

- 3 Shisha smoking was banned in Singapore in 2014 because smokers were at risk of developing the same health problems as cigarette smokers, such as cancer and heart disease.
- (a) Explain why government intervention is advocated in the markets for both merit and demerit goods. [10]
- (b) Discuss whether a ban is the best response in addressing the market failure arising from shisha smoking. [15]
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Suggested Answers:

(a)

Command Word: Explain why

Content: Merit good, demerit good, sources of market failure (positive externality, negative externality, imperfect info)

Context: Examples based on merit and demerit good

*Synopsis: To give reasons why government intervention is advocated in the markets for both merit and demerit goods making reference to externalities and imperfect information in explanation.*

#### INTRODUCTION

- Define merit good and demerit goods
- Government intervention is advocated because...
  - Market fails (define market failure)
  - Issues: underconsumption/production, overconsumption/production
  - Inefficient allocation of resources → deadweight loss

#### BODY

##### **Merit Good → Vaccination**

###### Positive Externality

- Define positive externality
- In deciding how much medical products to consume → consumers only consider their private benefits → protection from diseases when they receive the vaccination, but do not take into account the positive impact on the health of close family members and friends around them (third party) as they are protected from contracting diseases too and therefore can save on medical expenses (external benefit)
- Existence of positive externality → divergence between private benefit and social benefit
- Figure 1 → assuming that there are no external costs, the level of vaccination taken is at  $Q_p$  where  $MPC=MPB$  where consumers satisfy their self-interest

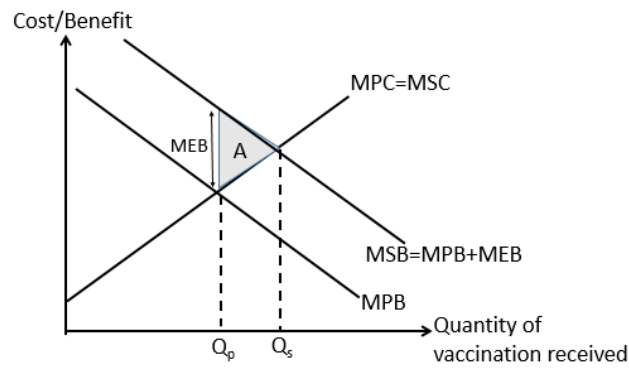


Figure 1

- However, the socially optimal level of consumption of vaccination is at  $Q_s$  where  $MSC=MSB$  where society is better off.
- $Q_p < Q_s \rightarrow$  under-consumption of vaccination which leads to welfare loss to society shown by the shaded area A
- Government intervention is advocated due to...
  - Under-consumption of vaccination that generates positive externality which therefore should be consumed more
  - Free market fails to allocate resources in a way that maximizes society's welfare  $\rightarrow$  deadweight loss  $\rightarrow$  government intervening to increase consumption will reduce this deadweight loss

### Demerit Good $\rightarrow$ Shisha tobacco products

#### Negative Externality

- Define negative externality
- In deciding how much shisha to smoke  $\rightarrow$  smokers only consider their private costs  $\rightarrow$  price of shisha, but do not take into account the negative impact on the health of the passive smokers around them  $\rightarrow$  external cost accrued to the second-hand smokers due to the action of shisha smokers smoking  $\rightarrow$  includes the healthcare cost (external cost) that second-hand smokers (third party) have to incur from potential health risks of having to inhale smoke from shisha smokers smoking
- Existence of negative externality in shisha smoking  $\rightarrow$  divergence between private cost and social cost
- Figure 2  $\rightarrow$  assuming that there are no external benefits, the level of shisha smoked is at  $Q_p$  where  $MPC=MPB$  where smokers satisfy their self-interest

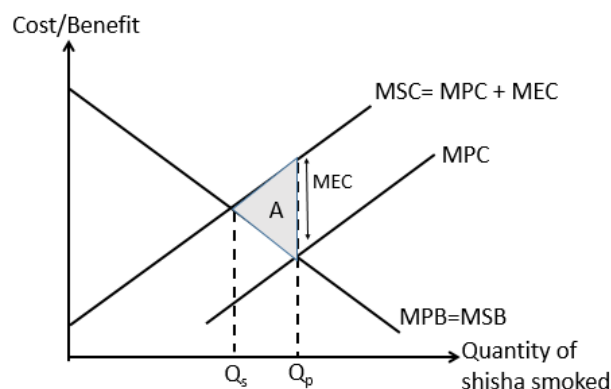


Figure 2

- However, the socially optimal level of consumption of cigarettes is at  $Q_s$  where  $MSC=MSB$  where society is better off.
- $Q_p > Q_s \rightarrow$  over-smoking shisha which leads to welfare loss to society shown by the shaded area A
- Government intervention is advocated due to...
  - Over-consumption of shisha tobacco products that generate negative externality which therefore should be consumed less
  - Free market fails to allocate resources in a way that maximizes society's welfare  $\rightarrow$  deadweight loss  $\rightarrow$  government intervening to reduce consumption will reduce this deadweight loss

### Imperfect information

- Define imperfect information
- Imperfect information due to the ignorance of the actual private cost  $\rightarrow$  under-estimation of private costs
  - Actual private cost  $\rightarrow$  healthcare cost associated with the increased probability of contracting lung cancer and heart disease due to smoking shisha as well as additional healthcare cost from contracting influenza or tuberculosis due to unhygienic sharing of mouthpieces attached to shisha smoking equipment
  - Perceived private cost  $\rightarrow$  price of smoking shisha

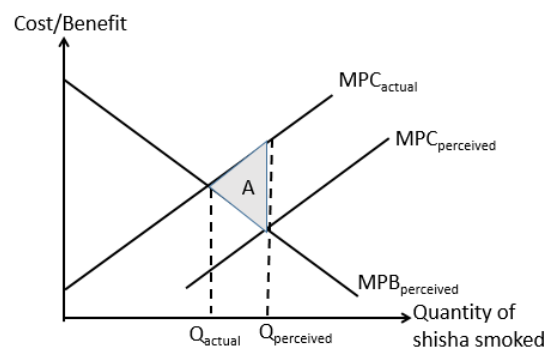


Figure 3

- Figure 3  $\rightarrow MPC_{actual} > MPC_{perceived} \rightarrow$  over-smoking of shisha by  $Q_{actual} > Q_{perceived}$
- Government intervention is advocated due to...
  - Over-consumption of shisha tobacco products that brings about greater healthcare costs and risks in the future and therefore should be consumed less
  - Free market fails to allocate resources in a way that maximizes society's welfare  $\rightarrow$  deadweight loss  $\rightarrow$  government intervening to reduce consumption will reduce this deadweight loss

### CONCLUSION

- Government intervention is advocated in the markets for both merit and demerit goods due to the issues of under and over-consumption as well as deadweight loss.
- Policies are therefore required to address the market failure arising from the consumption of merit and demerit goods.

<b>Level</b>	<b>Descriptor</b>	<b>Marks</b>
L3	A clear and developed explanation of how the market fails for both merit and demerit goods (externalities and imperfect information) with links to why government intervention is advocated.	7-10
L2	Undeveloped explanation of market failure due to both merit and demerit goods. Answer does not explain on imperfect information but has examples of negative and positive externalities. (max 6 marks)	5-6
L1	Generally descriptive in nature, limited reference to economic framework.	1-4

(b)

Command Word: Discuss whether (2-sided)

Content: Ban, alternative policies, evaluate policies

Context: Shisha smoking

*Synopsis: To look at the effectiveness of ban in addressing the market failures associated with shisha smoking (negative externality and imperfect information) and after which providing alternative policies. Assessment on the policies given as well as deducing if ban is the best are required.*

## INTRODUCTION

- Define market failure
- Source of market failure
  - Negative externality in smoking shisha
  - Imperfect information (difference between perceived cost and actual cost of shisha smoking)
- Policies → Ban, Tax, Education

## BODY

**THESIS: Ban is the best response in addressing the market failure arising from shisha smoking**

- Ban – legal prohibition on the smoking of shisha → output consumed = 0 →  $Q_s = 0$  (Figure 4)

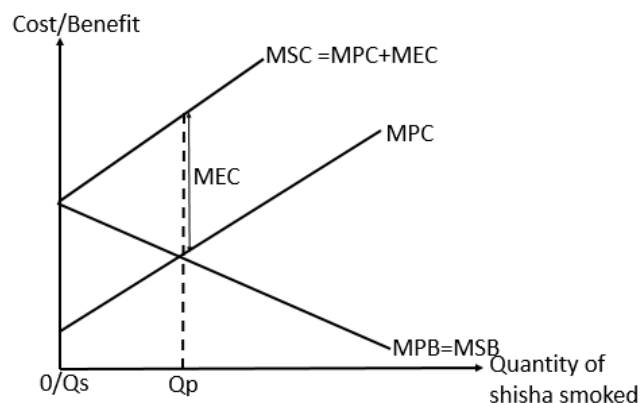


Figure 4

- Ban is the best way → no external cost will incur on third party since smoking shisha generates extremely high external cost → addresses market failure due to over-smoking of shisha by reducing consumption to  $0=Q_s$

**ANTI-THESIS: Ban is not the best response in addressing the market failure arising from shisha smoking as there are limitations to banning and therefore, alternative policies are required to address the market failure**

#### Limitation of Banning Shisha Smoking

- Government failure → banning shisha results in greater deadweight loss compared to before

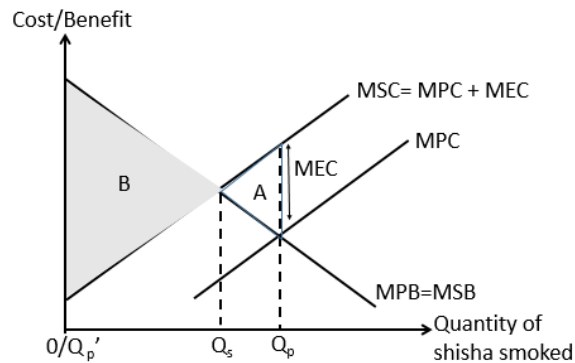


Figure 5

- Figure 5 → Shisha smoking is banned at  $Q_p'$  → banning does not reach socially optimal output  $Q_s$  → deadweight loss after ban is imposed, Area B, is larger than not intervening at all, Area A → banning is ineffective in addressing the market failure due to shisha smoking since deadweight loss still exist
- Retailers selling shisha tobacco → loss in revenue

#### Alternative Policy 1: Tax

- Tax imposed → increases price of shisha → increases cost of smoking shisha → increases MPC

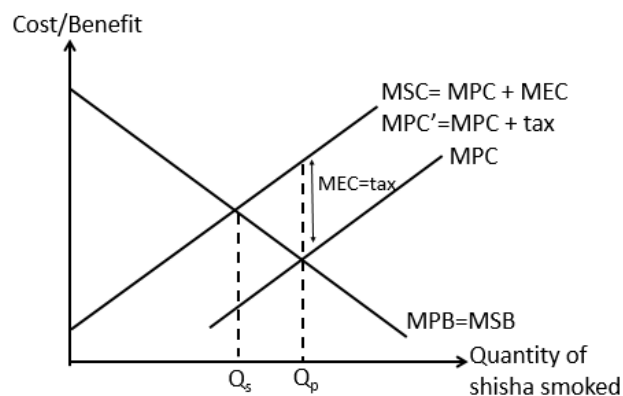


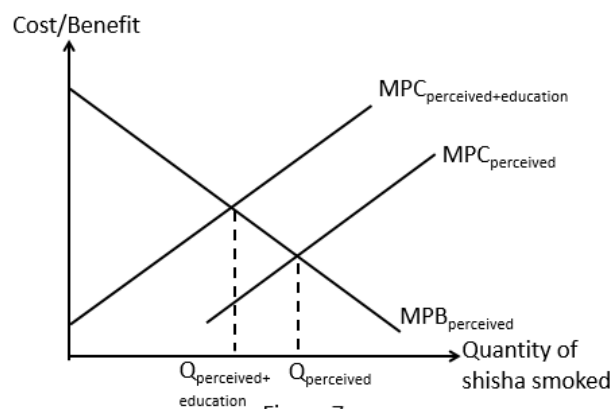
Figure 6

- Figure 6 → assuming amount of tax = MEC → shisha smoking reduced from  $Q_p$  to  $Q_s$  → deadweight loss is eliminated → efficient allocation of resources → market failure from shisha smoking addressed
- Taxation is a better way than banning
  - Forces smokers to be responsible for the external costs accrued to second-hand smokers → smokers will then have to reduce the quantity of shisha smoked
  - Flexibility → tax according to MEC

- Limitations of taxation
  - Government failure → underestimation of MEC → under-taxing → shisha smoking not reduced to socially optimal output  $Q_s$  → deadweight loss still exist
  - $PED < 1$  → due to addiction → less than proportionate increase in quantity demanded when price of shisha smoking rises due to taxation → negligible effect in reducing shisha smoking
  - Taxation is not able to address market failure due to imperfect information → require alternative policy

#### Alternative Policy 2: Education

- Educational campaigns by Health Promotion Board in Singapore → keep shisha smokers more informed of the actual private costs of smoking → e.g. Singtel mobile phone subscribers who come within 1km of shisha hot spot at Kampong Glam received multimedia message in the form of an 18-second video informing them about the actual costs of smoking shisha which is not just the health risks from smoking tobacco products but also the possibility of contracting other diseases such as tuberculosis or other viruses left behind by the previous shisha smokers via the mouthpiece as not all shisha retailers wash their equipment regularly → informing shisha smokers of such facts → increases their perceived private cost of shisha smoking



- Figure 7 → educating shisha smokers increase their perceived costs of smoking from  $MPC_{perceived}$  to  $MPC_{perceived+education}$  → shisha smoking up till quantity  $Q_{perceived+education}$  where this is the socially optimal level of output
- Limitation of educational campaigns
  - Whether or not quantity of shisha smoked is reduced because of the campaigns are voluntary → might only have minimum impact on the level of consumption
  - Opportunity costs involved in implementing educational campaigns → resources could be better used to finance other programmes that could have a more certain impact

## CONCLUSION

- Shisha was banned due to large health risks associated with the smoker as well as external costs accrued to passive smokers. Although it does reduce smokers' smoking of shisha in Singapore, shisha smokers could still seek alternative methods to satisfy their addiction → smoking cigarettes or smoking shisha overseas → defeats the intention of banning and health risks to smokers sustains
- Although banning does not address the root cause of market failure due to imperfect information and therefore other policies are required, it allows for quantity of shisha smoking to be at socially optimal level ( $Q_s = 0$ )
- Banning is the best response in addressing the market failure due to shisha smoking but there must be monitoring and enforcement in place to ensure that retailers oblige to the policy of banning. Banning could also be about banning shisha smoking for those who are of a certain age and banning the activity of shisha smoking in some places instead of a complete ban.

Level	Descriptor	Marks
L3	3 (Ban & 2 others) well-explained policies with limitations to address the market failure (negative externality and imperfect information) in context.	9 - 11
L2	2 (Ban & 1 other) well-explained policies with limitations. (attempts to answer according to context)	7 – 8
	2 (Ban & 1 other) well-explained policies without limitations. (max 6 marks)	6
L1	For an answer that shows some knowledge on policies taken by the government to address market failure.	1 – 5
E2	For an evaluative assessment based on economic analysis.	3-4
E1	For an unexplained assessment or one that is not supported by analysis.	1-2