce the streetlights as the opportunity cost to producing the next unit is 0. Hence, the price of the good will be $P=MC=0$ and there is no incentive for private producers to produce the good as they do not have any profit to gain. Thus, there will be a missing market if left to the free market alone. The government will have to intervene to take responsibility and produce the good fully.

Thesis 2: Government intervention will result in more efficient allocation of resources than the free market in the presence of market dominance

The presence of market dominance will lead to the free market failing to achieve allocative efficiency and hence the need for government intervention.



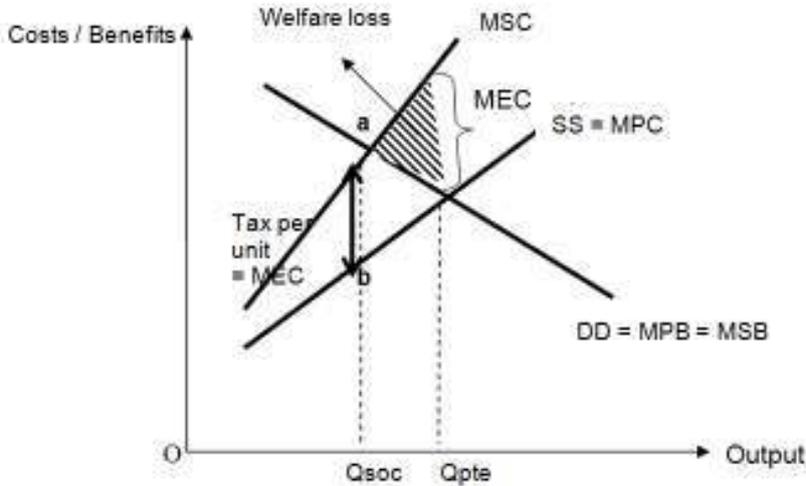
Firms with market power face downward sloping demand curves and are price setters. They will set price where $MC=MR$ to maximize their profits and where price is P_m and output at Q_m . At the profit maximising point, there is a higher price, where $P_m > P_c$, and a lower quantity, where $Q_m < Q_{PC}$, as compared to a perfectly competitive market. At Q_m , the marginal cost is C_m . Since $P_m > C_m$, there is allocative inefficiency. The deadweight loss to society is shown with the area BE_cE_m and society's welfare can be improved if more resources are allocated to the production of goods at price P_c and quantity Q_{PC} where perfectly competitive market will produce at where AR intersects MC .

Thus government can intervene to improve the resource allocation by deregulating the industry or adopting MC pricing or AC pricing.

Thesis 3: Government intervention will result in more efficient allocation of resources than the free market in the presence of externalities

Externalities distort the market and prevents the free market from serving its function.

Using the private transport market as an example, consumers generally focus on their private costs and benefit, ignoring external costs generated. Private costs include the costs of the vehicle, petrol prices and road tax, while private benefits include the convenience it brings and the comfort of having of personal space. The negative externalities / external costs generated onto third parties are largely disregarded in the private decision making process. These external costs may encompass air pollution from excess exhaust fumes generated, noise pollution and congestion due to excessive number of vehicles on the road, resulting in longer time spent on commute. The inefficiency in commute and transportation will also affect third parties not involved, for which they are not compensated for.

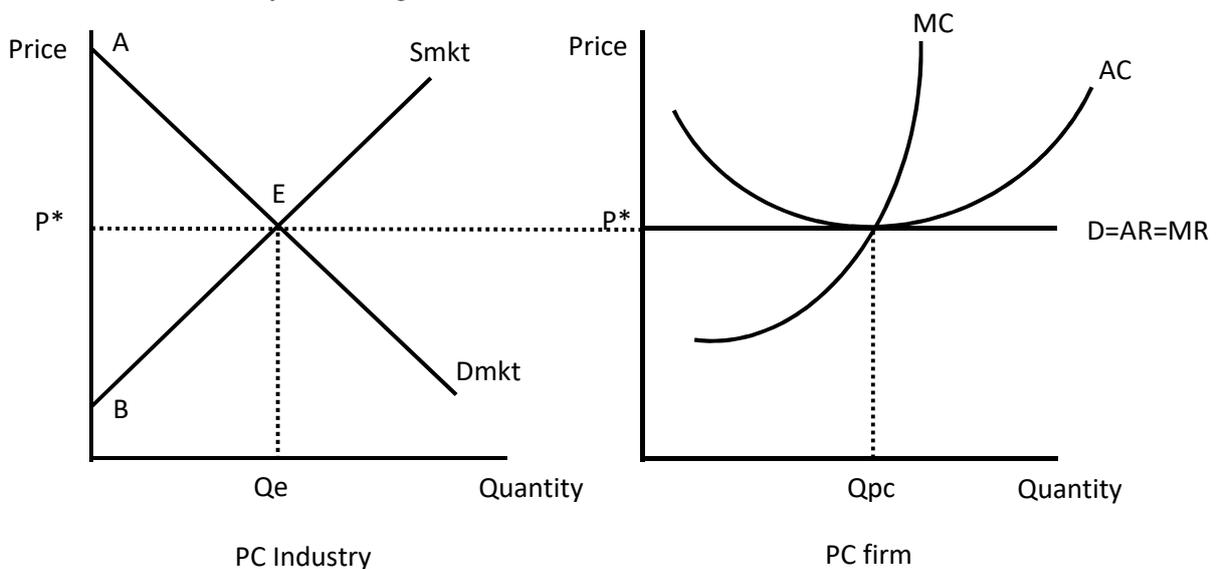


The presence of external costs will result in a divergence between social and private costs, such that $MSC = MPC + MEC$. This means that the private consumption of vehicular usage will be set at Q_{pte} where $MPC = MPB$ and private efficiency is attained, while social optimum level of consumption is set at Q_{soc} , where $MSC = MSB$. Since $Q_{pte} > Q_{soc}$, there is overconsumption of private transport in the market. At Q_{pte} , additional units of consumption adds more to the society's costs than benefits. This leads to an overallocation of resources to the market, hence resulting in a welfare loss as indicated by the shaded area.

In an attempt to relieve the market failure in private transport market, the Singapore government has implemented the Certificate of Entitlement (COE), which is a vehicle ownership quota and the Electronic Road Pricing (ERP) which is an additional road usage tax to help obtain a more optimal number of cars on the road.

Anti-thesis 1: Government intervention will not result in more efficient allocation if there are no externalities in the market

In a perfectly competitive market with no externalities, the free market will be able to allocate resources efficiently without government intervention.



With perfect information and no barriers to entry, firms in the perfect competitive market are price takers. The firms will take the market price which occurs where the demand curve intersects the supply curve in the market at P^* . The firms will maximize their profits where $MC=MR$ and produce at Q_{pc} . At the equilibrium, the price P^* paid by the consumer is equal to marginal cost of the firm. Welfare to society is maximized as shown by the area AEB and since $P=MC$, consumers value the last unit of the good the same as it costs to produce it.

Hence, under the assumption of perfect competition of a private good with no externalities and perfect information, government intervention is not necessary to achieve an efficient allocation of resources.

Anti-thesis 2: Government intervention may not result in more efficient allocation than the free market due to government failure

Government failure occurs when government intervention causes a more inefficient allocation of goods and resources as compared to a situation where the government does not intervene at all. Allocative efficiency could be reduced after government intervention to correct market failures.

Problems of information

Governments may genuinely wish to pursue the interest of consumers or any other groups but may be unaware of people's wishes or misinterpret their behaviour as a result of inaccurate information (or asymmetric information). In that case, they may introduce policies that lead to greater economic inefficiency. Some examples of this problem could be the following:

A lack of information about the true value of a negative externality. It is often very difficult to price the value of a negative externality such as pollution in monetary terms. It is difficult to accurately measure the costs imposed and to trace the source of the pollution itself. Hence the government could either under-correct or overcorrect the tax that attempts to reduce production to an efficient level.

The government could also either underestimate or overestimate the quantity of the good that is required by society. This could lead to under-production or over-production and thus lead to the problem of inefficiency. This could be the case with the provision of public good, such as a lighthouse or a national defence system.

Problems of incentives

State owned firms, unlike a private-owned firm, lack the incentive to maximise profits. State ownerships are usually put in place to overcome the problems associated with market dominance due to private ownership. However, this may result in greater inefficiencies arising. There is little incentive to improve the quality of the good, leading to dynamic inefficiencies. Furthermore, employees of government-owned firms could become complacent or inefficient due to bureaucracy and red tape that often plague the running of the state enterprises.

Problems of distribution and fairness (equity)

Government intervention in the running of the economy is often justified by the need to reduce inequity. However, it is possible that government intervention might sometimes increase inequity. For instance, the imposition of any tax often has a distributional effect which hurts the low income groups than the high income groups. For example, a tax on energy use that

aims to reduce harmful emissions of greenhouse gases will have different effects on different groups of people. If the tax is on the use of domestic household electricity, then the poorer groups of society may feel the greatest effect as this takes up more of their household income than other groups in society. This could be seen as unfair and increasing inequity in society.

Conclusion

Government intervention may not necessarily lead to a more efficient allocation of resources compared to the free market due to the existence of perfect market with no externalities and the possibility of government failure.

Government intervention is still largely relevant due to most markets being imperfect and government intervention will help to improve the resource allocation in such markets.

However, the extent of the government intervention is dependent on the government's assessment of the situation and decision making process to weigh the costs and benefits analysis on the impact of the government's actions.

Level of Response	Knowledge, application, understanding, analysis	Marks
L3	<ul style="list-style-type: none"> Well-developed economic discussion of the various situations government intervenes to correct market failure to ensure a better allocation of resources. Good use of examples is evident. 	8-10
L2	<ul style="list-style-type: none"> Good and balanced discussion of at least two situations government intervenes to solve market failure. Analysis is not consistently rigorous. Some conceptual errors in answers. 	5-7
L1	<ul style="list-style-type: none"> Descriptive answers which lacks detailed analysis. Answer lacks understanding of the various market failure government intervenes to resolve. Conceptual errors are evident. 	1-4
Evaluation		
E3	Well-reasoned judgements / decisions <ul style="list-style-type: none"> Critically evaluates the extent of government intervention required. Synthesises economic arguments to arrive at well-reasoned judgements and decisions such as in a good summative conclusion 	4-5
E2	Largely unexplained judgements <ul style="list-style-type: none"> Some attempt at evaluation or a summative conclusion 	2-3
E1	An unsupported evaluative statement <ul style="list-style-type: none"> Unsupported evaluative statement(s) or judgements 	1

Question 4

China announced proactive fiscal policies aimed at stabilising growth in the world's second largest economy as it grappled with excess capacity and sluggish demand.

Adapted from The Economic Times, 9 September 2015

(a) Using the circular flow of income, explain how an increase in government spending can lead to a bigger change in national income. [10]

(b) Discuss whether conflict in macroeconomic objectives is the most important reason that underlies the use of fiscal policy in any economy. [15]

(a) Using the circular flow of income, explain how an increase in government spending can lead to a bigger change in national income. [10]

Structure of Answer:

- Identify that **government expenditure** is an **injection**.
- Using circular flow of income, explain the underlying **process** (including multiplier process) of how the injection result in the **change** in the national income in terms of **direction** and **magnitude (MPS, MPM, MPT)**.

Introduction:

What is circular flow of income? The circular flow of income is a model that illustrates connections between different sectors of an economy (households, firms, government and the external sector) by showing the flow of income and expenditure between these sectors. Hence, circular flow of income model can be used to explain how production of the national output and level of income in an economy is driven by expenditure.

The **4-sector** model of the circular flow of income consists of (1) domestic households (2) firms, (3) government and (4) foreign sector for which China engages in both the import and export of goods and services.

Body 1: PART 1

Identify the **injections** and **withdrawals** in the circular flow of income by **explaining how the inner circular flow works (between households and firms) and how the inner circular flow connects with the external circular flow:**

Households provide factor services to firms and, in exchange, will receive factor incomes for their services to the firms. With the income earned, households will in turn use it to purchase goods and services to satisfy wants and needs. But households do not spend all their incomes on the goods and services produced by domestic firms. They also save part of their incomes, pay some of it as taxes, and purchase imports from foreign producers. Known as withdrawals, savings (S), taxes (T) and imports (M) diminish the circular flow, draining off spending and income.

Just as domestic households do not spend all their incomes on the goods and services produced by domestic firms, domestic firms do not produce only to sell to domestic consumers. They also sell to and earn revenues from the government, other firms and foreigners. Known as injections, government expenditure (G), investment (I), and export (X), these add on to the circular flow, creating additional spending and income.

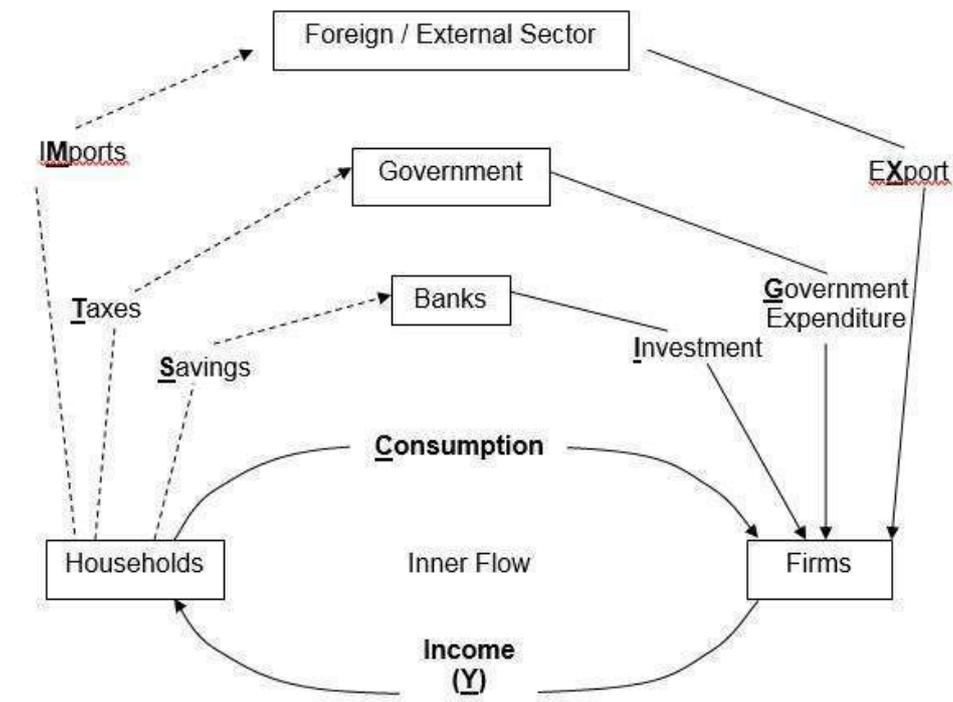


Figure 1: Circular Flow of Income

Body 2: PART 2

With the aid of **circular flow of income** as the tool of analysis, **explain how an increase in government expenditure** results in a **multiplied increase** in national income in China:

Other than households, expenditure on the firm's output produced by China may also come from government. This is known as injection.

Method 1:

Assume that the economy is in equilibrium initially. When there is an increase in injection of say 10 million Chinese Yuan of government expenditure on output to expand road networks, this rise in G leads to an increase in injection in the circular flow of income above. This causes planned total injections to exceed planned withdrawal. This will cause a fall in the planned level of inventories of firms supplying road building materials. These firms will increase output (increase in actual growth) which translate to hiring more labour which is a derived demand from producing more product/output. Households then receives more factor income (payment for factors of production) and they will spend a portion of it on locally produced consumer goods and services; a portion will be saved, taxed by the government and spent on imports (foreign sector). As one's spending becomes another's income, this spending by households will lead to another round of increase in income for another group of people. The increase in output for the second round is smaller than the previous one as there are leakages in the form of import expenditure, taxes and savings (withdrawals going up) as shown in the diagram. Nevertheless, firms will again experience a fall in inventories, prompting them to increase production. The increase in production will cause another increase in income. The process repeats itself until a new equilibrium is achieved where once again injections equal withdrawals. Hence, this leads to multiple increase in national income in China.

Method 2: Income Flow Analysis

Assume that the economy is in equilibrium initially. When there is an increase in injection of say 10 million Chinese Yuan of government expenditure on output to expand road networks, this rise in G leads to an increase in injection in the circular flow of income above. This causes a fall in level of inventories of firms supplying building materials which in turn leads to rise in demand for factors of production from households. This rise in demand will increase in factor income of households leading to rise in the size of circular flow of income. Households' income-induced consumption expenditure rise. As their income rises, households will save more, spend more on imported goods and services and pay more taxes. The size of withdrawal rises. With the rise in Y-induced consumption by households, firms will respond again with increasing output. The process will stop when the initial rise in injections in circular flow is equal to the rise in withdrawals. Eventually, the size of the circular flow of income in the economy rises. Hence, leading to a bigger rise in national income.

Conclusion: Explain on the magnitude of increase in national income (size of MPS, MPM, MPT)

The smaller the proportion of leakages or higher the proportion of induced consumption, the greater the size of the multiplier and that would mean a greater multiple increase in real national income whenever autonomous spending increase in the economy, assuming economy operates below full employment.

Marking Scheme: Part (a)

Knowledge, Application, Understanding, and Analysis		
Level of Response	Descriptors	Marks
L3	Well-developed explanation of how inner circle (Firms and Households) interacts followed by how inner circle interacts with outer circle using Injections and Withdrawals with reference to the circular flow of income diagram . + Well-developed explanation and illustration of the underlying process (including multiplier process) of how increase in government expenditure result in multiplied increase in national income using either method 1 or 2 with use of relevant example (s) as well as consider factor that affects the extent of change in national income in a country.	8-10
L2	Undeveloped explanation and illustration of the underlying process of how increase in government expenditure result in multiplied change in national income in a country with relevant use of circular flow of income .	5-7
L1	For an answer that use AD – AS framework instead of circular flow of income For an answer that shows a descriptive knowledge of the circular flow of income.	1-4

(b) Discuss whether conflict in macroeconomic objectives is the most important reason that underlies the use of fiscal policy in any economy. [15]

Suggested Answer for (b)

Underlies → the cause of / basis of

Essence of Q: Explain how the conflict in macro goals led to government's choice of using FP by explaining how FP works to solve this conflict. Note that Q is not asking about how the use of FP will lead to conflict.

Introduction:

Identify government macroeconomic objectives:

Government aims to achieve sustained economic growth, low inflation rate, low unemployment rate as their internal goals and a stable balance of payment as their external goal.

Definition of FP:

Fiscal policy is a demand-management policy that involves the government manipulating the level of government expenditure (G) and taxation (T) so as to influence the level of aggregate demand. This in turn affects the pattern of economic activity, output and employment.

Identify reasons (causes) that led to the choice of using FP:

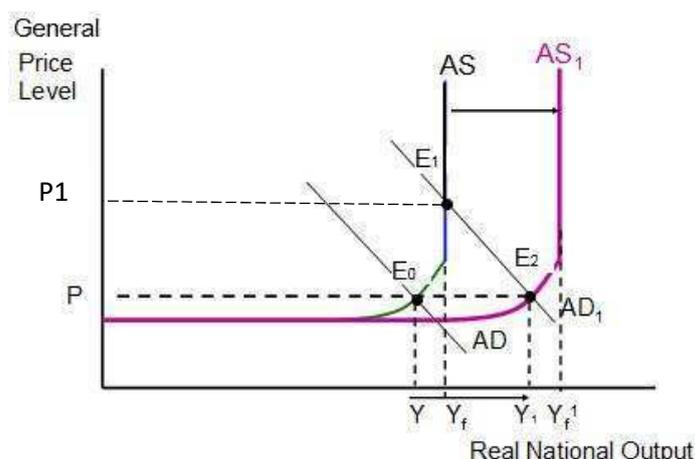
Thesis: Yes, conflict in macroeconomic objectives is the most important reason that underlies the use of FP in any economy

Thesis 1: Conflict between Economic Growth and Inflation leads to the use of FP.

Conflict between economic growth and inflation is an important reason that underlies the use of fiscal policy (FP). For example, when the economy is facing economic growth with an accompanying demand-pull inflation, the use of expansionary FP with supply-side intent can help to resolve this conflict.

The reduction of personal income tax will lead to rise in disposable income and hence purchasing power. This in turn leads to rise in consumption (C). The fall in corporate tax will lead to rise in after-tax profits hence encouraging more investment (I). Together with the rise in government expenditure (G), aggregate demand (AD) rises, assuming net exports remain constant. The rise in AD will lead to fall in inventories and this signals firms to step up production. Firms hire more workers leading rise in output. This results in rising employment and income of households. As income increases, spending by households will rise. As one's spending becomes another's income, the rise in spending will lead to rise in income of another group of people because of the increase in demand for the goods and services the produce. The multiplier effect is triggered off leading to a multiple increase in real national income from Y to Yf shown in the figure below hence achieving economic growth for the economy.

As G is spent on developmental areas such as training and education, productivity of labour force will increase. The rise in quality of labour leads to increase in long run aggregate supply (LRAS) shown by the rightward shift of LRAS curve from AS to AS1, hence rising the productivity capacity of the economy from Yf to Yf1. Therefore, the rise in AD with an accompanying rise in LRAS will eventually lead to a non-inflationary economic growth from Yf to Y1 where real national income rises and general price level falls from P1 to P, hence solving the conflicts between economic growth and inflation. This explains the reason that underlies the use of FP.



Thesis 2: Conflict between Economic Growth and Balance of Payment leads to the use of FP.

Conflict between economic growth and balance of payment (BOP) is an important reason that underlies the use of FP. For example, when the economy is facing economic growth with an accompanying worsening BOP due to worsening current account (BOP), the use of expenditure-reducing policy via contractionary FP can help to resolve this conflict.

Expenditure-reducing policy seeks to reduce the aggregate demand (AD) of the economy in order to lower the level of national income and general price level. In other words, this method aims to deflate the economy thereby reducing consumers' ability to buy foreign imports. When there is a fall in the level of imports, this will lead to the improvement in balance of trade. Assuming capital and financial account remains constant, balance of payment (BOP) improves.

Expenditure-reducing policy via contractionary FP works by reducing G and increases taxes. The rise in personal income tax will lead to fall in disposable income of households, leading to fall in purchasing power. This in turn leads to fall in C. The raise in corporate tax will lead to lower after-tax profits for firms, discouraging investment, hence I will fall. With the fall in G, C and I, ceteris paribus, AD will fall. The fall in AD will lead to rise in inventories and this signals firms to reduce production. Firms retrench workers leading fall in output. This results in rising unemployment and falling income of households. As income falls, spending by households will fall. As one's spending becomes another's income, the fall in spending will lead to fall in income of another group of people because of the fall in demand for the goods and services the produce. The multiplier effect is triggered off leading to a multiple fall in national income. This contraction of the economy will result in the fall in households' income levels and hence induce a corresponding fall in the demand for foreign goods (imports) and hence fall in import (M) expenditure.

At the same time, a fall in AD also reduces the domestic inflation rate which improves the price competitiveness of the country's exports. As a result, there will be a more than proportionate increase in quantity demanded of exports and export revenue rises assuming that demand for exports is price elastic. Ceteris paribus, fall in M expenditure and a rise in export revenue will lead to an improvement in the current account as net exports would have risen. Assuming capital and financial account remaining constant, BOP improves.

As net exports rise, assuming it outweighs the fall in C, I and G can bring about a rise in AD eventually and hence leading to a rise in national income and economic growth. Therefore,

the use of contractionary FP can achieve both EG and improvement in BOP hence resolving the conflict between EG and BOP. This explains the reason that underlies the use of FP.

Anti-Thesis: Conflict in macroeconomic objectives is NOT the most important reason that underlies the use of FP because there are other reasons why FP is used instead.

However, there are other reasons why government uses FP. Hence, conflict in macroeconomic objectives may not be the most important reason that underlies the use of FP.

Anti-Thesis 1: To promote productivity through building infrastructures

Government may use FP in order to promote productivity in the economy. An expansionary FP through the rise in G on developmental expenditure such as building infrastructure can help economy to achieve a rise in productive capacity. For example, when the government expand road network, this helps to reduce traffic jams, reducing time taken on travelling and enabling firms to meet more delivery assignments. Hence, more outputs can be produced in the economy. Therefore, the rise in G through expansionary FP leads to increase LRAS and hence achieving rise in productivity capacity in the economy. This explains why government uses FP.

Anti-Thesis 2: To Collect Tax Revenue

Another reason that underlies the use of FP is to collect tax revenue. The use of contractionary FP could be used if government wants to raise tax revenue. This can be done with the rise in personal income tax and corporate tax. Hence, this could explain why government uses a contractionary FP.

Note that contractionary FP is not the same as fiscal austerity. If main objective is to improve fiscal balance, fiscal austerity is used instead of contractionary FP because FP is a demand-management policy that works via influencing the AD but the improvement in fiscal balance is achieved directly from the change in G and tax, not through the change in AD.

Note also that the Q refers to discretionary FP that requires legislative action by the government, not automatic FP (automatic stabilizer) which refers to system in place that automatically counteract any inflationary or deflationary pressure in the economy because of the key word in the Q "use" of FP.

Anti-Thesis 3: Fiscal Surplus enables government to use expansionary FP as a policy choice

Another possible reason why FP is chosen among other policies is because government has the financial ability to support an expansionary FP. An expansionary FP works via increasing G and reducing taxes, both of which will put a strain on government's fiscal position. However, if the government has sufficient financial budget, it can choose to use expansionary FP among other policies to achieve macroeconomic objectives. Hence, the reason that underlies the use of FP could be due to strong financial backing (fiscal surplus).

Anti-Thesis 4: Large Multiplier Size increases Effectiveness of FP

A large multiplier could also be a reason that underlies the use of FP in an economy. Size of multiplier affects the extent of change in real national income following an initial change in AD. Assuming the economy is operating at Keynesian range characterized by abundant spare capacity, the larger the size of multiplier, the larger the change in real national income. Size

of multiplier (k) is determined by size of leakages (withdrawal) in terms of imports, savings and taxes where $k=1/(MPM+MPS+MPT)$. For example, if an economy is heavily dependent on imports, has high savings rate and high taxes, k size will be small, say 2. This means that a rise in AD by \$1m will lead to a $2 \times \$1m = \$2m$ rise in real national income. However, another economy that has low leakages will have a larger k of say 4. This implies that an identical rise in AD by \$1m will lead to a $4 \times \$1m = \$4m$ rise in real national income (RNI), rendering a greater effectiveness of the FP to bring about a more significant rise in RNI. In other words, a larger k can be more effective in achieving the intended goal(s). Therefore, the use of FP in an economy could be due to a large multiplier.

Anti-Thesis 5: To complement other policies

Another reason that underlies the use of FP could be to complement other policies used. Since policy comes with both advantages and disadvantages, it is necessary for the government to implement a plethora of policies instead of using a single policy to strengthen the overall effectiveness and overcome the shortcomings of each other. For example, if there is a loss of export price competitiveness due to the rise in cost of production (COP), government may implement long run supply-side policy such as training and education to tackle the root cause by increasing labour productivity so as to reduce COP and regain export price competitiveness. However, a long term span is needed to gain sufficient experience and mastery of knowledge. Hence, while waiting for the long run supply-side policy to take effect, short run demand-management policy such as expansionary FP can be used to prevent AD from falling further due to falling exports. This could explain the reason that underlies the use of FP.

Conclusion: Judgement on whether conflict in macroeconomic objectives is the MOST important reason that underlies the use of FP

- In conclusion, there are many reasons that underlies the use of FP.
- Whether conflict in macroeconomic objectives is the most important reason depends on the economic situation of the country at the point in time. For example, if the economy is indeed facing a conflict between EG and inflation, this reason could be the most important reason why expansionary FP with supply-side intent is used since it is a direct and effective way to achieve a non-inflationary EG.
- While fiscal surplus is another reason why the government can use FP, it is not the main reason because there ought to be an objective for the implementation of any policy. In this case, the objective is to overcome the conflict between EG and inflation, not to splurge just because there is fiscal surplus. This explains why under this situation, conflict in macroeconomic objectives is the most important reason why government chose to use FP.
- On the other hand, if the conflict is between EG and BOP, it is unlikely that conflict in macroeconomic objectives is the most important reason that underlies the use of FP. This is because FP is not the only policy appropriate to deal with conflicts. For example, expenditure-reducing policy via contractionary monetary policy (MP) can also be used to deal with worsening BOP due to worsening current account. FP is not as appropriate because it may be difficult to withdraw public expenditure once the government has given the funds for particular projects. This is especially so if major long term public works has been undertaken; they cannot be stopped midway. Hence it is difficult to use contractionary FP via reducing G . Instead, government could have used expenditure-switching policy via depreciating exchange rate to improve current account. The rise in net export helps to promote EG as well, thus resolving the conflict between the 2 goals. However, in the short run, devaluation / depreciation may worsen a country's current account balance as the demand for exports and imports are very price inelastic. To counter this, FP could be used as a policy to complement

depreciation of exchange rate. Hence, in this case, FP is used because other policy has limitation and hence FP is used to complement the main policy. Therefore, conflict in macroeconomic objectives is not the most important reason.

- In the event of a demand-led recession, there is an urgent pressure on the government to stimulate the economy through expansionary policies. A government who does not have financial resources lacks the choice of using an expansionary FP that requires large fiscal budget and hence may have to resort to market-oriented policies such as reducing corporate tax to attract both domestic and foreign direct investment to stimulate the economy. On the other hand, a country that runs fiscal surplus qualifies for the use of expansionary FP. Hence in this case, the availability of fiscal budget could be the most important reason why FP is used.
- Therefore, whether conflict in macroeconomic objectives is the most important reason that underlies the use of FP depends on factors such as the economic situation of the country at the point in time, availability of other policies.

Mark Scheme

Level (Marks)	Descriptors
L3 (8 – 10)	<ul style="list-style-type: none"> • Well-developed economic discussion on how conflicts in macroeconomic objectives and other factors underlies government's use of FP. • Assumptions clearly made.
L2 (5 – 7)	<ul style="list-style-type: none"> • Good and balanced discussion of at least two reasons that underlies the use of FP. • Analysis is not consistently rigorous. • Some conceptual errors in answers
L1 (1 – 4)	<ul style="list-style-type: none"> • Weak and incomplete explanation. • Mere listing of points without explanation.
Evaluation	
E3 (4-5)	For a rational conclusion and an evaluative assessment that is based on economic analysis (that is, a well-explained evaluation).
E2 (2-3)	For an undeveloped rational conclusion that is based on economic analysis.
E1 (1)	For an unexplained judgment, or one that is not supported by analysis.

2018 JC2 H2 Economics Prelim P2

Essay Q5

As a result of careful budgeting, the overall Singapore government budget has recorded more surpluses than deficits in the past 20 years.

Source: Singapore Budget 2017, www.singaporebudget.gov.sg

- (a) Explain the consequences on an economy of failing to achieve its macroeconomic aims. [10]
- (b) Assess the likely impact of a budget surplus on the Singapore economy. [15]

Part (a)

Introduction: State our four macro-economic aims

- Full employment (low unemployment)
- Price stability (low inflation)
- Sustainable economic growth
- Favourable position of balance of payments

Body: Explain clearly the 4 macroeconomic aims & the consequences of failing to achieve them

→ Definition

→ Measurement (& Benchmark, if any)

→ Consequences of failing to achieve each aim

- Full employment (low unemployment)
 - Define Unemployment: The condition of the economy where FOPs (land, labour, capital, entrepreneurship) are underutilised
 - Measurement of Unemployment: Unemployment rate, which is the percentage of labour force that is unemployed, where the unemployed refers to people who are willing and able to work at the current wage rate but are without a job, and the labour force which is the sum of the employed and unemployed
 - Benchmark: Most governments aim for a low unemployment rate of 2-3% (natural rate of unemployment i.e. compatible with price stability)
 - Explain how failing to achieve full employment results in an economy being unable to maximize its level of output, real national income and material standard of living & how high unemployment contributes to high social and economic costs such as increased government expenditure on public assistance, reduction in direct and indirect tax revenue, loss of output and social problems
- Price stability (low inflation)
 - Define Inflation: Sustained and inordinate increase in the general price level
 - Measurement of Inflation: Inflation rate, which is the percentage change in the general price level in a year over the previous year's
 - Benchmark: Most governments aim for a low & stable inflation rate of 2-3%
 - Explain how failing to achieve low inflation results in a higher cost of living and lower material SOL as goods and services are less affordable, discourages savings which provides an important source of funds for investment and dampens business confidence, resulting in lower investment which is crucial for sustained growth, and worsens the BOT by harming export competitiveness

- Sustainable economic growth
 - Define Sustainable Economic Growth: A rate of economic growth that can be maintained without creating other significant economic problems (such as depleted resources and environmental problems), particularly for future generations. It implies a positive and stable growth rate over an extended period of time i.e. sustained economic growth which is actual growth (increase in real output of an economy) + potential growth (increase in the productive capacity of an economy)
 - Measurement: Rate of economic growth, which is the percentage increase in a country's real national income (usually real GDP) in a year over the previous year's. Supplemented by other indicators such as pollution index, rate of deforestation etc
 - Benchmark: Varies between LDCs and DCs; DCs have lower benchmarks e.g. Singapore's long-term growth target is 3-5%
 - Explain how failing to achieve sustainable economic growth reduces current and future SOL (due to inefficiency as a result of overproduction and hence accelerated depletion of resources and environmental damage), worsens poverty, reduces saving and investment (due to drop in business confidence) which helps sustain growth

- Favourable position of balance of payments
 - Define Balance of Payments: Statement of all transactions between one country and the rest of the world. The transactions include merchandise trade, exchange of services and transfers of capital in both directions.
 - Benchmark: Improved BOP surplus or avoidance of large &/or persistent BOP deficit or surplus
 - Explain why a persistent and large BOP deficit is undesirable: Outflow of currency, drawing down reserves, increase in external debt
 - Explain why a persistent and large BOP surplus is undesirable: Rising inflationary pressure, increase in protectionist sentiments from trading partners, increase in external value of currency which harms export competitiveness unemployment in export industries

Marking Scheme: Knowledge, Application, Understanding and Analysis

L3 (8-10m): Correctly identifies and clearly explains all 3-4 macroeconomic aims, highlighting the consequences of failing to achieve the aims with respect to SOL &/or macro/micro objectives.

L2 (5-7m): Correctly identifies and explains 2-3 aims, highlighting the consequences of failing to achieve the aims with respect to SOL &/or macro/micro objectives.

L1 (1-4m): Explains some consequences of failing to achieve macroeconomic aims in general

Part (b)

Introduction

- Define Budget Surplus: Government Receipts > Government Expenditure
- Impact on economy: impact on macro/micro indicators and goals, which can be split into
 - domestic impact on EG, inflation, UnM, equity and efficiency &
 - external impact on BOP

Body 1: Domestic Impact

Domestic impact of CFP

- A budget surplus **might be** the result of the government $\downarrow G$ & $\uparrow T \rightarrow$ CFP
 - Domestic impact of CFP (explain CFP and illustrate using AD-AS diagram): Negative AG due to multiple fall in NY; \uparrow DD-deficient UnM; \downarrow DD-pull inflation

Extent of Domestic Impact

- Small Singapore multiplier (explain why) \rightarrow \downarrow impact on AG and UnM
- Depends on component of Government Expenditure:
 - \downarrow Developmental G: Leftward shift of LRAS (or shift right by smaller extent) \rightarrow \downarrow PG
 - \downarrow Transfer payments: Cyclical impact due to EG \rightarrow less need for government assistance due to higher Y \rightarrow AD already high due to optimistic economic outlook \rightarrow less need for G to stimulate economy \rightarrow \downarrow impact on AG and UnM
- Depends on components/source of Government Revenues/Receipts:
 - $\uparrow T$ due to progressive taxation: Cyclical impact due to EG \rightarrow individuals pushed to higher tax brackets due to higher Y \rightarrow automatically dampen AD to prevent the onset of demand-pull inflation + avails resources to help lowest rungs of society overlooked by economic progress and development i.e. the elderly and the destitute (below the poverty line) \rightarrow promotes inclusive growth*
 - \uparrow Tax and fees from luxury markets such as property tax, stamp duties, COE \rightarrow tax high net worth individuals \rightarrow promotes inclusive growth*
 - \uparrow foreign worker levy \rightarrow more jobs made available for Singapore citizens \rightarrow inclusive growth*

* can also explain: reduce income inequality and inequity by raising the poor's purchasing power to afford basic necessities

Body 2: External Impact

External impact of CFP

- $\downarrow NY \rightarrow \downarrow M$
 - $\downarrow GPL \rightarrow \uparrow$ export competitiveness: $E_{px} > 1 \rightarrow \uparrow X$; imports relatively more expensive $\rightarrow \downarrow M$
- } Improve BOT \rightarrow Improve current a/c \rightarrow improve BOP

Extent of External Impact

- Import dependence of Singapore for consumption & production due to resource scarcity $\rightarrow M$ unlikely to fall significantly \rightarrow limited improvement to BOT and BOP
- Depends on component of Government Expenditure:
 - \downarrow Developmental G: \downarrow attractiveness to TNCs $\rightarrow \downarrow FDI \rightarrow$ KFA worsens \rightarrow BOP worsens
- Depends on source/components of Government Revenues/Receipts:
 - \uparrow foreign worker levy $\rightarrow \uparrow COP \rightarrow \downarrow$ export competitiveness \rightarrow worsen (X-M) & further discourage FDI \rightarrow KFA and CA worsen \rightarrow BOP worsens
 - \uparrow stamp duty $\rightarrow \downarrow$ short-term capital flows into property market for speculative purposes \rightarrow KFA worsens \rightarrow BOP worsen

- **Singapore context:** Fiscal prudence by govt → accumulated budget surpluses as mentioned in preamble → avails reserves to build pro-business climate and skilled workforce → attract FDI → improve KFA (as well as bring about AG + PG)

Conclusion:

Note that:

Budget surplus → Government Receipts > Government Expenditures

This could imply:

1. *Expenditure ↓ & Receipts ↑*
2. *Both ↑ but Receipts ↑ Faster*
3. *Both ↓ but Expenditure ↓ Faster*
4. *Receipts ↑ but Expenditure unchanged*
5. *Expenditure ↓ but Receipts unchanged*

Hence candidates should recognise that Singapore's budget surplus is not the result of CFP but Receipts rising more quickly than Expenditures. Singapore's context should be used to come to a stand on the overall impact of budget surplus on Singapore economy

- A budget surplus does not necessarily mean that government spending has fallen and receipts have risen. In the case of Singapore, it was most likely the case of both rising, with receipts rising more quickly because of the generally strong and positive growth. Spending is likely to increase from year to particularly in the area of developmental spending on programmes and projects such as SkillsFuture (govt grants to promote lifelong learning and employability and raise incomes) as well as the expansion of the Mass Rapid Transit network, and transfer payments for the elderly such as the Pioneer Generation Package.
- On the other hand, due to the Singapore government's emphasis on fiscal prudence, it is very likely that spending typically does not rise excessively. This, coupled with a commitment to meritocracy, implies a smaller proportion of G is devoted to transfer payments. As such Singapore FP is said to have a strong supply-side bias and is therefore difficult to reverse, further explaining why it is unlikely G has fallen. With G rising less than receipts, a budget surplus tends to result.
- In view of Singapore's context, therefore, it is likely that the budget surplus has a positive impact domestically particularly in terms of promoting inclusive growth and equity through high fees and taxes directed mainly to the higher income groups.
- In terms of international impact, Singapore's long-term commitment to fiscal prudence and focus on using its fiscal reserves from accumulated budget surpluses as mentioned in preamble on developmental spending to build a skilled workforce and investment-friendly destination (or pro-business climate) has continually attracted FDI particularly in high value-added, knowledge-intensive industries, which through the use of technology can circumvent the reliance on low-to-medium skilled labour. This has improved her KFA as well as her CA (through the exports of high value-added products).

Marking Scheme: Knowledge, Application, Understanding and Analysis

L3 (8-10m): Explains how CFP affects the economy and discusses the factors that affect the extent of the impact particularly considering the components/sources of revenues and expenditures

L2 (5-7m): Explains how CFP affects the economy and discusses factors that affect the extent of the impact but which do not consider the components/sources of revenues and expenditures

L1 (1-4m): Explains how CFP affects the economy but shows no attempt to discuss the extent of the impact

Allow up to 5 additional marks for Evaluation

E3 (4-5m): recognises that Singapore's budget surplus is not the result of CFP but Receipts rising more quickly than Expenditures & uses Singapore's context to come to a stand on the overall impact of budget surplus on Singapore economy

E2 (2-3m): attempts a judgement with theoretical justification about the overall impact of a budget surplus on Singapore economy

E1 (1m): attempts a judgement without justification about the overall impact of a budget surplus on Singapore economy

6. President Xi Jinping told the world's major economies to remain true to the philosophy of building an open global economy that navigated the challenges of the financial crisis. He called on G20 members such as Singapore, Germany and the United States, to remain committed as it is vital in reenergising the global economy.

Source: Asiaone, 11 July 2017

To what extent can policies undertaken by the Singapore government mitigate the negative impacts of building an open global economy and reap its benefits to the fullest? [25]

Suggested Answer Approach

Introduction

- **Define globalisation**: Globalisation is defined as the process through which an ***increasingly freer flow of ideas, people, goods, services, and capital*** leads to the integration of economies and societies.
 - a. free flow of **ideas**
 - b. free flow of **people**
 - international movement of labour or migration (***Link to freer flow of labour***)
 - c. free flow of **goods and services**
 - free trade or trade liberalisation (***Link to freer flow of trade***)
 - d. free flow of **capital & investment**
 - emergence of worldwide financial markets and better access to external financing for corporate, national and subnational borrowers result in rapid movements of capital and integration of financial markets (***Link to freer flow of capital***)
 - rise and expansion of multi-national corporations (MNCs) within and across countries e.g. Microsoft, Citigroup, IBM etc.
- Thus, with rising trend towards globalisation, there is an increasing number of countries which have opened up their countries for trading purposes in the past 50 years.
- **Policies** implemented by Singapore include:
 - Fiscal policy
 - Exchange rate policy
 - Supply-side policies

Body/Essay Development

Explain what is meant by “reaping the benefits of an open global economy” → have a linking statement and be succinct and link to the micro and macro objectives

Explain positive effects of globalisation on the economy

- ✓ Singapore is a small and open economy that is heavily dependent on external sector for growth. Since we are export-driven, embarking on globalisation and participating in international trade in general, the removal of trade barriers on one's exports in the global market will enlarge its export markets. Assuming that the economies produce goods and services according to their comparative advantage (which states that even when a country has absolute advantage over another in producing both commodities, both countries can specialise in producing that good in which it incurs a lower domestic opportunity cost), they would benefit from free trade because export-price competitiveness would be enhanced.

Additionally, it will benefit even more so if the demand for its exports is deemed to be price-elastic, as it will lead to a more than proportionate increase in the quantity demanded for its goods and services, leading to a greater rise in the export revenue earned, assuming that there is spare capacity in the economy, ceteris paribus. **Furthermore, the benefits from globalisation is even greater since the nature of our economy is a small and open one, which indicates that it is highly reliant on net exports (X-M) as its engine of growth.**

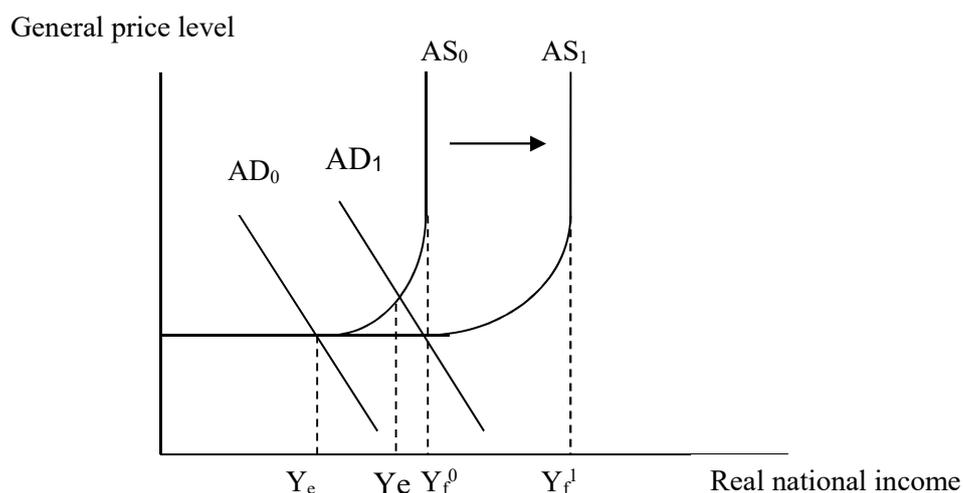
- i.e. Singapore has comparative advantage in capital-intensive and knowledge-based industries such as refined oil industries and high-end electronics (and is trying to achieve comparative advantage in biomedical and pharmaceutical industries). Assuming that the demand for her exports is price-elastic, it will lead to a more than proportionate increase in quantity demanded for Singapore's exports (X) in these sectors as the final prices would be lower due to lower opportunity costs in the production of these goods and services. This will lead to an increase in export revenue earned which is crucial as Singapore's trade-to-GDP ratio in 2011 was 407.9%.
- ✓ Globalisation has also led to freer capital flows into countries → increase in FDI
 - i.e. Singapore in 2011 → record foreign direct investment (FDI) commitments despite challenging times
- ✓ **Macroeconomic effects on an economy embracing globalisation:**
 - Internal/ domestic economy (SR): Thus, net X and I increase → multiple increases in AD and NY via K effect → economic growth (rise in actual growth) → lower unemployment rate (through iPONY effects)
Draw AD-AS diagram and explain iPONY effects
 - Internal/ domestic economy (LR):
Higher I → rise in AS due to higher productive capacity → AS increases in the LR → LRAS curve shifts to the right → increased potential growth and further NY via a & K (sustained economic growth)
All these will translate to higher material SOL as higher income leads to an increase in purchasing power and hence higher ability to consume an increased availability of goods and services.
 - External economy (SR): Higher net X → strengthening of the current account → ceteris paribus, strengthening of the BOP → can remove any of the deficits, if any (*but SG seldom has BOP deficits*)
 - External economy (SR): Higher FDI flows → strengthening of the capital and financial account & BOP, assuming ceteris paribus
 - *Show on AD-AS diagram*
 Thus, overall, with a strengthening of both current and capital and financial accounts, the BOP of the economy will be further strengthened too → resulting in modest appreciation of currency &/or accumulation of foreign reserves
 - External economy (LR): Higher FDI flows can help an economy in developing new niche areas to remain globally competitive, such as the development of the biotechnological, biomedical and pharmaceutical industries in Singapore
 - Evaluation: Link to conflict of macroeconomic goals → possibility of ER appreciating if left to free market forces → lose export-price competitiveness
 - Evaluation: Link to conflict of macroeconomic goals → can lead to demand-pull inflation in the SR if an economy is operating near or at classical range of the AS curve →
 - i.e. in Budget 2012, it is mentioned that the SG economy is 'at full employment'
- ✓ Actual growth has also increased if there are firms located in various countries to tap on growth opportunities worldwide, adding to GDP growth of the country. This is especially

true where offshoring has helped boost growth of MNCs and TNCs and thus the growth of the country.

- ✓ Opening of markets → more choices of goods and services → increase in availability of goods and services → improve material standard of living
- ✓ **LR potential growth:** Increased ease of technological transfer and migration of workers and the ability to tap on a global pool of foreign direct investment has raised levels of potential growth by increasing ease of technological breakthroughs and pool of resources available. Foreign talent helps to develop high value adding and strategic industries in Singapore. For example, R&D scientists and finance/banking professionals. Increase in LRAS as quantity and quality of labour force is enlarged

<Explain via LRAS>

- ✓ As mentioned above, with constant attraction of FDI, it can also lead to the development of new niche markets for an economy, which is critical to maintain global competitiveness as comparative advantage is a dynamic concept that changes over-time.
 - i.e. SG → Attraction of FDI leads to the development of a new niche area in the pharmaceutical industry → i.e. GlaxoSmithKline



- As seen in the figure above, a simultaneous increase in C and FDI will reinforce each other to create a greater increase in the aggregate demand (AD) from AD0 to AD1. With an increase in AD, firms will experience a fall in Inventories. This will signal to the firms to step up on Production. Subsequently, firms will hire more workers leading to rising Output, resulting in falling unemployment and rising income (Y). As income rises, spending by the households will increase. This implies that as one's spending becomes another income, this increase in spending will lead to an increase in income of another group of people because of the rising demand for the goods and services they produce. Overall, the multiplier effect is triggered off leading to a multiple increase in production, output and national income, leading to expansionary effects on the economy
- In the long run, the LRAS will also shift to the right, from AS0 to AS1, leading to an increase in potential growth from Y_0 to Y_1 .

Recognise the negative effects of “building an open global economy” → have a linking statement and relate to challenges of globalisation

Explain negative effects/problems of globalisation on the economy

- ✓ **Vulnerability to external shocks** → **External shocks via fall in global demand arising from global recessions:**
 - Globalisation has resulted in the integration of economies around the world → Singapore becomes more dependent on external demand thereby increasing their vulnerability to external shocks via a fall in demand for their exports.
 - For instance, the Eurozone crisis has led to fall in income and purchasing power of affected European citizens, leading to a fall in imports from emerging Asian countries (Singapore included), and hence, net export and hence AD falls, ceteris paribus. This created larger fluctuations in real national income and thus economic growth and employment.
 - Evaluation: Since Singapore generally produces goods and services that are more luxurious in nature (electronics and telecommunications), this implies that the demand for Singapore's exports tend to be income-elastic. Thus, any fall in income of trading partners will lead to a more than proportionate fall in the demand for her goods and services, ceteris paribus, creating even greater fluctuations real national income and thus economic growth and employment.

- ✓ **Increase unemployment in Singapore**
 - Structural unemployment especially in industries such as manufacturing due to greater competition from lower-cost foreign producers such as China and regional countries like Thailand, Malaysia, firms may choose to offshore and outsource certain business activities such as capital-intensive manufacturing which used to be conducted in Singapore or transition of economy from capital intensive to knowledge and technology based industries. Decline in production levels will imply hiring of fewer labour or even retrenchment of workers. Retrenched workers from these industries may not have appropriate skills to be employed in emerging industries in Singapore. This mis-match in skills results in structural unemployment. As such, workers who are previously employed in the sunset industries (or industries without CA) cannot gain employment in sunrise industries because of the mismatch of skills of these workers with the jobs available.
 - Cyclical unemployment can occur due to overreliance on export revenue which might make Singapore more vulnerable to external shocks. E.g. Fall in GDP due to SARS outbreak, global recession etc. → fall in demand for labour → unemployment rises.
 - Increasing trade and capital flows encourage advancement in technology and increasing productivity of factors of production. Thus, less workers may be required due to the increase in technology and productivity levels and the economy may be facing jobless growth.

- ✓ **Increase income inequality**
 - Globalisation rewards the premium on skills and hence wages for skilled workers in sunrise industries are on the rise, while unskilled workers are increasingly displaced in sunset industries that are currently being phased out, exacerbating a gap between these workers.
 - Higher income disparities may also be observed as workers in exporting industries are likely to see higher incomes when there is an increase in demand for their goods and services. Those workers that focus in producing for domestic sectors are likely to see their incomes falling as non-CA sunset industries will lag behind or experience a fall in demand for their goods and services. For example, wages in financial, pharmaceutical sectors have been rising at faster rates relative to non-CA industries (e.g. textiles industries or other low-end manufacturing industries).

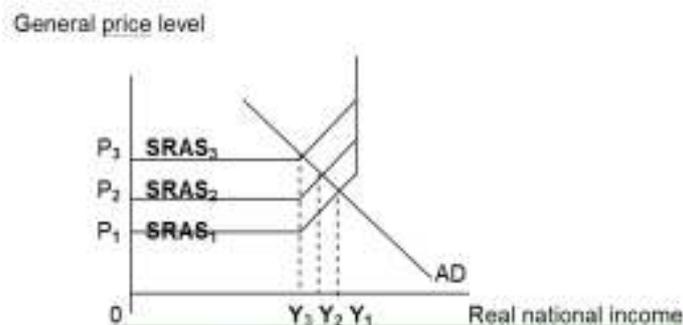
- The influx of cheap unskilled labour from the neighbouring countries such as India and Thailand has driven down the wages of unskilled workers in Singapore. On the other hand, highly skilled labour is demanded by MNCs in other countries and thus these workers are able to earn high wages abroad.
- Hence, income inequality worsens. This creates inequitable outcomes which create social tension.
- *Students can choose to explain the rising income inequality using DD-SS analysis (labour markets)*

✓ **Lower SOL (non-material aspect) due to higher stress level and greater environmental problems**

- Workers may need to work longer hours at the expense of leisure time. Environmental problems such as air pollution, water pollution etc. due to higher levels of industrial production, clearing of land for production facilities, discharge of toxic wastes into the environment may occur → worsening of non-material SOL
- Exhaustion of resources? Possibly compromising sustainable growth
- Possible occurrence of brain drain – loss of scarce talent to other countries which is a major challenge confronting the small open economy. It is a serious concern as this will limit the potential growth of the Singapore economy → fall in factor quality & quantity → Fall in productive capacity of Singapore economy → LRAS falls → limit both actual & potential growth of the economy. Despite Singapore's development of a world class education system to produce a skilled workforce, brain drain implies that the benefits will not be experienced by the Singapore economy despite efforts by government in incurring huge costs to provide subsidised education to its citizens.

✓ **Vulnerability to external shocks → External shocks of rising oil prices between 2007 & 2008Q2 & 2013Q3 (Unrest in Egypt) [Note that recent oil prices are not as high compared to the period during oil shock]**

- For oil-import country like Singapore, they will be greatly affected both internally and externally due to rising global oil prices. As crude oil is an essential factor of production for many industries and products, example transportation, utilities, petrochemicals and plastic products. Higher global oil prices will translate into higher COP for firms in the short run.
- When costs of production (COP) rise independently of AD, there will be cost-push inflation (in the form of import-price push inflation), whereby SRAS falls, resulting in a leftward shift of the SRAS. Firms respond to the increase in COP by cutting back on production as well as raising the price of finished goods and services to maintain profitability. This will lead to cost push inflation (import-price-push inflation). Households will also experience higher COL.

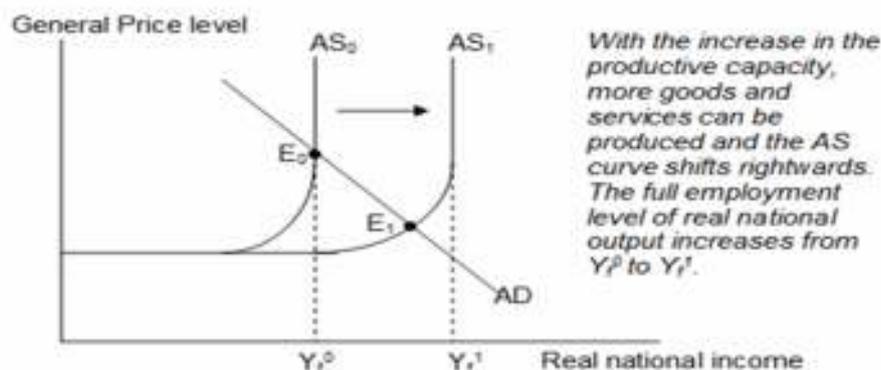


- With reference to the diagram above, economic growth will slow down (moderated) from Y_1 to Y_3 as firms lay off workers to cope with the higher COP or may even shut-down. Unemployment level will increase. A situation of stagflation (high unemployment and high inflation) develops → AG suffers (real NY ↓s) & unN+ ↑s.

- Workers could demand higher nominal wages to offset the rising cost of living. If wages grow faster than the underlying trends in productivity, employers would have to pass on the higher costs to consumers, resulting in a second round of inflation.
- Rise in COP → reduction in profit margins → reduction in production → leftwards shift of SRAS → cost-push inflation (P_1 increase to P_2 then P_3) → adversely affect export-price competitiveness, particularly in service industries (e.g. tourism, education industries etc.)
- To reap the full benefits of globalisation, Singapore government should try to achieve the following:
 - Improve the competitiveness of Singapore's X industry through
 - Improving its price competitiveness
 - Improving the quality of its X
 - Improve the attractiveness of Singapore as a FDI destination for overseas MNCs.
 - Attract top talent to augment the quantity and quality of its labour force.
- To mitigate the negative effects of globalisation, Singapore government should try to achieve the following:
 - Reduce the volatility of Singapore economic performance by not being overly reliant on external demand and thus increased vulnerability to external shocks on the economy.
 - Loss of comparative advantage (in the production of certain goods such as low value manufactured products) leading to outflow of investments and thus a rise in structural unemployment;
 - Manage income inequality in Singapore
 - Enhance and expand its public infrastructure to cope with increasing labour force and resident population

Students are only required to clearly explain any 3 policies in detail, linking the policy to mitigate specific negative impact or to reap specific benefit of globalisation as discussed in the essay above. (Any plausible policy is possible for this part of the question)

- **Policies that can improve competitiveness of Singapore's X industry include:**
 - 1) **Supply-side policy**
Market-oriented policy (to increase international cost competitiveness):
 - **Step (1): What the policy is about**
 The government could have implemented pro-business policies to have a conducive environment to encourage entrepreneurship and to attract foreign direct investment (FDI). For instance, Singapore has slashed its corporate taxes from 20% to 17%.
 - **Step (2): How the policy works**
 The reduction in corporate taxes also enhances international cost competitiveness, allowing Singapore to attract FDI. With a fall in corporate taxes, profitability of investment and hence FDI rises, thereby raising long-term capital inflows into these countries. Assuming ceteris paribus, it will lead to an improvement in capital and financial account, reducing the risk of falling FDI. Simultaneously, this will also raise the long-run aggregate supply of the economy as factor quantity and quality rises, leading to potential growth.



Interventionist-oriented policy (to increase export-price competitiveness):

○ **Step (1) & Step (2): What the policy is about & How the policy works**

Also, the government can implement interventionist long-run supply policies to enhance both export-price and international-cost competitiveness via R&D, so as to move up the value chain. The government can also implement industrial policies, whereby it identifies new market niche and adopts R&D to create new comparative advantage. This will reduce falling export-price competitiveness.

To improve current account from a fall in export-price-competitiveness:

- When the government intervenes and spends directly on R&D of new production techniques, the usage of better technology allows for better quality goods (i.e. biomedical products) to be produced at a lower cost of production, increasing export-price competitiveness. As such, the price of exports is relatively cheaper. Assuming the demand for exports is price-elastic, any fall in price of exports will lead to a more than proportionate rise in quantity demanded for exports, ceteris paribus, thereby raising export revenue. Assuming ceteris paribus, net export revenue (X-M) will rise, improving the current account and reducing the extent of direct competition and the risk of falling trade.

To improve capital & financial account:

- Enhancement of infrastructure to increase productivity of businesses in Singapore → such investment in R&D reduces COP, ceteris paribus. For example, air, road infrastructure and industry infrastructure such as Jurong Island. Jurong Island boasts a set of seamlessly integrated infrastructure solutions which includes service corridors, logistics and warehousing, as well as a comprehensive host of shared third-party utilities and services. With its dedicated "plug and play" infrastructure, companies are able to enjoy cost savings. As such, this seeks to attract FDI and hence increases international cost competitiveness as it reduces cost of investing in Singapore. With a rise in FDI, it results in in long-term capital inflows. Assuming ceteris paribus, it will lead to an improvement in capital and financial account, reducing the risk of falling investment.

[Can also consider recent developments: greater digital connection with other economies as well as greater infrastructure connections → continued expansion of the city-state's airport as well as other projects, including a high-speed rail between the city-state and Kuala Lumpur, the capital of Malaysia]

○ **Step (3): How well the policy works**

1) Cost of financing → High opportunity cost for the government:

The high cost of providing R&D and corporate tax cuts can impose a burden on the government budget, which could result in high opportunity costs for the government. This is especially true if the identifies wrong industries and result in greater misallocation of resources. The government hence needs to consider the costs of financing. Assuming the

government spends beyond its means, this could worsen the fiscal position and the government could incur a budget deficit if the worsening of the fiscal budget persists.

2) Time period → Long gestation period

Also, long gestation period is required for the long-run supply-side policies to take effect. The problem of time lag is especially critical for long-run supply-side policies because of the long-term span of the projects. For instance, the development of large industry infrastructure requires a long planning and construction period. The industry-specific nature of Jurong Island also requires the government to correctly identify potential CA industries. It will take a long time for the R&D to materialize or bear fruit. More importantly, if the R&D does not materialize, it will lead to wastage of resource and government funds, leading to high opportunity cost incurred. As such, if the government wants to restore export-price competitiveness and international-cost competitiveness in the short-run urgently, it is not a viable policy option.

Policies that can reduce volatility of Singapore's economic performance due to external shocks via fall in global demand arising from global recessions include:

Demand-management policies to stabilise economy in the short-run:

- It is important that policymakers identify new risks as they emerge and respond promptly. To reduce output volatility, governments should adopt monetary and fiscal policies in their countries for short-run macroeconomic stabilisation (e.g. manage fluctuations in national income and price levels).

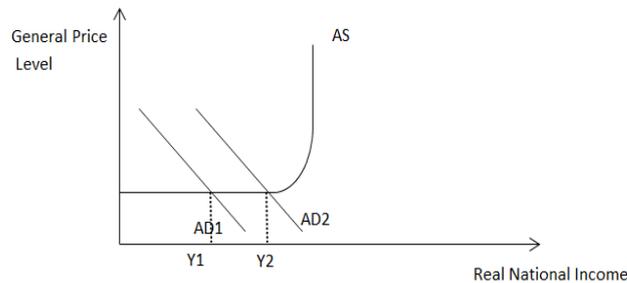
Expansionary FP:

Step (1): What the policy is about

The government can implement expansionary fiscal policy to offset the fall in (X-M) and FDI by stimulating C, I and G. Expansionary fiscal policy involves the government manipulating the level of government expenditure (G) and tax (T) so as to increase AD, thereby raising economic activity, output and employment. For example, the Singapore government implemented the Resilience Package which included an increase in expenditure on infrastructure to increase economic growth in the 2008-2009 Global Financial Crisis.

Step (2): How the policy works

A rise in government expenditure will raise G. On the other hand, a fall in income taxes increases the disposable incomes of consumers and hence purchasing power, leading to a rise in C. Simultaneously, the fall in corporate taxes will increase the profitability of investment to the firms as after-tax profits are higher, and hence lead to a rise in I. Overall, a simultaneous rise in C, I and G, ceteris paribus → reinforce one another to create a greater increase in aggregate demand (AD), ceteris paribus. As such, AD will shift to the right by a greater extent from AD_1 to AD_2 .



As seen above, with a rise in C, I and G, firms will experience a fall in inventories. This will signal to the firms to step up on production. Subsequently, firms will hire more workers leading to rising output, resulting in falling unemployment and rising income. As income rises, spending by the households will increase. This implies that as one's spending becomes another income, this increase in spending will lead to an increase in income of another group of people because of the rising demand for the goods and services they produce. Overall, the multiplier effect is triggered off leading to a multiple increase in production, output and national income, resulting in expansionary effects on the economy, resulting in a rise in real national income from Y_1 to Y_3 , stabilizing the economy and reducing volatility of the fall in net exports.

- **Step (3): How well the policy works**

- 1) Size of multiplier:

Nevertheless, the value of the national income multiplier would limit to how much the reduction in $(X-M)$ can be mitigated. For Singapore where we have high leakages (High imports and savings due to compulsory savings in CPF), the k value will be small. Thus, the extent of increase in AD via the multiplier effect would be limited. The effectiveness of the expansionary fiscal policy would then be limited. This implies that Singapore government must inject greater extent of in order to achieve the same amount of actual growth than an economy with large multiplier effect.

Evaluation: To further reduce the vulnerability of external shocks via global recessions, Singapore can take further steps by decoupling and rebalancing from low-growth countries (i.e. US and Europe) to high-growth countries (i.e. Asian region), so as to diversify the risks. This can be done via signing more FTAs among themselves, leading to higher intra-Asia trade, so as to focus more on regional efforts to increase economic growth instead and will help cushion the negative effect of economic slowdown of any one of Singapore's trading partners. However, given the inter-connected nature of the global economies, Singapore will inevitably be significantly affected by economic slowdown of the biggest economies in the world, such as the US and Chinese economies.

Policies that can reduce income inequality

- 1) Progressive tax system:

- **Step (1): What the policy is about**

Progressive income taxes with higher income earners paying a proportionately higher tax to redistribute income and wealth so as to ensure a more equitable distribution of

income in the economy. For instance, in Singapore, the highest taxable income rate is at 22% while the lowest taxable income rate is at 0%.

- **Step (2): How the policy works**

Progressive income taxes allow the redistribution of income and wealth so as to ensure a more equitable distribution of income in the economy. The marginal tax rate on personal income rises with the tax bracket, which makes the rich pay a larger proportion of their personal income tax to the government. The government can use the higher tax revenue collected from the higher income households and redistribute to the low-income households via one-off hand-outs. This helps to redistribute income from high-income households to low-income households, mitigating income inequality.

- **Step (3): How well the policy works**

However, such high income taxes for high-income earners may result in disincentive to work as higher income taxes stifle the motivation of individual workers. As such, it may lead to a fall in labour productivity, resulting in a rise in cost of production for firms, which may be translated to higher prices for consumers. Moreover, the fall in labour productivity may also lead to a fall in international cost competitiveness as FDI inflows fall. All these may be undesirable particularly since we aim to achieve to sustained economic growth.

2) Long-run supply-side policy (Interventionist policy):

Alternatively, the government can also implement subsidies for education and retraining to enable low-skilled workers to gain skills relevant in the economy and increase mobility, so that they can be reabsorbed into the sunrise industries and earn higher income.

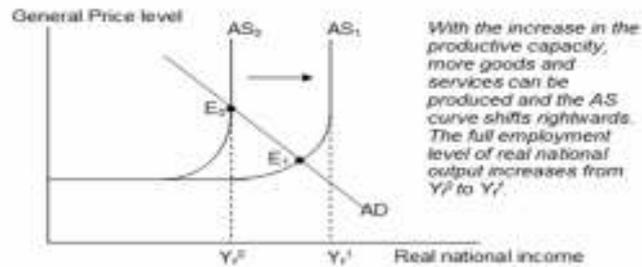
- **Step (1): Interventionist policy → Education, training & retraining**

For instance, the Singapore government has implemented Workfare Training Support (WTS) Scheme which complements Workfare Income Supplement (WIS) Scheme by encouraging Singaporean workers to attend training to improve their skills. WTS also supports employers to send their workers for training. The Singapore government also introduced SkillsFuture, where we aim to develop an integrated, high-quality system of education and training that responds to constantly evolving industry needs, as well as foster a culture that supports lifelong learning. The Continuing Education and Training (CET) Masterplan aims to prepare the Singapore workforce for the future and the CET Masterplan, launched in 2008, has been refreshed in 2014 to better ensure a competitive and career resilient workforce. It will enable working adults, regardless of their starting qualifications, to continue to build and deepen their skills and competencies, throughout their careers.

- **Step (2): How the policy works**

When the government spends on education, training and re-training, it improves workers' skills and their stock of human capital, whereby their acquired skills and knowledge help in the production of good and services. This can reduce structural unemployment as it improves labour mobility. More education and upgrading of skills for workers will help ensure the 'employability' of workers by equipping workers with the relevant skills to move between different jobs (i.e. from sunset industries to sunrise industries).

This also raises national output via a rise in AD in short run and a rise in productive capacity of the economy via a rise in labour productivity and hence a rise in the long-run aggregate supply. This will shift the AS curve to the right from AS1 to AS2, as seen in the diagram below. Subsequently, potential growth occurs.



- **Step (3): How well the policy works**

- 1) Resistance of workers towards education and training:

The main concern with such a policy lies in the attitude, aptitude and age of the workers who were sent for the courses to solve structural unemployment. Without a good attitude towards learning, an aptitude and flair for learning new skills, and the ability to internalise the skills set learnt quickly, the level of productivity may not have increased as desired and hence render the policy less effective. In this case, the workers could be resistant towards education and training. This is especially true in the case of older workers or contract workers. To illustrate, for older workers, they may not find the training cost to be effective for them, especially if they are near retiring age. For casual workers, their pay is usually tied with the number of hours worked. Thus, the more hours that they dedicate to training courses, the lower pay they would get. Thus, the opportunity cost of attending these courses could be high.

Furthermore, employers may be reluctant to send their workers for training courses too. Firstly, they may find it cost-inefficient to send older workers for training courses, and thus opportunity cost is high too. Also, employers may be reluctant to send younger workers for training courses to enhance their labour mobility, which may result in job-hopping. Overall, such a policy may be rendered to be ineffective if the receptiveness and willingness for both workers and employers are low.

- 2) Cost of financing → high opportunity cost for the government:

Moreover, the cost of education, training and re-training can impose a burden on the government budget, which could result in high opportunity costs for the government. The government hence needs to consider the costs of financing. Assuming the government spends beyond its means, this could worsen the fiscal position and the government could incur a budget deficit if the worsening of the fiscal budget persists.

Policies that can manage environmental degradation (Negative externality)

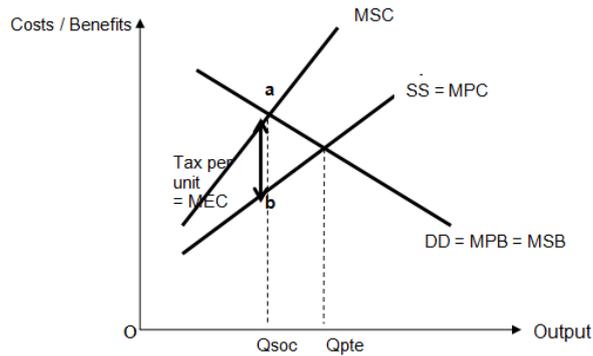
- 1) Pigouvian Taxes

- **Step (1): What the policy is about**

The government can implement Pigouvian taxes to curb external costs, such as air pollution.

- **Step (2): How the policy works**

To ensure effectiveness of policy, the tax imposed should be ideally be equal to MEC (i.e. ab per unit of output) at Q_{soc} . In this case, the taxes will then force the producers to internalize the external costs, raising the MPC to be at the same level as MSC. This will then reduce production to Q_{soc} level, which is at the socially optimal level. This is because a tax raises cost of production and leads to a fall in the supply, reducing the production from Q_{pte} to Q_{soc} as seen below.



○ **Step (3): How well the policy works**

If MEC is measured accurately, the tax policy can effectively correct the market failure without causing any distortion in the market. Tax would allow the market to re-adjust to a new equilibrium. The government can use the tax revenue collected to fund green R&D initiatives to curb air pollution and hence these external costs.

However, the 'unpriced' nature of MEC increases inaccuracy to the determining of the tax amount. MEC include opportunity costs and time spent, which is difficult to express in monetary terms. Hence, the tax amount imposed could be under/over-estimated, leading to under/over-correction of market, resulting in further welfare losses in the society and hence government failure.

Overall, the effectiveness of subsidies as a policy depends highly on how well and accurately the government is able to measure the level of MEC.

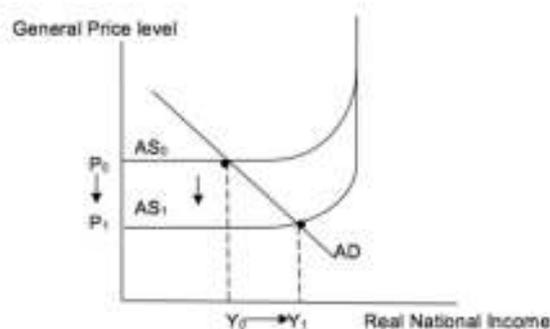
Policies that can reduce volatility of Singapore's economic performance due to external shocks of rising oil prices include:

Short-run supply-side policy:

○ **Step (1): What the policy is about**

Short-run supply-side policies (e.g. subsidies) are usually stop-gap measures that yield only temporary results.

○ **Step (2): How the policy works**



With oil subsidies, this reduces cost of production and increases the profit margins of oil-reliant firms, thereby increases SRAS, ceteris paribus, shifting the SRAS curve to the right from $SRAS_0$ to $SRAS_1$. As a result, the general price level will fall from P_0 to P_1 , reducing cost-push inflation, while real national income increases from Y_0 to Y_1 . Overall, it allows the same quantity of output to be produced and sold at a lower price.

- **Step (3): How well the policy works**

- 1) Over-reliance on government + high cost of financing

Firms may have less incentive to innovate to reduce their dependence on oil as one of their factor inputs, particularly since they can rely on the government to subsidise their cost of production. As such, these subsidies could lead to over-reliance on the government, which in turn worsens the fiscal position. Assuming the government spends beyond its means, this could worsen the fiscal position and the government could incur a budget deficit if the worsening of fiscal budget worsens.

Synthesis & evaluative conclusion:

Take a stand

- ✓ To conclude, current policies taken by the Singapore government are largely appropriate despite their limitations. These measures are adopted after taking into account the fact that Singapore cannot isolate herself from the rest of the world due to the characteristics of its economy and thus need to embrace globalisation by tapping on the various opportunities while undertaking various measures to minimise the risks.

Justifications for a range of policies

- ✓ Overall, while globalisation is beneficial in generating sustained economic growth, it can also lead to varying microeconomic and macroeconomic problems as illustrated above, and hence there is a need for the Singapore government to step in to intervene in a timely and appropriate manner. Nonetheless, since all policies have limitations, it is important to note that the Singapore government should implement a basket of policies so as to mitigate the negative impacts of building an open global economy and reap its benefits to the fullest. However, one should also consider the following--- intervention has its costs and the choice of intervention mode greatly determines if costs will outweigh benefits. The government needs to conduct a careful and rigorous cost-benefit analysis, as government intervention is only viable if there are more benefits than costs and any policy used must be checked for its effectiveness in solving the underlying problems.

Contextualising to Singapore

- ✓ It can be seen that the measures adopted by Singapore to mitigate the negative impacts of building an open global economy and help reap its benefits to the fullest are rationalised upon the unique situation which Singapore faces – the lack of natural resources, utilising human capital and enhancing the use of Singapore's strategic geographical location. To remain globally competitive, Singapore has started to shift away from value-addedness towards value-creation. In order to achieve greater value-creation, Singapore has channelled its resources towards developing its human capital and restructuring the economy to be geared towards being an innovative economy. Though being a challenging task, the move towards gaining greater innovation has shown Singapore's vision and forward planning in trying to identify the critical key factor towards success so as to continue to remain relevant in the future global market.
- ✓ Given the constant changes to the global market, Singapore's refining of its fiscal policy, exchange rate policy and supply-side policies are also key to ensuring that we stay competitive. Singapore is aware that keeping costs low is not the only way to stay competitive globally, but to also maintain an efficient government that invests in skilled labour force, produce quality products and ensuring a conducive environment for businesses to uphold Singapore's reputable image in order to attract the global market.

Knowledge, Application, Understanding and Analysis		
L3	<p>For an answer with well-developed explanations and analysis. Students who show clarity of thought and coherent arguments with good explanation of the benefits and negative impact of globalization and policies are linked to addressing specific negative impact or reaping specific benefits with limitations of policies discussed.</p> <p>There is good economic analysis with clearly illustrated diagrams, answer is appropriate to the Singapore context with relevant examples being cited and good essay structure.</p> <p>I.e. Students who provide a balanced and rigorous answer with sufficient breadth depth will get L3 marks.</p>	15-20
L2	<p>For an answer that applied appropriate theoretical framework and used the 5 macro objectives and relevant economic objectives in analyzing the benefits and negative impact of globalization and policies but answer but lack depth in coverage and quality explanation and undeveloped arguments (clarity and coherence).</p> <p>I.e. Students who provide a balanced answer to both parts of the question but lacks depth of analysis will get L2 marks.</p>	9-14
L1	<p>For an answer that displays some knowledge of the concepts of globalization and the benefits and negative impacts that comes along with globalization and policies but with weak or unclear explanation.</p> <p>I.e. Students who did not provide or use inappropriate framework. Did not use the 4 macro objectives and other relevant economic objectives in analyzing the benefits and negative impacts that comes along with globalization and policies will get L1 marks. Students who make glaring conceptual errors, did not address the question, did not analyse any policies or make superficial analysis, listing of policies with no analysis using appropriate economics framework will get L1 marks.</p>	1-8

Allow up to 5 additional marks for Evaluation		
E3	For an evaluative discussion based on economic analysis.	4-5
E2	<p>Some attempt at evaluation, but are mostly summative conclusion.</p> <p>Evaluation is relevant to the question but does not fully explain the judgment or does not base it on relevant analysis.</p>	2-3
E1	For an unexplained judgment, or one that is not supported by analysis.	1