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ECONOMICS Higher 2

Syllabus 9757

Examiner's Report

Year 5 Promotional Examination 2019



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ECONOMICS

Y5 H2 Promotional Examination 2019

Question 1 Case Study

Note: Good sample scripts have been included in the examiner's report. These good sample scripts are not model answers – there may still be room for improvement. What you can learn from them is that these students explained, not just stated, their points. They also made good reference to case material to link to their theoretical knowledge, choosing the most appropriate framework.

(a) Using Table 1, compare the changes in general price and healthcare price levels in Singapore between 2011 and 2017.

[2]

[6]

- Similarity (1m):
 - Both healthcare costs and consumer prices increased between 2011 and 2017.
- Difference (1m):
 - However, healthcare costs rose by a greater extent than consumer prices.

Examiner's comments:

- No need to quote numerical values for the percentage changes. If quoted numerical values and the values are incorrect, full credit will not be given.
- Many students quoted the absolute change instead of percentage change.
- Some students erroneously compared across price indices to wrongly conclude that general prices were higher or lower than healthcare prices.
- Some students gave a lengthy description without any explicit comparison. Brevity is the soul of wit, be more succinct.
- Some students broke up the time range and provided similarity and difference based on different periods, but at least one full time range comparison is required.
- Some students described the relationships between the two price trends (e.g. positive relationship), but describing the relationship does not directly compare the direction of change.
- Students who made explicit comparisons using comparative terminologies, e.g. Both / similarly/ however /in contrast, tend to score better than those who did not. Note the question requirement to 'compare'.

(b) Assess whether making patients pay for different prices for Class A and Class B2 wards (Table 2) is an example of price discrimination.

• Definition:

- Price discrimination occurs when firms charge different consumers different prices for the same good, for reasons not associated with cost differences.
- Thesis:
 - It is a case of price discrimination because SGH provides two different ward classes for consumers to make their choice based on their different PED. Demand for Class A wards is relatively less price elastic than demand for Class B2 because high-income who self-select into Class A wards spend a smaller proportion of their income on hospital bills. Demand for Class B2 wards, on the other hand, is relatively more price elastic than demand for Class B2 wards spend a larger proportion of their income on hospital bills. Thus, the price for Class A wards is higher than Class B wards

because price discrimination allows the hospital to capture consumer surplus which will add on to its TR, and in turn its total profits.

 Assuming that the marginal costs (MC) of providing services to both Ward A and Ward B are the same, by equating the MC with the marginal revenue (MR) in both markets, at the profitmaximising output level in both wards, the profit-maximising price will be higher in the submarket with the relatively less price elastic demand. Hence, a higher price will be charged for Ward A than for Ward B.

• Anti-thesis:

- However, there are significant cost differences e.g. providing air-conditioning to Class A
 wards and choice of meals will incur more costs than a non-aircon ward with no meals
 through higher electricity bills and/or resource and labour costs in meal preparation.
- OR The different wards are not the same good because the experience is different, for e.g. Class A ward offers more personalised services than Class B2 ward.

• Synthesis:

- In conclusion, whether it is an example of price discrimination is difficult to ascertain because it depends on whether the cost difference justifies the price difference.
- If the cost difference is much less than the price difference, then there is an element of price discrimination.

Suggested mark scheme:

•	Listing throughout or glaring conceptual errors throughout or lacking in application to	1-3m
	context, max 2m	
•	Journalistic throughout, that is, lacking in rigour in economic analysis	
٠	One-sided answer that provides rigour in economic analysis, max 4m	4-6m
•	No synthesis, max 5m	
•	To secure max 6 marks, a balanced response that provide rigour in economic analysis	
	and a synthesis	

Examiner's comments:

- Weaker answers for this question did not manage to provide a two-sided argument with a final synthesis for "assess whether" command word.
- Students who scored well for this question typically considered PED/segmenting the market, cost differences and explained why on balance, this was or was not price discrimination. This was done by briefly accounting for whether the price indeed is justified by the cost difference.
- No need to identify which degree of PD to secure full credit.
- Diagram is not required.
- Monopoly power and no resale point to ability to PD, but not whether the different prices is an
 example of PD. Listing conditions for price discrimination is not enough to score for this question.
 Conditions are necessary for price discrimination but is insufficient to show that it is actually price
 discrimination. To put it in another way, there are many firms who possess these conditions but do
 not price discriminate.
- On that note, dismissing conditions for price discrimination, however, is sufficient to show that this is NOT price discrimination.

Good sample script:

Price discrimination refers to charging different prices for the same good, whereby the price differences are not reflected by the cost differences.

Making patients pay for different prices for Class A and Class B2 wards may be an example of price discrimination because of the difference in price elasticity of demand (PED) for different groups of consumers. PED is the measure of responsiveness of quantity demanded of a good to a change in its price, ceteris paribus.	
Those who choose 'more luxurious care' (extract 2) in Class A wards are usually the higher income groups whose demand for such wards is price inelastic. This is because the price of healthcare takes up a smaller proportion of their income than those from the lower income group. Thus the price of Class A wards is higher. On the other hand, lower-income groups have to spend a larger proportion of their income on healthcare, hence their demand is relatively more price elastic so they are charged a lower price for Class B2 wards. Thus difference in price for Class B2 and Class A is due to difference in PED.	Clear reference to PED determinant and hence price charged
However, there are differences in cost of providing services of Class A and Class B2 wards. In Table 2, Class A wards have single rooms, air-condition, attached bathroom and a choice of meals while Class B2 has 5 or 6-bedded rooms with natural ventilation. Thus, there is an obvious difference in cost of providing these wards as more resources such as electricity in air-conditioning and labour costs to provide a higher variety of food for those in Class A, whereas Class B2 requires less as their resources are shared between more patients. Hence it would cost more to provide Class A services than Class B2 services, thus there is a large difference in price.	Differences in costs explained
In conclusion, the difference in price of Class A and Class B2 wards is not an example of price discrimination as the difference can be accounted for by the significant differences in costs between providing services for both, especially since the cost of Class B2 wards are spread among more patients sharing the same ward.	Key determinant is if cost differences are large enough to justify differences in price
Marie Goh 20S06R	

- (c) With reference to Extract 3, discuss the extent to which non-price competition is the main mode of competition among private hospitals in Singapore in order to increase profits.
- Introduction: Clarify ambiguity
 - Define non-price competition (any strategies to increase AR and make demand for the hospital's services less price elastic), price competition (lowering prices) and profits (TR-TC).

[8]

- Thesis: Explain how and why non-price competition increases profits, hence it is an important mode of competition among private hospitals in Singapore (1 well-explained reason (using case evidence and the best economics framework) is sufficient)
 - To increase profits via non-price competition, private hospitals in Singapore compete by product differentiation, that is, by providing particular niche services that distinguish them from their rivals. As explained in Extract 3, "Gleneagles Hospital... provides medical and surgical acute tertiary care services, specialising in cardiology, internal medicine and obstetrics... Mount Elizabeth... [focuses on] oncology and general surgery while Thomson Medical focuses on gynaecology and fertility treatment". Beyond specialized medical

services, hospitals also compete by focusing on quality luxury services such as "focusing on more A class wards" or catering to "expats". These specialised services are examples of non-price competition which increase demand. Demand may increase as it caters to tastes and preferences as well as rising need for particular healthcare services, hence willingness and ability to pay increases. Demand may also become relatively less price elastic because of the unique service offered and so a lack of substitutes for these niche services. This will mean the hospital can retain its customers and profits when its competitors lower their prices. After introducing such niche services, AR and MR curves shift to the right from AR1 and MR1 to AR2 and MR2. This will cause the profit-maximising price and output to increase to $0P_2$ and $0Q_2$ respectively. Assuming that hospitals made normal profits prior to product differentiation, profits increase from normal profits to supernormal profits (P_2CAB) as shown in the diagram below.



- Anti-thesis: Explain how and why price competition can also increase profits, hence it is also an important mode of competition among private hospitals in Singapore (1 wellexplained reason is sufficient)
 - Private hospitals in Singapore compete by price because there is greater transparency in pricing as the government has provided "consumers with price-comparison data as well as provider-performance data so people can comparison shop both on price and quality". In theory, by competing on price, private hospitals which prevail in the long run can increase market share and profits. This is because private hospitals exhibit mutually interdependent behaviour as they are in an oligopoly market structure. Hence, when one firm lowers price, all other firms are likely to follow suit to avoid losing market share and profits. It is likely that some hospitals will go to the extent of under-cutting their rivals, triggering a price war. Assuming constant market demand, price wars will lead to lower profits and even

subnormal profits. In the long run, firms that do not have sufficient retained profits to tide them over the losses will have to leave the market while firms that do will survive the price war and enjoy an increase in demand and an increase in market power, resulting in an increase in profits in the long run.

• Evaluation: Make a judgement given the context and explain your judgement

In conclusion, non-price competition is the main mode of competition for private hospitals to increase their profits but greater transparency in pricing has also facilitated some degree of price competition. Hence, private hospitals have to engage in price competition to protect their profits. If the CED for their services is high, private hospitals that do not offer competitive prices may suffer losses and be priced out of the market in the long run. OR Private hospitals operate in an oligopoly where there are few dominant firms such as Mount Elizabeth and Gleneagles Hospital. Hence there is a high degree of mutual interdependency and in turn a high degree of rival consciousness between these hospitals. Therefore, private hospitals prefer to avoid price competition because price wars are not only costly and can lead to heavy losses for all private hospitals in the short run.

Suggested mark scheme:

L1	 Listing throughout or glaring conceptual errors throughout or lacking in context, max 2 Journalistic with no theoretical framework throughout Theoretical approach, meaning no contextual application at all, meaning no hint at use of case evidence at all 	1-3m
L2	 One-sided response that provides rigour of economic analysis in given context, max 4 marks To secure max 6 marks, a balanced response that provide rigour in economics analysis using the most appropriate economics framework 	4-6m
E	 Judgement based on balanced argument, with explanation Judgement without explanation, zero marks 	1-2m

Examiner's comments:

- Some students erroneously stated that reaping EOS is a form of non-price competition EOS is a scale concept and is separate from process innovation (non-price competition).
- A handful of students conflated price discrimination/ raising price with price competition. Price competition refers to reducing price. The act of raising price is almost always due to some other underlying factor (e.g. product differentiation, brand loyalty etc which lowers PED) means that it is NOT price competition.
- Collusion is not accepted because collusion is not competition but banding together to reduce uncertainty and to maximise joint profits, rather than individual profits.
- Many students used the wrong framework market demand and supply diagram instead of firm level diagram (the downward sloping AR/MR/AC/MC) diagram.
- Some students drew a profit box based on the MC instead of the AC. Students are advised that if the question is on profits, the diagram and analysis must refer to AR and AC to discuss profits.
- The effect of cost-saving technologies is reflected by a downward shift of both the LRAC and LRMC curves. This is because each LRAC and LRMC curve is drawn for a given technology

level. Some students, however, drew AC shifting independently when they should have drawn MC shifting as a result of cost-saving technologies (process innovation).

- Reducing "red tape and administrative costs" results in a shift in only the SRAC curve (and not the SRMC curve) because administrative costs are typically fixed costs as administrative costs will be incurred regardless of the level of output even when output is zero.
- The better responses tend to keep tight links to the question. Especially in the discussion of price competition, they managed to link it to LR profits through market share dominance should the firm price out her competitors.
- Some responses suffered from repetition of arguments that had the same premise and conclusion, having repeated paragraphs about how PED is lowered. Distinct ideas should be considered.
- While most students were able to specify lower PED as one benefit of product differentiation, many missed out the impact on increasing DD (AR), which ultimately leads to an outward shift of AR and MR curve, not simply a PED change
- Many students mistakenly made the following statement "since PED is lower due to reduced substitutability, a rise in the price will lead to a less than proportionate fall in quantity demanded, hence, TR will rise, cet. par. profit increases". Students need to realize that a relatively lower PED doesn't mean |PED| < 1. Instead of taking this argument, good answers generally focused on how profit-max levels will change due to increased AR/MR and the AR/MR becoming less price elastic in demand as price-setting ability has increased, as reflected by a rightward shift of the AR and MR curves and both curves becoming steeper using a diagram. As a result, both the profit-maximising output and price levels increase because of increased market power which lead to an increase in total profits, ceteris paribus.

	Non-price competition	Price competition
Increases profits becauseProduct innovation: Increase demand and reduce CED → increase price-setting ability and hence TRProcess innovation: Reduce pass on cost savings to con form of lower prices.		Process innovation: Reduce AC and MC and pass on cost savings to consumers in the form of lower prices.
	OR	OR
	Process innovation: Reduce AC and MC	Need to respond to rivals' price cuts to cushion fall in profits.
May not	R&D is uncertain and costly.	Price war is costly as it leads to short-run
increase		losses
profits		
because		

For the purpose of this question, students are only required to explain how both modes of competitions are used to increase profits based on the marks allocated. Reasons as to why either mode is not preferred can be saved to make the final judgement.

Good sample script:

Non-price competition may be the main mode of competition among private hospitals in Singapore. As seen in the extract, private hospitals "differentiate themselves through niche services", for example Gleneagles caters especially to expatriates while Thomson Medical focuses on gynecology and fertility treatment. This product differentiation is a form of non-price competition which works to increase demand for the private hospital's services and decrease the price elasticity of its demand in the long run, as well as make it less substitutable for the services offered by other private hospitals (e.g. Mount Elizabeth).

State implication: Reduce CED → Reduce susceptibility to rivals' price cuts Reduce PED → Increase pricesetting ability

Such product differentiation would cause the private hospital's total profits to increase from P_1BCC_1 to P_2ADC_2 , ceteris paribus. (Insert firm level's AR/MR/AC/MC diagram)	
Private hospitals also "pursue cost-saving technologies, including information technology initiatives such as national electronic health record systems and telemedicine", which is an example of process innovation, which is a form of non-price competition that helps firms to reduce their total costs. Ceteris paribus, profits are likely to increase if revenue stays the same.	
However, private hospitals may also practice price competition by "pricing their services competitively since the government provides consumers with price comparison data". Hence, private hospitals must price their services competitively, as if they price above the market price, their consumers will opt for the substitutable services offered by their rivals instead and their total revenue would fall.	Need to explain why there is a need to reduce price in order to protect profits
Ultimately, non-price competition is still likely to be the main mode of competition for private hospitals as they do not gain from lowering their prices, since their rivals would follow suit due to a high degree of rival consciousness and mutual interdependence since the private hospital scene in Singapore is an oligopoly and rivals would match price cuts, causing the private hospital which initiated the price cut to be unsuccessful in increasing its market share and causing its total revenue to fall. Instead, private hospitals would prefer to engage in non-price competition through product and process innovation which would increase total revenue and decrease total costs in the long run, increasing profits.	Reasoned judgment that refers to market structure of private hospitals
Ng Ziqin 20S03H	

(d) *"Trade-offs are unavoidable in social policy."*

On a production possibility curve (PPC) depicting healthcare and education services, explain the concepts of scarcity, choice and opportunity cost.

[4]

• Explanation of scarcity with reference to the PPC

- Scarcity refers to limited factors of production but unlimited wants \rightarrow points on or inside the PPC are attainable but points outside the PPC (e.g. point X) are unattainable.
- Explanation of choice with reference to the PPC
 - Assuming full utilisation of these factors of production and fixed technology, the government has to choose between increasing production of healthcare services or education services
 → which point on the PPC should the government produce to maximise society's welfare (e.g. point A vs B).
- Explanation of opportunity cost with reference to the PPC
 - Opportunity costs is defined as forgoing the benefits from the next best alternative. Given scarcity of resources and assuming full utilisation of these factors or production, in order to increase production of healthcare services by 10 units from 50 units to 60 units, the government has to give up production of some units of education services by 20 units from 60 units to 80 units.



Suggested mark scheme:

•	PPC diagram only without any explanation	0
•	No PPC diagram or PPC diagram with incorrect labelling (not contextualized) or not referred to in the text to clarify what is scarcity or choice or opp cost, max 3m	Max 3m
•	 Definition of PPC only and nothing else Maximum combination of 2 goods (healthcare and education) that can be produced with a given amount and quality of factors of production, given a fixed technology level 	Max 1m
•	Listing throughout or glaring conceptual errors throughout or lacking in application to context	Max 2m
•	To secure max 4 marks, all 3 concepts (scarcity, choice and opportunity cost must be defined and explained with reference to the PPC)	Max 4m

Examiner's comments:

- Factors of production refer to physical resources such as land, labour, physical capital and entrepreneurship, and not financial resources (such as government budget, funds, etc.), but financial resources are used to buy these physical resources
- Students who did not do as well in this question drew the PPC wrongly (shape, axes) or did not relate it to the given goods (healthcare and education) or failed to discuss choice, opportunity cost and scarcity. Reading the question is important.
- Some students erroneously stated that consumers/firms were choosing to consume/produce healthcare – PPC is a society concept. The PPC model shows various combinations of physical quantities of two goods on the two axis. The goods are NOT expressed in monetary units.
- Some students erroneously stated that the concave shape of the PPC illustrates opportunity cost concave shape illustrates INCREASING opportunity cost. Opportunity cost is only related to the downward sloping nature of PPC.
- Many students explained "choice" as society having the freedom to choose any points on/within PPC, but the correct understanding should be society <u>has to</u> make a choice between the two services and <u>only one point</u> on or within the PPC can be chosen.

- Some students mistakenly labelled the axes as "resources allocated to healthcare" and "resources allocated to education", which indicated quantity of FOPs used in the 2 sectors, but the correct labelling should be the quantity of <u>final</u> goods / services produced in the society, not FOPs
- In explaining the concept of opportunity cost, some students argued that "opportunity cost means when more resources are allocated to the production of healthcare, less resources will be available for education". This argument is incomplete because it only shows opp. cost is present, not what it means. More elaboration for opp. cost as the forgone units of education that could have been produced is needed.

(e) Discuss the appropriateness of policies implemented by the Singapore government to deal with the problems of asymmetric information and excessive income inequality in the consumption of healthcare.

[10]

Explain asymmetric information (supplier-induced demand):

 Supplier-induced demand is an example of the principal-agent problem where the doctor is an agent who acts on behalf of the patient. A doctor may know more about the health of a patient - but this information asymmetry by itself is not an issue since it is precisely this informational advantage that the patient sees the doctor for.



However, the doctor may use his superior knowledge to influence demand in his self-interest – also known as supplier-induced demand. The doctor may prescribe unnecessary tests or recommend more expensive treatments to increase his earnings. By raising the perceived benefits of certain treatment and drugs from DD₀ to DD₁, doctors may cause an over-consumption of healthcare of Q_sQ_e and raise healthcare expenditure for the whole society, creating a welfare loss of area ABC. As stated in extract 3, "hospitals and doctors pressur[ed] patients to opt for unnecessary medical care for certain diseases".

Explain why healthcare is a merit good (excessive income inequality):

- In a free market economy, an individual's ability to consume goods and services and the allocation
 of resources depends on dollar votes, which is dependent on the individual's income or other
 resources such as savings. An excessively unequal distribution of income and wealth may result in
 a misallocation of resources as the free market will not always respond to the needs and wants of
 people with insufficient dollar votes. What matters in a market-based system is effective demand
 (willingness AND ability to pay) for goods and services.
- The problem is especially acute in healthcare as the more severe the problem, the more an individual will perceive healthcare as a necessity. However, the treatment also becomes more

costly, and many households will not be able to afford such healthcare if financed purely from their own income or wealth. It is seen to be unacceptable for any person to be denied healthcare access because it is viewed as a basic right regardless of income.

Price/benefits/costs



From the figure above, the free market will allocate resources based on dollar votes, where DD₀ = SS and produce at OQ₀ units of output. However, society's welfare will improve if income is less unequal, as that will cause the effective demand to increase from DD₀ to DD₁, where output is at Q₁.

Policies to target underconsumption due to excessive income inequality:

Subsidies

Direct subsidies

- For the lower to middle-income groups, the government provides significant subsidies to keep
 premiums for health insurance (Medishield Life) affordable'. Also, there are many other schemes
 like the Community Health Assistant Scheme (CHAS) that offer additional grants to low-income
 households for routine treatments'. These directed subsidies to the lower-income group help to
 reduce the underconsumption of healthcare as a result of excessive income inequality by increasing
 the ability of the low-income to afford healthcare.
- Direct subsidies shift the demand curve from DD₀ to DD₁, hence quantity traded increases from Q₀ to Q₁, eliminating underconsumption and achieving allocative efficiency. Although the market price will increase to P₂ given the increase in demand from DD₀ to DD₁, those who receive the direct subsidy pay less out of their pocket (P₁ instead of P₀).



- From extract 2, 'the Singapore government heavily subsidises basic medical services for citizens at public hospitals and polyclinics.'
- From the diagram, an indirect subsidy to producers such as polyclinics will lower the unit cost of production. This is reflected by a downward shift of the supply curve by the amount of the subsidy per unit. By the market adjustment process, it will result in consumption of healthcare reaching the socially optimal level at Q₁ where the welfare loss of ABC from excessive income inequality has been eliminated.

Benefits and disadvantages:

- © Since patients are still required to pay part of the cost of medical services which they use in the form of co-payments, the incentive to economise on healthcare use is preserved, thus avoiding moral hazard which is another market failure associated with healthcare consumption.
- Subsidies incur high opportunity costs and cause a strain on the government's budget.
- © However, since subsidies are restricted to effective treatments and basic wards, while also being targeted at low income groups, it makes prudent use of government resources. Direct subsidies targeted at the low income are thus preferred to indirect subsidies which are available to all.
- ③ Government has imperfect information about the extent to which lower income groups are not able to afford basic healthcare. It may thus over-subsidise healthcare, resulting in a movement from one inefficient allocation of resources to another without necessarily improving overall welfare.

• Rules and regulation (Compulsory financing schemes)

- Financing schemes such as Medisave help households to finance their consumption of healthcare. From extract 2, Medisave is a compulsory individual savings scheme for the financing of non-primary healthcare.
- This prevents individuals from under-saving for healthcare and lowers the likelihood of them not being able to afford healthcare when needed. Thus, effective demand for healthcare is raised with financing schemes in a similar way to direct subsidies to consumers.

Benefits and disadvantages:

- © Payment for healthcare comes from own personal savings so incentive to economise on healthcare is preserved, thus reducing moral hazard.

Policy to target overconsumption due to supplier-induced demand:

- Rules and regulation (Mandatory disclosure of information)
- Extract 3 states that 'since 2003, public hospitals have been required to publish their average bill sizes and clinical outcomes for different common conditions and procedures.'
- Consumers are better able to make informed choices on the particular hospital and ward class when they seek treatment, based on their knowledge of average costs and clinical outcomes. This decreases the asymmetric information between doctors and patients, thus reducing the divergence between perceived and actual benefits when the doctor prescribes treatments.

Benefits and disadvantages:

- ③ Regulators have to be wary of the unintended consequence of price competition from the mandatory disclosure of information. Price competition may come at the expense of cutting corners, leading to a deterioration of quality in healthcare.

Policy to target both sources of market failure:

Government provision

- Government intervenes by direct provision of a merit good when it supplements what is being
 provided by the private sector. From extract 3, 'the government owns the vast majority of hospitals
 in the country'. When the government supplements what is provided by the private sector, the market
 supply of healthcare increases from SS₀ to SS₁, which in turn leads to an increase in market output
 towards the socially desired output level from Q_e to Q_s via the price adjustment process.
- Under government provision with an absence of profit-motive, supplier-induced demand is also reduced as doctors have less incentive to overprescribe expensive treatments and medicine to increase their income.

Benefits and disadvantages:

- © The absence of profit-motive may lead to dynamic inefficiency, with producers being unresponsive to consumer preferences, leading to poor service standards and long waiting lists.
- © However, this problem is minimised in Singapore due to the presence of private hospitals providing competition to public hospitals (extract 3) to ensure public hospitals are able to compete on both price and quality.
- 🙁 Incurs high opportunity cost for the government.

Synthesis:

- Overall, policy tools are appropriate even though they have limitations because they are used simultaneously and in concert. Policies that influence demand and supply of healthcare help the government to correct the various market failures present in the consumption of healthcare.
- Evidence shows that Singapore government's policies are appropriate: Research shows that Singapore's health outcomes are better than many other DCs and Singapore spends less as a proportion of its GDP than these countries, hence the policies implemented by the Singapore government are appropriate.
- Predictions about the future of healthcare in Singapore and policy recommendation: Pressure to spend more on healthcare will rise with Singapore's ageing population, increasingly affluent lifestyles and advancements in medical technology. Therefore, the government may need more upstream measures such as disease prevention, healthy lifestyle promotion since prevention is cheaper than cure.

Suggested mark scheme:

L1	 Listing throughout or glaring conceptual errors throughout or lacking contextual application, max 2 If 2 sources and 1 policy for each source but journalistic with no theoretical framework throughout, max 4 If only 2 sources of market failure with no policies for both, max L1=4 If only 2 or more policies with pros and cons but no hint of sources of market failure and policies not tied to diagrams reflecting the sources, max L1=4 If only 1 source of market failure with 1 or more policy with pros and cons, max 4 marks 	1-4m
L2	 Rigour in economic analysis with contextual application 2 sources and 1 policy for each source but no limitations, max 5 If 2 sources and 1 policy with limitations addressing both sources, max 6 To secure max L2=7, addresses requirements of the question within context of the question – 2 sources of MF and pros and cons for both policies AND using theoretical framework AND examples specific to case material 	5-7m
E2	 Script provides a judgement that is well explained and well considered given the issues and context of Singapore No conclusion on if policies are appropriate, max 2 	2-3m
E1	Judgement with limited explanation	1m

Examiner's comments:

- Please PARAGRAPH each point.
- Take note of mark allocation and plan time accordingly 2m answer should not be longer than 6m which should not be longer than 8/10m.
- Some students blindly regurgitated lecture notes to erroneously state that since price-comparison data is a form of education policy to cure supplier-induced demand, it will take a long time to change consumers' mindsets.
- Similarly, many students argue that direct subsidies are very expensive for the government and hence cannot be sustained in the long run. Direct subsidies are however targeting those with low incomes, thus the strain on government budget is already minimised, as compared to indirect subsidies
- A similar problem occurred where some students decided to suggest campaigns to reduce asymmetric information and hence mitigate supplier-induced demand. The main problem with supplier-induced demand is not asymmetric information by itself as that is exactly what we go to the doctor for (unless you expect everyone to be a doctor) but of abusing the information asymmetry to seek higher profits that results in the over-prescription of expensive treatment. Some students even mentioned that patients should be educated to not trust the doctors!
- Time management seems to be the cause of many students not explaining why asymmetric information and excessive income inequality will lead to market failure well. A cursory mention that the market fails when these two sources are present is not enough.
- Some students directly delved into explaining policies to address asymmetric information without explaining what the problems caused by asymmetric information are. This lack of explanation could cause lots of confusion as to whether the policies are used to solve under/over consumption, adverse selection / moral hazard / supplier-induced demand, etc.
- Some students explained in both diagram and words the reasons why asymmetric information leads to market failure is due to MSB < MPB. This means the good is a good with negative externalities in

consumption, not at all relevant to the case given. Students are to use the appropriate framework for the different sources of market failure: do NOT mix the DD/SS framework and the MSB/MSC framework.

- A handful of students also misidentified DWL. Students are encouraged to revise how to identify DWL.
- Criticism of the policies are often done in a cursory manner. Do spend more time elaborating ideas instead of making assertions like limitation of subsidies is opportunity cost.
- Many students argued "direct subsidy is not very effective because it does not address the root cause of market failure, which is excessive income inequality". However, students will need to realize that direct subsidy, a form of income redistribution, is one of the most commonly used policy measures to address excessive income inequality because it directly increases the disposable income of subsidized consumers, and hence reducing income gap.
- Some students brought copayment into subsidy arguments to say that subsidy covers only parts of the medical fees while consumers still need to shoulder the other part. Although the argument is logically sound, yet copayment is more often used in insurance context, not subsidy.
- Many students argued "restricting subsidies to essential and cost-effective medical treatment of proven value" as a possible measure to address overconsumption due to supplier-induced demand, but most fell short of using economics analysis to explain why this measure could work.

Good sample script:

Asymmetric information arises as one party involved in a transaction has more information than the other party. Together with excessive income inequality, they may lead to a misallocation of resources and thus market failure in the healthcare industry, which leads to the need for government intervention, such as rules and regulations and direct subsidies.	
Legislation and regulation are effective in dealing with asymmetric information. As seen in Extract 1, 'doctors pressurising patients to opt for unnecessary care for certain diseases – a phenomenon known as "supplier-induced demand". As doctors have more information than patients, they may use this to their advantage by encouraging patients to opt for more drugs or services than necessary in order to increase revenue and profits. This leads to the overconsumption of medical services where quantity consumed is more than the socially optimal level.	
The government intervenes by laws, such as having 'the audit of an effective watchdog body on a system of checks and balances.' This requires doctors and hospitals to provide full information on the services to consumers, so that consumers will have more perfect information, decreasing the asymmetry in information between patients and doctors. The patients can then make more informed choices on the services, and decrease the quantity consumed to the socially optimal, eliminating the overconsumption and thus market failure. This measure is effective as it targets the root cause of the problem, which is asymmetric information, and thus is more likely to permanently affect the consumption of the patients. As such, legislation is appropriate in dealing with asymmetric information.	Root cause is pursuit of profits, not asymmetric information - Information asymmetry is not a problem by itself
However, the laws have limitations. This is because it depends on the harshness and strictness of the law. If it is not harsh enough, doctors may not be incentivised to provide information, and continue to encourage over-consumption since the risk is not high enough. If the rules are not properly enforced and the doctors are not closely monitored, the doctors may still try to cheat and can get away with promoting false advice, making the policy ineffective. They may try to translate into high costs	Good elaboration of limitation rather than just a superficial treatment

of monitoring as manpower is needed to regulate the hospitals, which may lead to high government expenditure and increased burden of taxpayers, so the policy may not be appropriate.	
To solve the problem of excessive income inequality, the government may choose to implement direct subsidies to consumers. As the free market allocates resources based on the willingness and ability of consumers to purchase goods and services on dollar votes, it may lead to the misallocation of resources to consumers with insufficient dollar votes. Effective demand is the willingness and ability to pay. Thus, consumers who have the inability to afford healthcare may not have sufficiently high effective demand, and consume at $Q_{\rm e}$, which is below the socially optimal output level $Q_{\rm s}$, resulting in a deadweight loss of abc due to the underconsumption of $Q_{\rm e}Q_{\rm s}$, and thus market failure. (Insert diagram)	
They government may implement direct subsidies, such as Community Health Assistance Scheme (CHAS) as mentioned in extract 2 for low-income households. With the subsidies, the purchasing power of low-income groups increases and affordability increases, and thus they are able to increase their demand from DD ₀ to DD ₁ , eliminating the underconsumption. This is also effective as subsidies are popular and well-received by citizens, and thus it is easy for the government to implement this policy, making subsidies and appropriate measure.	Use of economic framework to provide rigour in explanation of policy
However, subsidies have their limitations. This is because it is difficult to quantify the underconsumption due to excessive income inequality, and it depends on the level of information the government has. The government has to set subsidy such that it increases the quantity demanded to the socially optimal, or it may lead to another deadweight loss. For example, if it provides too much subsidy, it may result in overconsumption and market failure. Thus deciding on the optimal amount of subsidy is difficult.	Good elaboration but require more than one evaluation of policy for scope
In conclusion, both the policies are appropriate in dealing with the problems and both are necessary. However, subsidies may be more effective in the short run, and laws in the long run as it takes time for consumers to adjust their consumption pattern.	Need to explain, not just state. Judgment is not wholly convincing.
Fanny Jian 20S06O	

Question 1 Essay

China's love for durian has skyrocketed in recent years with growing affluence, and the "king of fruit" is now used to produce novelty items like roasted durian and durian cheesecake. In comparison, traditional snacks have taken a hit.

Discuss how the market for durians and its related markets might be affected by these developments. [25]

Suggested answer

- 3 related markets: Durian market in China, novelty food items that use durian in their production, traditional snacks in China

Introduction

- Growing affluence in China and the changes in taste and preferences have affected the demand for and supply of durians in China, and its related markets such as novelty food items that use durian in their production, and traditional snacks in China.
- Define demand and supply
- The impact on each of these markets depends on the extent of the shifts in demand and supply, and its respective elasticities of demand and supply.

Body:

Effect on the Market for Durian in China

- As seen from the preamble, increasing affluence, likely due to economic growth in China over the recent years → higher disposable income → higher purchasing power → greater ability amongst the population to consume goods and services → increase demand for all normal goods.
- Durian is likely to be a luxury fruit in China as it is generally more expensive than fruits such as apples and is usually consumed at higher levels of incomes. Hence, demand for durians tends to be income elastic with YED > 1.
- Define YED. A rise in incomes in China will therefore result in a more than proportionate increase in demand for durian. This is seen diagrammatically as a large rightward shift of the demand curve for durian.
- This rise in demand for durian is compounded by the "sky-rocketing love" for durian, which led to a change in taste and preference towards durian → rise in demand for durian.
- Together, both the growing affluence and the change in taste and preferences have resulted in a significant rightward shift of the demand curve from D1 to D2 in Figure 1 below.
- With reference to Figure 1, at the prevailing price level, P1, there exists a shortage since qty dd > qty ss. The shortage creates an upward pressure on price of durian as consumers try to outbid one another for the limited quantity of durians. As the price rises, it becomes more profitable for durian producers to increase the amount of durians supplied. On the other hand, quantity demanded of durians fall due to the substitution and income effects of an increase in the price of durians. Alternative fruits are now relatively cheaper causing consumers to substitute durians with these alternatives. Consumers' ability to purchase durians also fall due to a fall in purchasing power caused by the increase in the price of durians. Quantity supplied will increase while quantity demanded will fall until the shortage is eliminated. A higher new equilibrium price is reached at 0P2 and the equilibrium quantity at 0Q2.
- The extent of the rise in equilibrium price and quantity depends on the PES of durians.

- Define PES. Supply of durians is likely to be price inelastic due to the long gestation period of durians ie. since it takes a minimum of 7 years before durians can be harvested, durian producers find it difficult to raise qty supplied even if price of durians were to rise. Diagrammatically, this translates into a steep supply curve, S, in Figure 1.
- With reference to Figure 1, the rise in demand coupled with a price inelastic supply result in a more than proportionate increase in price than the rise in equilibrium quantity → TR increases from 0P1E1Q1 to 0P2E2Q2, ceteris paribus, raising profits of durian producers.
- Note that it is possible to justify that PES > 1 as well, especially if candidates consider the
 fact that there is inventory of frozen durians readily available to meet the rise in demand,
 or that China is able to import fresh durians from other countries to supplement the current
 supply. In this case, the rise in equilibrium price will be less than proportionate to the rise
 in equilibrium quantity, but TR and profits still rises.



Effect on the Market for Novelty Food Items that use Durian in production

- Similar to the rise in demand for durian experienced in the market for durian, there is an increase in demand for novelty food items that use durian in their production due to a change in tastes and preferences towards durian and its related goods.
- As explained previously, a rise in demand, holding supply constant, will lead to an overall rise in equilibrium price and quantity traded for novelty food items. The extent of the rise in price and output depends on PES.
- For novelty food items, the supply tends to be relatively price elastic, since it is a
 manufactured good produced in factories and production can be fairly easy to vary as most
 ingredients are easily available and production period tends to be shorter. This means that
 the increase in demand will result in a less than proportionate increase in equilibrium price
 from P₁ to P' as compared to the rise in equilibrium quantity from Q₁ to Q'.
- It is important to note that supply of novelty food items is likely to fall since the increase in the price of durian, being a **factor of production** for novelty snacks, also affects the cost

of production for such snacks. As such, a rise in the price of durians \rightarrow a rise in COP for novelty food items \rightarrow ceteris paribus, profitability falls \rightarrow less willingness and ability by producers to produce novelty food items \rightarrow fall in SS of novelty food items, diagrammatically seen as a leftward shift of the supply curve from S1 to S2 in Figure 2.

- Given that demand for novelty food items is relatively price elastic (since there are many other substitutes in terms of snacks and food items such as waffles etc.), the fall in supply will result in a less than proportionate increase in price from P' to P₂ as compared to the fall in equilibrium quantity from Q' to Q₂.
- With both the rise in demand and the fall in supply in place, the overall effect on the equilibrium price and quantity depends on the <u>relative magnitudes of the shifts</u> in demand for and supply of novelty food items.
- It is likely that the rightward shift of the DD curve exceeds the leftward shift of the SS curve, as durian is only one single ingredient in the production of novelty food items, making it a small component in the total COP for novelty food items as compared to other relevant cost of factor inputs such as labour costs. Hence, there is likely an overall increase in equilibrium price and equilibrium quantity as shown in Figure 2, leading to an increase in TR for producers of novelty food items.
- Note that candidates can also analyse that SS shifts more than DD, if they were to justify that durian is an important factor input that makes the novelty food item special (e.g. roasted durians).

Price of novelty food items in China





Intermediate evaluation: The extent of shift in DD and SS varies according to the type and nature of the novelty food item. In sub-markets such as roasted durian, the proportion of durian used as a raw material is much higher than for other pastries such as durian cheesecake, hence the fall in SS of roasted durian would be much larger → the increase in price of roasted durian novelty snack would also be higher. Furthermore, roasted durian cannot be replaced with other ingredients such as artificial flavouring, hence the PES for roasted durians would likely be lower than for durian cheesecake and durian tarts, once again resulting in a larger increase in price and a corresponding rise in TR.

Effect on the Market for Traditional Snacks in China

- The effect of the events mentioned in the preamble on the market for traditional snacks tends to be negative and this is because traditional snacks are seen as substitutes in consumption with novelty food items that use durian, since they fulfil the same purpose as snacks. This means that the CED is positive between the 2 goods. Define CED.
- Given the increase in the price of novelty food items, consumers tend to switch away from novelty food items to the relatively cheaper traditional snacks since they are goods in **competitive demand**. This leads to a rise in demand for traditional snacks and the extent of the rise in demand depends on the CED value between the 2 snacks. Assuming that they are close substitutes, the CED value would be positive and large and this means that the rise in demand for traditional snacks will be significant.
- However, candidates might also note that the growing trends in China suggests that there may be a change in taste and preferences away from consuming traditional snacks, leading to a fall in demand for such items.
- The rising affluence seen in the preamble can also create an impact on demand for traditional snacks. As seen previously, a rise in incomes can lead to a rise in demand for such traditional snacks assuming that they are normal goods. However, if candidates were to analyse traditional snacks as inferior goods in comparison to novelty food items, then it is likely that demand falls with rising incomes.
- On the whole, it is more likely for the demand for traditional snacks to fall given the current consumption trends seen in the preamble → DD falls and DD curve shifts left from D1 to D2 in Figure 3, resulting in a surplus at the prevailing market price, P1 → downward pressure on price is exerted → equilibrium price falls and equilibrium qty falls. The extent of the fall in price and qty depends on PES.
- Given that it is a manufactured good, it is likely that supply is price elastic due to the ease of storage as well as the fact that it is less perishable than fresh durian fruits.



With reference to Figure 3, the decrease in DD coupled with a price elastic supply will result in an overall decrease in equilibrium price from P₁ to P₂ and a more than proportionate decrease in quantity Q₁ to Q₂ → hence decrease in TR (P₁Q₁ to P₂Q₂) for traditional snack producers.

- <u>Intermediate evaluation</u>: However, if a large proportion of consumers in China are die-hard fans of traditional snacks, then demand for traditional snacks may not fall. Also, with the growing influence of China in international trade, it is likely that there is a growing export market for its traditional snacks. This also ensures that the demand for traditional snacks will not fall but may instead increase.

Synthesis/Evaluation/Conclusion:

- On the whole, the events mentioned in the preamble seemed to create a positive impact on the markets for durian as well as novelty snacks, while creating a negative impact on the market for traditional snacks. The durian market is likely to experience the largest increase in TR in the short run, followed by the novelty food items market. In comparison market for traditional snacks is likely to see fall in TR in short run.
- It is however important that candidates critically evaluate their analysis based on the assumption of ceteris paribus, that may not necessarily hold. For example,
 - In the case of the market for durian supply tends to rise significantly during the harvest seasons such that the SS increases to a larger extent, causing prices to fall, while during the rest of the year, prices are likely to be much higher as SS falls.
 - In the long run, due to the profitability of growing durians, there may be more farmers shifting to durian planting as they may expect profits to be higher in this crop → raising SS for durians in the market, hence reducing the impact on rising prices arising from increase in DD.
 - For the novelty food items market, the increase in DD may only be in the short run as the interest and novelty effect may wear off, hence in the LR, demand may then fall → lowering the prices and qty in the market.
 - For the market for traditional snacks, in the long run, it likely that SS increase as more technology is adopted in the production processes, together with increase in DD due to growing interest (tourism and export of culture) in China → effect on equilibrium price and qty.
 - Varying degrees of PES, YED and CED for different consumer groups or sub-markets give example and explain hence different outcomes in the market.
 - Candidates may also consider of the relevant market structure, and question the assumption of PC market in their analysis.

Mark scheme

	Knowledge, Application, Understanding, Analysis	
L1	 An answer with few valid points and / or many conceptual errors Journalistic answer with little application of economic concepts Does not address the question 	1 – 8
L2	 Some explanation of the relevant demand, supply and elasticity concepts Some application of relevant demand, supply and elasticity concepts in the explanation of the impacts on the market Some explanation of the mechanisms involved that result in the market outcomes Some ability to use diagrams to analyse the markets indicated in the question 	9 – 14
L3	 Clear analysis of the impacts in 3 markets stated in the question Clear explanation of relevant concepts such as demand, supply and elasticities, and their determinants Detailed, coherent explanation of the mechanisms involved that result in the market outcomes Clear diagrams that are well-utilized to address question 	15 - 20
	Evaluation	
E1	Unsupported evaluative statement(s) or judgement(s)	1
E2	 Some attempt at evaluation or a summative conclusion Relevant to the question but does not explain the judgement or base it on relevant analysis 	2 - 3
E3	 Critically evaluates alternative theories, contemporary issues, perspectives and policy choices Evaluates relevance of unstated assumptions such as ceteris paribus, how the markets may evolve in the long run Synthesizes economic judgements to arrive at well-reasoned judgement and decisions 	4 - 5

Markers' comments

This was a relatively straightforward question that was aimed at testing candidate's understanding of demand, supply and elasticity concepts, and the ability to identify relevant economic relationships between markets.

This question was not very well done, with only a small number of strong responses. While most responses showed a basic understanding of demand, supply and elasticity concepts, majority either had misconceptions, or had limited application of the concepts to the context. Most had very messy, incoherent structures, weak introductory paragraphs, and incorrect cause-effect relations identified, which pointed to a lack of essay planning.

Many weaker responses merely identified single shifts in each markets, mostly based on a shift in taste and preferences. These responses hence were highly repetitive and limited in scope.

Some weaker responses chose to do so in other markets that were not indicated in the preamble, rather than analysing the mentioned markets in detail. Some weak responses made

no reference to the relevant demand and supply determinants in each market, while other weaker responses made up their own determinants which were not mentioned in the question.

Weaker responses not only showed confusion between the different elasticity concepts, but also showed logical lapses, and / or contradictory analysis.

In contrast, the evaluation for this question was relatively stronger, with most candidates being able to minimally identify that the analysis may not hold especially in the long run when the ceteris paribus assumption does not hold. Stronger evaluative responses were able to explain the likely changes to demand, supply and elasticities, and their impact on market outcomes.

Common errors included:

- Inaccurate definitions e.g. "willingness and ability to pay", "responsiveness of change of consumers to a change in price" etc.
- Definitions that left out the assumption of "ceteris paribus".
- Using unaccepted short forms.
- Not labelling diagrams properly, especially given that there are multiple markets that required multiple diagrams in the answer. Hence it was unclear which diagram each part of the analysis was referring to.
- Messy diagrams that were not labelled properly, not drawn using a ruler.
- Unable to distinguish between the concepts of "demand and quantity demanded", "supply and quantity supplied", affecting the explanation of the price adjustment process and impacts on the market.
- Applying PED instead of PES when there are shifts in DD, and applying PES instead of PED when there are shifts in SS.
- Not using PED and PES to explain the extent of change in P and Q.
- Confusing PED and PES with the extent of shift of the DD and SS curves.
- Confusing PED determinants with YED determinants, explaining that since incomes increase, consumers spend a lower proportion of income, hence YED falls, yet is still a luxury good. This is incorrect.
- Logical lapses e.g. conflating "low" with "lower" this is incorrect.
- Confusing PED with DD, explaining that since incomes increase, consumers spend a lower proportion of income, hence DD increases. This is incorrect.
- Not indicating specifically that durians and durian novelty food items were luxury goods with YED > 1, and linking it to a significant increase in DD in these 2 markets; Traditional snacks likely to have YED < 0, hence a fall in DD.
- Not explaining the price adjustment process in detail, with reference to the diagram.
- Confusing the price adjustment process with an increase in the number of firms in the long run (hence explaining that supply increases because demand increases)
- Incorrectly identifying the relationship between the durian market and the durian novelty food item market. Durians are an ingredient for the latter market, hence affects the COP depending on the price in the former market. They are **not complements, neither are they in joint supply**.
- Incorrect application of CED most saw the trigger as a change in taste and preference rather than a change in the price of another good (durians or durian novelty items)
- Confusion between the sign for CED of substitutes and complements.
- Not explaining market outcomes (P, Q, TR) with reference to diagram.
- Use of firm analysis ie. MR vs MC, shifting of AR and MR curves and changes in MC/AC in explaining LR effects of the events stated in preamble on durian producers/novelty snack producers or even traditional snack producers. Candidates then went on to expound on the effects on profitability of these producers and shut-down conditions etc, failing to realise that the question focuses on effects on the entire market rather than individual firms, hence making the firm analysis irrelevant in this question.

Question 2

Within the beverage market, competition amongst numerous bubble tea shops is high. However, in the telecommunications market, only a few firms dominate the market. Firms in these markets often engage in non-price strategies such as advertising.

- a) Explain the factors that affect the size of firms. [10]
- b) Discuss whether advertising is ever beneficial to firms and society. [15]

Part (a)

Introduction

There are 3 main reasons that determine the size of firms– the nature of the industry (revenue and cost factors), government regulation and the firms' objectives.

<u>Body</u>

1. Nature of industry

- a. Cost factors
 - i. Level of output attained at the firms' minimum efficient scale (MES) of production.
 - Firms tend to be small if diseconomies occur at low levels of output. Such industries usually provide services that require personal attention e.g. beverage personalization (toppings, less/more sugar). If such specific detail has to be mass produced, any cost advantages to large-scale production are more than offset by the difficulties in monitoring large scale quality checks of such customized products. Average cost rises sharply as output increases. The optimum size of firms in such industries tends to be small.
 - 2. On the other hand, firms that reach MES at very high levels of output tend to be large. In industries such as the rail industry and the petrochemical industry, there are significantly high startup costs in the form of rail infrastructure and chemical plants respectively. Substantial internal economies of scale can arise. This causes the long run average cost of production (LRAC) to fall continuously over a very large output level resulting in a very large minimum efficient scale (MES) relative to market demand. Firms are likely to choose to increase the scale of production in order to lower the long-run average cost which will be reflected by a movement along the downward sloping portion of the LRAC curve. Such markets can only accommodate a small / limited number of firms and these firms' size are usually large. This is particularly so in the electricity transmission market in Singapore where the market is small while the cost savings from IEOS is large.
 - ii. Vertical disintegration
 - 1. Vertical disintegration occurs when an entire production process in a particular industry can be broken up into a series of separate processes. Diseconomies of scale quickly emerge in each of

these processes. This allows different small firms to emerge, each performing a small part of the whole task thus incurring a lower unit cost. Smaller firms can complement larger firms in the same industry when they specialize in a single process or make components for the larger organisations. For example in the movie making industry, various small independent firms specialize in different stages of production (special effects, editing, CGI editing etc) as each stage requires speicalised attention from skilled movie makers. These services cannot be mass produced to generate significant cost savings so the firms remain small.

- iii. Saucer-shaped LRAC
 - 1. Small and large firms may co-exist because of cost reasons as well. This is likely in instances where the industry has relatively low fixed costs such as the coffee retail market (lower rental costs and less complex coffee making equipment) and breweries. Technical economies of scale are quickly exhausted, followed by constant economies over a wide range of output. In this case, as seen in Figure 1 below, the LRAC curve is saucer-shaped where economies of scale are quickly exhausted and MES occurs at a low output level Q₀ followed by constant average costs over a wide range of output. Firms choosing to produce a low level of output at Q₀ or a high level of output at Q₁ will be equally cost efficient as they face the same unit cost of production. This accounts for small and large firms to coexist in the same industry.



- iv. Banding and Joint Ventures
 - 1. Firms may choose to be small to remain independent because they can potentially enjoy the same cost savings as large firms with IEOS, even if they are small.
 - 2. Large businesses / retail chains are able to reap internal EOS such as marketing EOS by purchasing raw materials in bulk thus lowering their average cost. Smaller businesses, on the other hand, have the ability to band together to gain the similar cost advantages of bulk buying, advertising and promotion. They can also set up jointly owned enterprises to source for raw materials, allowing them to obtain many of the economies of scale enjoyed by the larger firms. Thus explaining the co-existence of both types of firms in the market. Note: This is not the same as mergers, as the respective owners retain ownership of their

businesses. This strategy involves cooperation among smaller firms to protect their interests.

- b. Revenue factors
 - i. Market segmentation
 - Market segmentation splits up a market into different types (segments) to enable a business to better target its products to the relevant customers. This allows some firms to concentrate on customized items which the masses may not demand while other firms can focus on general mass produced items.
 - 2. Products that are personalized or customized will tend to be produced and supplied by small firms as the <u>demand for such types of products are too low</u> to support a larger firm size. For example, customized bubble tea flavours or preparation which have personalized orders and which the masses may not demand. It could also be due to the uniqueness of the product eg. organic food which only appeals to a small group of people. Niche markets such as markets for sports cars, luxury yachts and high quality jewellery often have small firms to cater to a small group of customers who aim for prestige and status.
 - 3. On the other hand, firms that cater to consumers whose needs are more general and less specific in nature will focus on standardized or mass produced items for the <u>mass market</u>. The <u>large demand (and hence large market size) supports</u> the high output production and capacity of <u>large firms</u>. For eg car manufacturers such as Honda and Toyota producing cars for the mass market while IKEA is a large manufacturer and retailer in the furniture market.
 - 4. Even though small firms producing goods for niche markets may not be able to exploit fully available internal economies of scale, the demand for their goods tend to be relatively more price inelastic than in mass markets. They can therefore set a relatively higher price to cover their higher unit costs of production so as to remain small but profitable.
 - ii. Geographical factors
 - 1. If the product has great bulk in relation to value, transport costs will be high relative to total production costs. In such cases, the market for the good is likely to be small and local rather than large and national.
 - 2. Fresh produce such as fish and vegetables also tend to have small and localised markets as they are perishable, and can only be transported over a limited geographical region. Hence the number of consumers served could be limited too.
 - **3.** Finally, small provision shops can distinguish themselves by being placed in convenient areas within an inaccessible location that contains a smaller market. Despite having higher average costs due to a smaller scale, these provision shops can compete with huge supermarket chains due to the geographical convenience they provide.
 - iii. Profit Cycles
 - 1. New products appear continually while others disappear. At the early stage of a product cycle, total demand for the product tends to be low as the consumers may not fully know about the products' presence and the benefits they offer. The firm tends

to be small as it takes time to grow their market presence, outpace rival firms, merge or force others out of business.

2. Govt. Regulation/Intervention

a. Artificial barriers to entry

Statutory barriers are entry barriers given by force of law. The incumbent firm attains legal protection in the form of exclusive rights e.g. patents, copyrights, market franchises, licenses.

Governments may only provide the license to operate power plants to one firm, thus effectively making the firm a large one as it has to provide for the entire market. Governments can create or support private monopolies through regulation of intellectual property rights. Patents and copyrights give firms who invent or create something the exclusive right to produce and sell it for a given period of time. For instance, by forbidding the use of a chemical formula by other manufacturers, patents allow pharmaceutical companies to act temporarily as monopolists in the market for a particular drug. This barrier to entry allows the companies to monopolise the market demand and grow in size as all patients in need of the drugs will need to buy from them

3. Firms' Objectives

a. Profit satisficing

Some firms remain small because the owners prefer to keep them small for reasons not related to the profit motive. The entrepreneur could be contented with a reasonable income from the domestic or localised market and is unwilling to take on increased risks, stress or perceived challenges from growth. Instead, entrepreneurs could decide to achieve a given level of profits (with a lower output) that are deemed to be acceptable even though it falls below the profit-maximising level, and enjoy other benefits such as shorter operating hours and lower levels of stress.

b. Business Risk: Unwillingness to take greater risks

Expansion and large-scale production require funds and starting a larger firm involves larger capital outlay. If firms are unable to raise the money, they will have to borrow from banks. This means the risk of investment is greater as the losses to business owners can be potentially greater if the business does not work out due to loss of collaterals and/or interest repayments. Therefore, some firms remain small because they are unwilling to bear the significant risks involved.

Firms may also fear of a future fall in the price of the final product if expansion occurs. Firms looking for larger market share could plan to intentionally expand their operations, which may lead to a huge surplus due to a large increase in market supply and subsequently a decrease in the price of the product. As the price falls, the firms could lose some profits. This generates high uncertainty and risk for expansion and could prevent the firms from expanding.

Conclusion

There are 3 main reasons that determine the size of firms.

Suggested Mark Scheme:

Knowledge, Application, Understanding, Analysis		
L1	 Lack of economic framework in explanation Irrelevancies in explanation. Substantial and glaring conceptual errors. Listing of points. Considers only <u>1 aspect/factor</u> 	1– 4
L2	 Evidence of use of economic analysis in the explanation of at least <u>2</u> <u>aspects or reasons</u> Makes some attempt to make reference to the preamble or any related industries Lapses in analysis evident. Lacks depth in analysis 	5 - 7
L3	 A well-developed answer with 3 aspects Presence of clear economic analysis (optional: with diagrams) 	8 - 10

Examiners' comments:

- Only a small handful of students defined the Long Run Average Cost (LRAC) curve and the Minimum Efficient Scale (MES). Similarly, internal economies and diseconomies of scale were rarely defined.
- A handful of students also explained that the type of industry determines the size of the firm. This is clearly insufficient for it does not address why the firm is of a certain size. For example, it is not enough to simply state that the firm is big as there are a few firms in the industry.
- A significant number of candidates explained that low barriers to entry affect the size of firms. This explanation by itself was incomplete as it did not make reference to either cost or revenue factors. Few students explained barriers to entry in relation to the high or low startup costs which affect the shape of the LRAC which in turn affects the level of output of the firm (i.e. size of the firm).
- It is important to explain MES and the LRAC with reference to <u>average/unit</u> costs. Many students simply stated that cost of production changed. Economic rigor necessitates the use of specific terms. Students who scored top marks explained the importance of MES in influencing the level of output with reference to both IEOS and IDOS.
- In explaining banding and joint ventures as a cost factor, it is important to link the factor to the size of the firm, specifically how it affects the size of the firm.
- When explaining how the type of good (personalized vs. mass produced) affects the size of the firm, a sizeable number were unable to distinguish between a revenue and cost side explanation. Both revenue and cost-side factors are acceptable but it is unwise to explain them together. Personalized services tend to have a small demand and its demand tends to be more price inelastic. This is **not** to be followed by explaining that it reaches MES at a low level of output since this is a cost-side explanation.
- The overall attempt at explaining the alternative objectives of the firms was not stellar.
- A number of students had conceptual errors such as explaining that only large firms can reap internal economies of scale. This is not entirely true as all firms can reap internal

economies of scale. What distinguishes large and small firms is the level of output which they reap IEOS. Others explained that a prerequisite for a firm to expand is supernormal profits. This is incorrect.

In order to score L3, it is necessary for the answer to contain sufficient scope. An explanation of cost factors can only count as one aspect even if the answer contains a wide range of cost factors. It is not enough to explain the different types of IEOS.

Part (b)

Introduction

- Firms engage in advertising and promotion to increase the demand for its products, and help it to increase its revenue and profits in the long run. This is because perceived differences are created through advertising.
- These differences inform, persuade and convince consumers to purchase the products.
- Advertisements may also stress the specific qualities of the firm's product over its rivals. Successful and consistent advertising might create brands that consumers aspire to own or shorten the search process for consumers looking for consistency of quality (brand loyalty).

<u>Body</u>

T1: It is desirable for firms as they will be able to earn more profits.

- In the SR, costs will increase as advertising increases the total fixed costs of the firm.
- But in the LR, demand for its product increases and becomes less price elastic as advertising influences consumers' tastes and preferences. The firm's AR and MR curves will shift out to the right to AR2 and MR2 respectively and becomes relatively less price elastic. At the profit maximizing equilibrium position where MR = MC, both the price and output increase to OP2 and OQ2 respectively.
- The firm's LR profits will increase from normal profits to SNP at P2ABC as seen in the diagram below.



• Higher BTE for existing firms

Complete (or higher) barriers to entry protect the monopoly (or market) power of the incumbent firm so that it can charge a relatively higher price above its MC as potential substitutes are fewer (PED lower). By protecting the incumbent firm from actual competition, the incumbent firm is also able to retain its supernormal profits in the long run.

As the product becomes less substitutable due to advertising, its CED also changes. This reduces the effect of its rival's pricing policies on the demand for the firm's product.

AT1: It is not desirable for society as firms may gain more market power and thus becomes more allocatively inefficient.

- The firm in imperfect competition has a downward-sloping demand curve (AR curve) as it is a price-setter. Hence its AR or price is greater than its MR as it has to lower the price of every single unit of good that was previously sold at a higher price in order to sell one additional unit.
- As such, at the profit-maximising output level where MR=MC, the price is greater than the marginal cost, thus the firm is allocatively inefficient.
- When advertising benefits the firm by increasing its AR and MR and reducing the PED of its products, the firm will now have greater price setting ability at MR₂ = MC. This increases the extent by which P is greater than MC at the profit max output (compare P₁ > MC at Q₁ and P₂ > MC at Q₂). The degree of allocative inefficiency increases, signalling greater welfare loss for society.

T2: It is desirable for society if firms advertise as it reduces the information gap between buyers and sellers and reduces the degree of imperfect information.

• Assumption: information provided is factually accurate and not misleading and consumers may not have full information about the benefits different products may offer.

- Example: Products that are more complex in nature such as pharmaceutical drugs like EpiPen or antibiotics
- If advertising provides better consumer information which helps them to have more perfect information, for eg about the most effective medicines to treat their illness, then such advertising may not represent wasteful use of resources. This reduces search costs for consumers.
- In addition, if products have undergone product innovation and there are real differences present, then advertising regarding these improved products complements the real differences that have taken place and make the consumers more fully aware of the new benefits offered by the products and thus adjust their consumption behaviour.

AT2: It is not desirable for society if firms advertise as it may increase the extent of information failure if it is misleading.

- Persuasive advertising may contribute to people's ignorance by giving misleading information about the benefits of a product, causing consumers to overestimate the private benefits of the good. Hence, advertising may tend to 'oversell' the benefits of a product and leads to a higher demand for the product aggravating the problem of imperfect information. This leads to a higher than socially optimal level of consumption which affects allocative efficiency and hence bringing about a deadweight loss to society.
- [Graph not required but can include market-level analysis to show DD imperfect information > DD perfect information, assuming no market failure from market dominance, i.e. a perfectly competitive market]
- Can include both imperfect information and asymmetric information. Imperfect information: present inaccurate information whilst in asymmetric information, sellers/advertisers intentionally hide the full extent of information.
- <u>Evaluation</u>: with the passing of regulatory rules to weed out false advertising, misleading advertising in terms of inaccurate information is less severe nowadays. However, firms may still have an incentive to conceal some information from consumers.
- [Related point] Consumer sovereignty falls because of a <u>perceived lack of choice</u> as consumers may only know about the heavily advertised product. Advertising seeks to manipulate consumer's tastes and preferences and can distort the working of the price mechanism by diluting consumer sovereignty.

AT3: It is undesirable to society (specifically consumers) there are no significant real differences between products if it is just perceived differences.

- In an oligopoly, advertising and branding play a huge role in establishing brand loyalty as a way to compete for consumers, even if there are only insignificant differences in the products sold by different companies.
- Persuasive advertising may represent a form of economic waste, as the resources could have been put to more productive use. As wasteful advertising could increase the firm's COP, this implies that more resources than necessary were used to produce a given level of output. The firm is productively inefficient as it is probably not incurring the lowest possible unit cost for any given output level. Consumers could suffer as the increase in costs could be passed to them in the form of price increases.
- For example, a significant opportunity cost is incurred as the firm could have channelled the funds for advertising towards R&D.
- <u>Evaluation</u>: It may, however, lead to higher levels of employment in the advertising industry which could be beneficial for society.
- [Examples] Coca-Cola and Pepsi

AT5: It is undesirable to firms as SR profits may fall.

- Advertising adds to fixed cost of production and leads to an increase in the AC, thus shifting it upwards from AC₀ to AC₁.
- If the advertising is unsuccessful and fails to significantly affect DD for firm's goods and services, then the firm will earn less profits (shown by area PABC on the diagram).

Price/Revenue/Cost



Conclusion

Overall stand: Advertising is beneficial to a certain degree.

- Depends on the type of good and the level of contestability in the market
- Depends on the type and extent of advertisement (and its associated degree of success)
- Depends on the context and possible advertisement fatigue
- Depends on the extent of govt. intervention to regulate and improve imperfect information

Examples:

- Advertising can be beneficial to firms by increasing LR demand and hence LR profits for the firm, ceteris paribus. This is especially when the campaign is successful even though SR costs may increase.
- Informative advertising is generally more beneficial to society than advertising solely with the aim of competition between rival firms.
- In reality, advertising companies are also becoming more data driven to target the more relevant consumers for different products (especially digital advertising). This could potentially create a win-win situation for consumers and firms to reduce search costs and find a better match of tastes and preferences.

Suggested Mark Scheme

	Knowledge, Application, Understanding, Analysis	
L1	 Mere smattering of points without clear economic analysis. No linkages made between the advantages and disadvantages of advertising to its effects on the economy Presence of conceptual errors.	1-4

L2	 Clear linkages are made between the advantages and disadvantages of advertising to its effects on the economy Explanation of <u>either</u> information failure or performance of firms are accepted Answer may have considered both information failure and performance of firms, but lacks scope and/or depth (economic framework) 	5 - 7	
L3	 Well-balanced answer with discussion of at least 3 aspects (e.g. F+, S+ and S-): Advantages and disadvantages of advertising to both firms and society must be covered for top L3 marks 	8 - 10	
Evaluation			
	Evaluation		
E1	 Evaluation An unexplained judgement → An unexplained evaluative conclusion/comment 	1	
E1 E2	Evaluation - An unexplained judgement → An unexplained evaluative conclusion/comment - Evaluative assessment of the overall benefits of advertising supported by economic analysis but could be more insightful	1 2 - 3	

Examiner's comments:

- The performance in (b) was generally better compared to (a). However, some answers appeared to have been 'rehearsed' these responses were therefore very general and did not encompass elements from both the market structure and market failure topics. Thus, stronger responses identified and explained information failure and greater market dominance. Whilst merit and demerit goods and government campaigns were accepted as valid answers, candidates are reminded that this question is not primarily about government campaigns to increase or decrease the consumption of said goods. Some candidates failed to explain the effects of advertising in these markets and instead explain how imperfect information arose with no reference to advertising.
- The stronger answers used appropriate firm-level diagrams to link the effects of advertising to the profits of the firm. The weaker responses either described how demand will increase using market-level analysis or explained that the PED of the product will change. Neither answer is complete as advertising leads to both a shift in demand and a change in PED. Hence, it was incorrect for candidates to state that as prices increased, quantity demanded fell by more/less than proportionately. When demand increases, both price and quantity will increase regardless whether this is for market-level or firm-level analysis.
- Most were able to use an appropriate diagram to show an increase in profits for the firm. However, some scripts contained graphs that were too small. Also, candidates are reminded to use solid lines for MR and AR. Diagrammatically, MR₀ and MR₁ should not intersect. Likewise, AR₀ and AR₁ should not intersect.
- Many candidates explained that when consumers pay higher prices as a result of advertising they are worse off. Responses need to be fully elaborated to explain why

consumers are worse off. Reference to consumer welfare, consumer surplus or consumer sovereignty is needed for economic rigor.

- A significant number of responses were quite descriptive in nature and thus failed to
 present economic rigor. Even though these responses contained valid examples used
 in lecture, examples cannot replace economic analysis. For example, it is necessary
 to explain information failure (misleading advertising) with reference to imperfect
 information in order to show how it leads to over-consumption. Hence, candidates that
 provided only a description of an example about the use of misleading advertising in
 Singapore (infant milk powder and IQ) were unable to attain L3.
- Many candidates tried to incorporate dynamic efficiency into their answers and spent considerable time explaining how it improves as the firm is able to earn supernormal profits. However, the primary effects of advertising should be analyzed first – how it affects firm's profits. What the firm does with the profits, including R&D, is considered secondary.
- A significant number of candidates simply explained without any substantial economic analysis that as advertising leads to higher costs, profits for the firm fall. A complete explanation would include how advertising leads to a shift in average costs and make reference to a firm-level graph to show a fall in profits.
- The weaker responses that included allocative efficiency were unable to explain that the distance between price and marginal cost grew, thus causing allocative inefficiency to worsen. Very few scripts included the deadweight loss to illustrate allocative inefficiency worsening.
- Due to weak time management, many candidates failed to offer an evaluation aspect to their answers. A number of weaker responses tended to repeat evaluative comments made previously in the body of the text. In the evaluation component, students could include an explanation of how the degree of advertising differs in different market structures. However, only very few scripts linked it back to the positive and negative effects of advertising.

Question 3:

The UK government believes that more can be done to reduce the avoidable harms resulting from alcohol misuse, and that managing the price of alcohol is an important component of that work. Historically, taxation has been the method used in the UK to adjust the price of alcohol. Also, since May 2018, Scotland has introduced minimum pricing for alcohol.

Adapted from https://alcoholchange.org.uk

- (a) Why do governments intervene in the market for alcohol? [10]
- (b) Assess whether government intervention through managing the price of alcohol is the most desirable in the market for alcohol. [15]

Part (a)

Introduction

- Governments intervene in the market for alcohol because it is believed that overconsumption would arise resulting in allocative inefficiency in an unregulated free market. In other words, market failure occurs in the market for alcohol, a demerit good.
- Define market failure: Market failure is defined as the failure of the unregulated free market to allocate resources in an optimum and efficient manner which maximises social welfare and/or to achieve social goals like equity.
- Demerit goods refer to goods and services that the government deemed as socially undesirable, which are over-consumed when left to the price mechanism.

The government takes on a paternalistic role and perceives that consumers overconsume demerit goods primarily due to 2 reasons: **imperfect information of private costs/benefits** and **negative externalities from consumption.**

<u>Body</u>

(i) Imperfect Information Argument

The government in its paternalistic role believes that consumers overvalue the good because of imperfect information about the marginal private benefits arising from consumption of alcohol which causes the perceived MPB to be higher than the actual MPB.

To the consumers, consumption of alcohol can bring about private benefits such as widening of social circles, as they use it as a means for social networking. However, due to imperfect information of the harm to self, individuals may **overestimate** their **private benefits** from consuming alcohol. For example, individuals may not be fully aware of the long term negative effects of the consumption of alcohol. This includes ill-health effects such as damages to the liver and nerves, cancer of the mouth and throat. Other negative effects that are experienced by the individual himself can be in the form of decreased productivity at work and increased strain of family relationships. Hence, due to imperfect information, consumers might overvalue their MPB of consuming alcohol and this results in consumers' demand for alcohol (DD₁) being higher than what it would be if there is perfect information (DD₀).

Figure 1 shows the demand and supply curves of alcohol. Due to imperfect information, free market output is at OQe, where DD_1 (with imperfect info) =SS. However, with perfect information, output would be at OQs where DD_0 (with perfect info) = SS. Hence, with imperfect

information, alcohol will be over-consumed in the free market. This also implies that there is an over-allocation of resources in the market for alcohol, as depicted by the deadweight welfare loss represented by area ABC, which shows that the benefits gained from consuming QsQe units of alcohol is less than the cost of resources used in producing these units.



(ii) Negative Externalities (from consumption) Argument

Consumption of alcohol may generate negative consumption externalities. Negative externalities from consumption occur when negative effects are imposed on third parties from the consumption of alcohol by private individuals.

In pursuit of self-interest, the consumer of alcohol would only care about his own marginal private benefit. This includes the satisfaction derived from consuming additional bottle/can/unit of alcohol (e.g. the consumer feels that his stress level is reduced with the additional unit of alcohol consumed). The self-interested consumer will also not consider the external cost borne by the third parties. For instance, residents in the neighbourhood have to put up with the rowdiness brought about by the drunken persons at nights and thereafter suffer from lower productivity at work the next day. Also, fights might break out under the influence of alcohol and the consumer of alcohol might cause injury to other parties or cause damage to property belonging to others, thus resulting in these third parties incurring medical bills and repair costs respectively. Drunken persons might also exhibit violence and aggression, causing physical and emotional hurt to their family members.

In view of the negative consumption externalities, the marginal social benefit is lower than marginal private benefit, causing a divergence between MPB and MSB as shown in Figure 2. Assuming **no production externalities**, MPC=MSC.



If **left to an unregulated free market**, OQe is consumed where MPB = MPC such that selfinterested individuals maximize their private net benefit, ignoring the negative externalities. However, the **socially optimal level** is at OQs where MSB = MSC such that social welfare is maximised. Since Qe>Qs, too much alcohol is consumed and produced. Market failure arises as too many scarce resources have been allocated to production and consumption of alcohol. This is depicted by the deadweight welfare loss of area ABC, which shows the excess of social costs over benefits for the units QsQe. Hence, there is a need for the government to intervene through the adoption of policies like indirect taxes and quotas on alcohol.

Knowledge, Application, Understanding, Analysis			
L3	 Clear use of theoretical framework Good depth with clear step-by-step explanation, well supported with graphs. Good attempt to explain the 2 reasons for the market to fail Clearly described examples 	8-10	
L2	 Some lapses in analysis Lacking in depth for explanation. Lacking in scope: Only 1 source of MF is covered 	5-7	
L1	 For a smattering of points with little economic analysis Journalistic answer with lack of theoretical explanation Many glaring conceptual errors Lacking in relevance 	1-4	

Part (b)

[Requirement: You need to discuss at least <u>three</u> policies, specifically managing price via tax and/or minimum price, as well as other non-pricing measure(s), and then arrive at a judgement as to whether managing price is 'most' desirable.

In the context of this question, attempts to compare/contrast strengths and weaknesses across different policies is credited as Evaluation. An overall judgment made in the conclusion will also be credited as Evaluation.]

Introduction

Due to the market failure in the alcohol market, government intervention is called for. For instance, governments can 'manage' the price of alcohol via indirect taxation and minimum pricing policy.

<u>Body</u>

[Thesis: Government intervention through managing price of alcohol is desirable, in terms of being effective to address market failure, as well as having other strengths.]

Explain how price management policies are effective to correct the overconsumption and thus achieves socially desirable outcome (AE), as well as other strengths of these policies.

- Price Management Policy 1: Indirect taxation policy
 - o How it works
 - Indirect tax levied on sellers of alcoholic drinks → increases their COP or MPC → less profitable so firms offer fewer for sale at each price → SS falls
 → shortage created → upward pressure on price → consumers disincentivized by higher price & cut down on quantity demanded. Assuming tax = value of negative consumption externality, Qe falls to Qs → overconsumption is corrected. Allocative efficiency is attained.



- o Other strengths of indirect taxation policy
 - Taxation can help government gain revenue, which can be diverted to other purposes e.g. to fund campaigns to further discourage alcohol consumption and/or to fund expenditure on merit goods.
 - Taxation allows the free market forces of demand and supply to operate and consumers' & producers' sovereignty are retained.
 - Taxation is effective on price-sensitive drinkers such as those in the younger age group. The increase in price induce a more significant fall in Qd among this group and therefore prevents excessive consumption from young age.
- Price Management Policy 2: Minimum price policy
 - How it works
 - Minimum price is effective if it is set above market equilibrium price. Market equilibrium price Pe was deemed too low, and hence a minimum price is set such that sellers are prohibited to sell alcoholic drinks below P_{min}. The rise in price from Pe to P_{min} would dis-incentivize buyers of (cheap) alcoholic drinks by making the drinks less affordable, hence reducing their Qd from Qe to Qs, assuming minimum price is optimally set.



- Other strengths of minimum price policy
 - As a minimum price policy will definitely increase the price of cheap alcoholic drinks, it would more effectively target those that are young, low income and even problem/heavy-drinkers, as these people tend to favour cheap (& high-strength) alcoholic drinks.

Evaluation:

• Comparing taxation and minimum price policies, retailers might choose to absorb a portion of the indirect tax and the price of alcohol increases by less than the amount of specific tax imposed. On the other hand, a minimum price policy has the certainty of increasing price to the minimum level, hence curbing its over-consumption.

[Antithesis: Government intervention through managing alcohol price is not most desirable, because there are <u>limitations to managing price (AT1)</u>, and because there are <u>alternative</u> <u>policies</u> (AT2) that might be more desirable.]

AT1: Limitations of price management policies

- Due to the addictive nature of alcoholic drinks, it might be argued that PED<1. As such, taxation and/or minimum price may not be very effective to discourage alcohol consumption. The rise in price (after the policy) might lead to less than proportionate fall in quantity demanded so Qe might not fall sufficiently to Qs. A very high level of tax might be required to induce a sufficient fall in Qd to Qs, and this makes the tax politically unpopular.
- Indirect taxes on alcohol are also regressive in nature and hence inequitable. Alcohol tax
 affects lower income alcohol consumers more as alcohol expenditure takes up a larger
 proportion of their income. As such, lower income casual consumers of alcohol at social
 events such as birthdays and festive gatherings unfairly bear a greater burden of the tax
 (as a proportion of their income) relative to higher income consumers.
- In practice, it is hard for government to quantify the negative externalities from consumption from alcoholic drinks. For instance, it is difficult to calculate the probability of loss of lives from drink driving. In addition, there are further difficulties in assigning monetary values to the loss of lives of third parties due to drink-driving accidents caused by the offender. Thus, the government might not set the tax accurately and so it might still not achieve socially desirable/AE outcome.
- In practice, it is also hard to estimate the optimal minimum price to set for reasons similar to those elaborated in the previous point. The government might not set it high enough to discourage consumption sufficiently or vice versa.
- For bars, pubs, restaurants and stores that sell alcoholic drinks, the imposition of alcohol tax would raise their COP → cet par, their profits fall, might result in higher unemployment. Same for alcohol producers: Their post-tax total revenue or producers' surplus falls.
- For minimum pricing, the sellers' incentives are distorted, because the higher price would drive them to increase Qs & the market ends up with surplus that cannot be cleared in the short run, as illustrated on the graph whereby Qs>Qd at P_{min}, This also implies wastage of scarce resources to produce these unsold units, indicating allocative inefficiency.
- Another drawback of minimum price policy is that it doesn't affect alcoholic drinks with higher price point. Perhaps one can argue that after the price hike of alcoholic drinks affected by minimum price, people might switch to other (slightly more expensive) alcoholic drinks/brands unaffected by minimum price.

• Finally, unintended consequences can result. For instance, people might buy alcohol from neighbouring country where minimum price doesn't apply. Or alcoholics might switch to other relatively cheaper means to satisfy their addiction like other types of substance abuse.

AT2: Other policies might be more desirable.

Students should explain 1 or 2 alternatives that are distinctively different from 'managing price', so that the answer has the scope to address the word 'most' desirable.

- Non-Price Management Policy 1: Campaigns and educational efforts to discourage alcohol consumption.
 - How it works
 - The aim is to raise public awareness through launching campaigns related to problem-drinking, drink-driving and organizing talks or exhibitions on health risks on excessive alcohol consumption
 - These campaigns and educational talks/exhibitions attempts to plug the information gap and reduce consumers' perceived MPB of consuming alcohol to be in line with actual MPB, so that demand would fall from DD₁ (imperfect info) towards DD₀ (perfect info) and Qe can fall towards Qs, as shown in Figure 1.
 - Strengths of policy
 - Such a measure addresses directly the root cause of market failure due to imperfect information. So, by providing the necessary information to educate the people on the 'true' benefits or costs of consuming alcohol, mindsets or attitudes towards consuming alcohol might change, and hopefully this reduces the initial over-valuation of MPB. This policy also aims to instil a positive change to consumers' habits and behaviour so that they are motivated to cut down on drinking on their own.
 - The change in behaviour brought about by educational campaigns is permanent. Upon accurately assessing the true MPB of consuming alcohol, consumers make decisions which are socially optimal even with the cessation of education campaigns.
 - o Limitations
 - Public might be unreceptive to the education and campaign messages. Mind-sets, attitudes and habits might be hard to change and might take a long time to change, especially so when alcohol is addictive in nature. Thus, this policy might not be effective in the short run. Positive results, if any, might only be realized in the long run.
 - Thus, continual effort is needed from government to reach out to public and this can impose great strain on government's budget.

Evaluation:

As compared to managing price or legislation, this policy has potential to exert a more
permanent effect on correcting the alcohol overconsumption. Should the tax or minimum
price be removed, over-consumption might still persist if people are not well-informed on
the harms of alcohol consumption. Hence the argument is that if information is provided,
there would be greater chance that people would understand the true costs to themselves

and thus would be more willing to reduce consumption on their own, without the need of 'extrinsic' financial disincentives of tax or minimum price.

- Compared to a ban, this measure is considered less 'blunt', as consumers' sovereignty is still present. However, whether this policy can achieve socially desirable results depends on receptivity of the public and the willingness of consumers to change their drinking behaviour. But as mentioned, people might be resistant to change habits and behaviour and they need time to change. Thus, this policy might take longer time to achieve desired results, as compared to the alternative policies.
- <u>Non-Price Management Policy 2: Legislations that restrict sales & consumption of alcohol,</u> which can include 1) ban on sales to certain age groups, such as people aged 18 and below, 2) ban on consumption to certain timings of the day such as after 1030pm in public areas, and 3) ban on sales and consumption for certain events/occasions (e.g. sporting events)
 - How it works
 - Legislations like ban of sales of alcohol to certain age groups and for certain events have the effect of decreasing SS such that equilibrium Q falls. This helps to reduce or correct the market failure arising from overconsumption of alcohol.
 - Legislations like ban on the consumption of alcohol at certain timings of the day has the effect of reducing DD such that equilibrium Q falls. This helps to reduce or correct the market failure arising from overconsumption of alcohol.
 - Strengths of policy
 - Upon imposing the ban, the effects are usually immediate in limiting sales & consumption. Policy makers can achieve greater certainty in bringing down the over-consumption, as they target directly the groups and/or events that are very likely to create problems. Given that these consumers are compelled to comply as the failure to do so would result in penalties, this policy is usually instantaneous in its effects.
 - For instance, the negative externalities due to drink-driving or rowdiness during night-times or unruly behaviour after sporting events can be expected to be reduced drastically and quickly.
 - Limitations of policy
 - Might be administratively costly to the government due to the need to enforce, to check and monitor
 - Policy might not be effective if the penalties for lack of compliance aren't harsh enough. Whether policy works well or not depends on level of enforcement by the authorities, as well as on whether the penalties are harsh enough.
 - Doesn't preserve consumers' &/or producers' sovereignty, as these parties cannot exercise freedom of choice to consume/produce after a ban is imposed.
 - Depending on the way the ban is imposed, certain unintended consequences and/or exploitation of loopholes might occur. For example, minors might ask adults to purchase alcohol for them. Another possible unintended effect can be the production and consumption of illegal drinks

like moonshine or bootleg alcohol which might result in worse societal outcomes.

 You can also consider the possibility of a loss of tourism dollars and other societal benefits, to the extent that the DWL due to an alcohol ban exceeds the DWL due to market failure.

Evaluation:

 Compared to taxation, bans might be less desirable as it displaces the price mechanism and consumer sovereignty is sacrificed. Consumers can no longer make any decision with respect to the amount of alcohol they wish to consume. Responsible drinkers are not allowed to purchase/consume alcohol when bans are in force. Yet, bans might be better than 'managing price' which might not achieve results that are as 'immediate' and also as effective, especially when PED<1 for alcoholic drinks.

Other alternative policies that can be considered: Govt to spend on rehabilitation centres & programs, Govt regulation/legislation on advertising of alcohol products

Conclusion

'Managing price' via taxation &/or minimum price is desirable to the extent that it would work through the price mechanism by creating a financial incentive or disincentive for consumers and producers to correct the overconsumption/production of alcohol in the short run, provided that tax or minimum price is correctly gauged.

However, it might not sufficient to rely on price-management policies only. Hence the most desirable policy approach might be a combination of measures to help achieve socially desirable outcome over time by addressing the various sources for the market failure. The over-consumption of alcohol stems from a multitude of factors such as the presence of negative externalities, imperfect information as well as other reasons like the cheapness of alcoholic drinks (in UK) and maybe even the addictive nature of alcohol that makes it so hard to quit, the strong drinking culture observed in some societies and so on. While taxation can make people to internalize the negative consumption externalities and minimum pricing targets cheap alcohol, there must be complementary measures like bans to control behaviour or prevent initiation from young age and campaigns to overcome imperfect information and hopefully to correct behaviour over the long run.

Education and campaigns are unlikely to manifest effects in the short run and success also isn't guaranteed, even in the long run. Hence it needs to be complemented with other policies such as price-management, and legislation, because such policies can achieve quicker results. In addition, legislation such as bans can help policymakers reduce their overconsumption or reduce negative externalities with greater certainty.

In any case, all policies need to be reviewed regularly as many things, such as economic conditions, can change over time.

Any other relevant points/insights are also accepted.

Knowledge, Application, Understanding and Analysis			
L3	A well-elaborated, balanced and sensible answer	8 – 10	
	Displays fluency and clarity throughout		
	Good use of examples.		
	Excellent use of theoretical framework.		
	 Good scope- covered at least 3 policies. 		
	 Good attempt in explaining the workings of every policy with clearly illustrated diagrams and in analysing strengths and limitations for every policy 		
L2	Sound and somewhat balanced, but not adequately developed	5 – 7	
	Some lapses in analysis		
	• Did not cover antithesis sufficiently- for e.g., did not analyse the demerits of price- management policies or did not analyse alternative policy		
	Insufficient scope—not enough policies to address the key word 'most' desirable		
L1	Answer lacks relevance	1 – 4	
	Lots of glaring conceptual errors		
	 Journalistic approach, with no theoretical framework 		
	One-sided answer: No antithesis		
Evaluation			
E3	• For a conclusion and evaluative assessment that is based on economic analysis.	4 – 5	
	Considered attempt to make comparison between the policies		
	Well-reasoned judgement on whether price-management policies are 'most' desirable		
E2	• For a conclusion where the evaluative assessment is based on weak analysis.	2 – 3	
	Insufficient attempt to make comparison between the various policies		
	Judgement is not clearly substantiated		
E1	An unexplained conclusion	1	

Examiner's comments for Part a

<u>General</u>

- Majority were able to correctly interpret the question—that governments intervene in the market for alcohol because the unregulated free market would result in overconsumption and allocative inefficiency (hence market failure), and the sources being <u>negative externalities from consumption</u> and <u>imperfect information of private</u> <u>costs/benefits of consumption</u> of alcohol, a demerit good. The quality of explanation however varies.
- A few scripts touched on government policies to correct market failure. Such responses lack relevance, as the focus is on why government intervenes and not how.

Explanation of negative externalities

- Generally, there is a need to improve on providing examples of negative externalities. The third parties were not clearly spelt out and the spillover effects on them were not described.
- For instance, quite a number of candidates wrote that alcohol consumption results in 'lower productivity and economic growth', without stating who the third parties were and how they suffered. Some candidates also wrote that alcohol consumption results in drink-driving and violent behavior, but they could have done a better job in identifying the third parties and their 'costs', for eg injuries to other road users caused by drinkdriving accidents.

- There were also some candidates who did not provide a proper account of the process leading to the market failure due to negative externalities. A good answer would give a step-by-step explanation (refer to answer scheme), detailing how the pursuit of self-interest and thus the disregard of negative externalities resulted in over-consumption and allocative inefficient outcome.
- For market failure associated with negative externalities, it is important to note that the fundamental reason - self-interest - must be given. The conditions for Qe (MPB=MPC which maximizes net private benefits) and Qs (MSB=MSC which maximizes social welfare) must be stated. Any gaps would affect clarity of answer.
- Some candidates were also imprecise in their answers. DWL area was incorrectly shaded. Conditions for Qe and Qs were incorrectly stated. For instance, some wrote that Qe is determined where MPB=MSC. Errors were also seen in diagrams in terms of the labelling of benefits and cost curves.
- DWL area was also stated rather than explained.

Explanation for Imperfect information

- As for imperfect information, candidates are expected to explain the outcome that people were not fully aware of the 'true' costs or benefits of consuming alcohol and thus, over-valuated their MPB, causing their demand to be higher than what it would be if perfect information is given. Weaker responses omitted the link to the different levels of demand.
- Quite a number of candidates focused on imperfect information about negative externalities causing market failure. This should not be done. Focus of imperfect information analysis should be on <u>private</u> costs/benefits, not external costs/benefits.
- Qe and Qs levels were often stated instead how being explained how they were determined. DWL area was likewise stated rather than explained.

Examiner's comments for Part b

<u>General</u>

- For (b), a balanced discussion was required. Candidates are expected to first analyze whether 'managing price of alcohol' via taxation and/or minimum price is desirable, and thereafter analyze other 'non-price' measure(s), so as to help them determine if managing price is 'most' desirable in their conclusion. To best address the key words 'most' desirable, a discussion of 3 policies is expected.
- Some candidates elaborated on price-management policies only and did not consider alternative (non-price) policy. This would affect their Level marks as well as limit their ability to come up with a judgement on whether managing price is 'most' desirable, as compared to other non-price measure(s).
- A minority stated incorrectly that 'managing prices' are 'price controls', and even used the terms interchangeably. Do note that price controls in the form of minimum price policy are a subset of price management policies. However, price management policies can include use of indirect taxes.

Taxation

Some candidates incorrectly identified *direct* taxation as a measure. Direct taxation refers to taxation on a person's income. Candidates ought to focus on <u>indirect</u> taxation levied on alcohol sellers.

- Some candidates were unclear in explaining how indirect taxation works.
 - No mention of a rise in cost of production (MPC) and/or fall in SS
 - Requirement for amount of specific tax = value of external cost to achieve allocative efficient outcome was not stated
 - Some failed to point out that the subsequent rise in price would cause quantity demanded to fall. This point on the price increase is important to address the key words 'managing price'.
 - Others did not go further to link the fall in quantity demanded to the correcting of the over-consumption or market failure from part (a).
 - A few candidates are still making basic errors in expression for the terms 'quantity demanded' vs 'demand'.
- Graph
 - Some candidates did not shift the MPC or SS curve.
 - Other candidates incorrectly shifted the MPB or DD curve leftwards when analyzing indirect tax.
 - \circ $\;$ The increase in equilibrium price was not shown on some graphs.
 - Candidates ought to leverage on the graph on negative externalities from (a), whereby MPB>MSB. This graph would show the prior over-consumption due to negative consumption externalities, and the upward shift of MPC/SS by the amount of the tax would then help to show how the rise in price corrects the overconsumption.
- Merits and demerits of taxation were both needed for a balanced discussion. Some candidates did not cover them adequately.
- A number of responses acknowledged that a strength of an indirect tax policy is that it helps to generate revenue for the government to finance forms of government spending. Best quality answers were able to link thoughtfully back to the alcohol market. For eg. financing the cost of rehabilitation programmes for alcoholics, financing education and campaigns against alcoholism. This was compared to those who merely mentioned financing government projects.

Minimum price

- Majority was able to explain how minimum price works with a diagram. Good scripts covered the definition, stated how it should be set to be effective (above market equilibrium price), and the effect that this higher price would cause quantity demanded to fall, thus helping to correct the over-consumption. Any gaps would affect clarity of answer.
- Once again, the point on the price being higher after the minimum pricing must be evident, due to key words such as 'managing price'.
- A few candidates incorrectly analyzed a maximum price/price ceiling instead.
- While the observation that a surplus would be generated from minimum pricing is a correct one, it was however stated and not properly explained.
- Some candidates wrote that one demerit of minimum price involves the strain on government's budget to buy up the surplus. This might not be the case, as the government is not obliged to buy up any surplus. In this case, it is unlikely for the government to buy up the surplus alcohol. After all, alcohol is unlike rice which is a necessity. In the case of

rice, governments buy up rice surplus with the objective to supplement any future shortages due to unfavourable weather and other factors beyond its control. The same case cannot be reasonably made for alcohol.

Alternative policies- i.e. policies that are distinct from 'managing price'

- Education and campaigns
 - Most candidates chose to discuss this policy. Some did not give examples on how the policy should be conducted, and what information should be provided for the people to deal with information failure.
 - Majority gave cursory explanation that the provision of information would lower the demand for alcohol. Better scripts provided sensible elaboration on how education and campaigns is a desirable policy, that by providing the necessary information, it would attempt to induce changes in mindsets / attitudes and hopefully cause people to change their habits and behavior i.e. cut down on excessive alcohol drinking.
 - Some answers lack depth and rigour, as they did not link to the intended effect of the policy which is to reduce the overvaluation of MPB and hence the demand for alcohol.
 - A significant number of answers did not link to the attainment of Qs level, hence correcting the overconsumption of alcohol, achieving allocative efficient level of consumption.
 - Quite a number of candidates wrote that the advantage of this policy targets the 'root cause' of the market failure, without stating what the 'root cause' was.
- Legislation
 - Some candidates were unclear in giving examples of laws which restrict alcohol consumption. A few simply stated a ban on alcohol as an example, without clarifying the details. Is the ban a complete ban? Or is it a ban based on age or time, or is it a ban on consumption or sales?
 - Best answers would go on to analyse how a ban affects demand or supply. For example, a ban on under-21s buying alcohol would effectively reduce demand for alcohol.
 - A few suggested the imposition of a production quota for alcohol. However, the effect of a quota on the shift on the supply curve was often omitted.
 - Similarly, the link to the attainment of Qs level was omitted.

Evaluation & conclusion

- In general, there is much room for an improvement on evaluation and synthesis.
- Quite a number of candidates did not make a stance as to whether managing price is 'most' desirable.
- To arrive at a judgement on whether managing price is 'most' desirable, it is necessary for comparisons between the policies based on their strengths, weaknesses, effectiveness and so on. In many scripts, the comparison is limited and unclear. In a number of instances, it seemed that that the responses made were merely repeating earlier points made in the body of analysis in terms of the merits and demerits of each policy.
- While many candidates proposed that a combination of measures was required, not enough effort was made to substantiate how this policy approach is 'most' desirable.
- Many gave sweeping statements that that taxation &/or minimum price is a 'short-run policy' while education is a 'long-run policy' or that 'education should be implemented in the long run'. It is important for candidates to work on improving their expressions. For instance, a statement that makes better sense would be 'since education would only yield positive

results (if any) in the long run, taxation &/or minimum price is therefore recommended to discourage consumption in the short run.'

- Some other candidates concluded that education is the 'most' desirable' policy compared to managing price because education targets the 'root cause' of the market failure which is imperfect information. Such a reasoning suggests that there is only one root cause, which is imperfect information. Candidates need to put in more thought before making such statements. They should consider whether there is only one 'root cause' in this case, and what are the other possible 'root causes'. The overconsumption of alcohol is not just brought about by imperfect information but also the presence of negative consumption externalities that had been disregarded in private decision-making, due to self-interest. Indirect taxation can make consumers internalize the external costs, so it might not entirely be wrong to conclude that taxation can help target the root cause of negative externalities too. There were also a few candidates who reasoned quite soundly that while education and campaigns supply information to the masses, the root of the problem remains, that alcohol is addictive and to bring about a change in behavior amongst heavy drinkers is difficult. Finally, another possible 'root cause' that candidates should consider is the very low prices of alcoholic drinks in Scotland, which might have necessitated the minimum pricing policy to raise prices of cheap alcohol to discourage consumption.
- Better quality evaluation also appealed to the UK context demonstrating a well-thought out analysis of the issue of desirability which is context driven rather than just scratching the surface at the theoretical level.

Below are some rather decent excerpts of evaluation and synthesis:

'Overall managing the price of alcohol through the introduction of a minimum price policy is not the most desirable since it will not be taken up well by the people and also displaces the price mechanism. Other policies are more effective in the short run such as indirect taxes, since it also generates tax revenue that can be used in other areas such as healthcare. If the government is unable to determine an accurate estimation on the extent of overconsumption, both price floor and indirect tax could either lead to over-taxing and an under-consumption of alcohol or an insufficient reduction in the level of overconsumption. Education and campaigns, regardless of their long time span, ensure that no such inaccurate information errors in the government can occur, allowing the problem to resolve itself, and also addresses the root cause stemming from the underestimation of private benefits. For affluent countries such as UK and Singapore, the high cost of education/campaigns is easily covered and the long term benefits far outweigh the costs. Thus managing the price of alcohol is not the most desirable but the utilization of education and campaigns is.' (Chong Xin Wei, 20S06P)

'All in all, government intervention through management of price of alcohol is probably most desirable. This is as consumers consuming alcohol might probably already have perfect information about the bad effects of consuming alcohol on their health, they just choose not to care about it. Hence the main market failure would be due to the consumers not caring about the negative MEB they incur on society when they overconsume, hence the most effective way would be to put price controls and taxes in order for them to internalize the full costs of their actions and hence allow them to reduce quantity demanded to social optimal level. Furthermore, taxation will generate government revenue and this could be put in the provision of merit goods or education/campaigns to change consumer behavior. Hence the government intervention via managing price of alcohol is the most effective and hence most desirable.' (Feng Jianguo, 20S06U)

'In conclusion, the government should use measures such as taxes and education to intervene in the alcohol market...Education is necessary to target the other root cause of overconsumption-information failure. While education has limitations such as high cost and long time period to effect change, these limitations are defrayed by the strengths of taxes, such as its instantaneous effect and its ability to generate revenue, thus allowing it to pay for the educational campaigns. Education also has permanent effects... Thus a combination of both taxes and education is the most desirable as they target both root causes of overconsumption (negative externalities and imperfect info) and cover both long run and short run effects.' (Lucas Chua, 20S03O)

'Taxation and minimum price increase the price of the good, hence not targeting the root cause of information failure. Although they can work in the short run, once the policy is removed or producers have found ways to bypass the policy such as improved production methods, alcohol will once again be overconsumed. However, taxes can help to generate tax revenue needed to carry out educational campaigns. Campaigns take a long time period to affect the masses and hence works in the long run and need other policies to complement it and provide the tax revenue. Hence taxation and minimum price can work in the short run while education and campaigns work in the long run to reduce overconsumption and eliminate market failure and achieve allocative efficiency. (Ng Jian Yi, 20S06P)