

Q1

In 2013, the Pollution Standards Index (PSI) in Singapore hit a record high. It was reported that there was a shortage of face masks used to protect individuals from the harmful effects of the haze.

(a) Explain the likely reasons for the shortage of face masks and the role of price mechanism in correcting the shortage. [10]

INTRODUCTION

A shortage exists when the market is not in equilibrium at existing prices. The demand-supply framework can be used to account for the shortage and the 3 roles (or functions) of the price mechanism can be used to explain how the shortage can be corrected in a free market. Demand refers to the quantities of a good that consumers are willing and able to purchase at each possible price during a period of time, *ceteris paribus*, while supply refers to the quantities of a good that producers are willing and able to offer for sale at a given set of prices during a period of time, *ceteris paribus*.

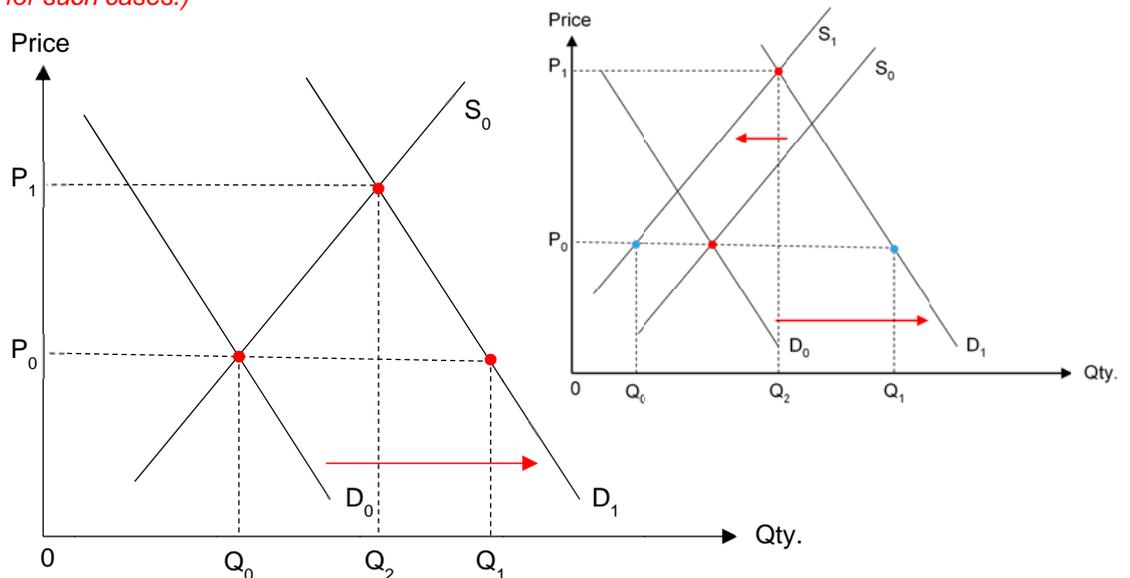
BODY

Explain the Shortage

With the PSI hitting a record high, there will be a rise in the number of consumers who need the masks. This is especially true for those who work in open areas. Furthermore, reports on the ill-effects of the haze had brought about demand even by those with a cursory exposure to the haze or by parents worried for the well-being of their school-going children. The fear of the haze being prolonged might have also brought about further demand from those who stockpile the face masks. Profiteering behaviour might also occur by some who purchase more than they require in order to resell them at a higher prices during the short-term shortages. These result in an increase in demand for face masks.

(*Candidates just need to have a decent analysis of the demand factors. Need not be too "long-winded", but expect 2 demand factors for a good answer)

(*If candidates highlight reasonable supply factor(s) too, it is acceptable too but the analysis will be more complicated. In such cases, a demand and a supply factor would suffice. Markers will have to be careful that the correct amount of shortage is identified for such cases.)



As seen in the figure above, at the initial market equilibrium price of P_0 , the increase in demand from D_0 to D_1 will result in a shortage of $Q_1 - Q_0$ as quantity demanded is more than quantity supplied. However, assuming that this is a free market without any price controls, the shortage will create an upward pressure on prices.

Explain how the Price Mechanism can Correct the Shortage

Explain how the signalling, incentive and rationing role of the price mechanism will correct the shortage such at $Q_d = Q_s$ at the higher mkt. equi. Price P_1 . (Note: Our C1 notes Chap 3 PG 26-27 have only signalling and rationing functions)

CONCLUSION

In conclusion, demand factors and an unchanged price in the short-run are the likely reasons for the shortage of face masks. However, in a free-market, the price will increase and through the 3 roles of the price mechanism correct this shortage over time.

Marking Scheme

LEVELS	DESCRIPTION	MARKS
3	<ul style="list-style-type: none"> • Able to identify 2 demand factors OR 1 supply and 1 demand factor to account for the shortage of face masks AND elaborate how these factors shift the demand &/or supply curves. • Factors raised are reasonable for the Singapore and haze context. • Able to correctly illustrate and identify the shortage. • Able to explain clearly (& best via the diagram) how the price mechanism can correct the shortage through its signalling OR incentive and rationing functions. • 	7-10
2	<ul style="list-style-type: none"> • Lack scope in the sense that only 1 DD OR SS factor was raised. • Lack scope in the sense that only one function of the price mechanism (5-6) was covered or not at all • Lack depth as DD/SS factors raised lack the accompanying explanation. • Lack depth as the functions of the price mechanism may be identified, but not explained. <p>* Cap at 5m if candidate did not attempt to explain how the price mechanism can correct the shortage.</p>	4-6
1	<ul style="list-style-type: none"> • Major conceptual errors with little coherent explanations 	1-3

(b) Discuss whether it is justified for the Singapore government to distribute free face masks to households during a haze. [15]

INTRODUCTION

- To consider the source(s) of mkt. failure that warrants govt. intervention.
- To consider if the type of intervention (free masks for all) is justified.

BODY**Efficiency Considerations (+ve ext)****Thesis: Solution is justified**

During a haze, market failure exists in the market for face masks due to +ve externalities from consumption and income inequality → hence warrants govt. intervention.

Positive externality: third parties such as employers will benefit from lower absenteeism due to health problems amongst employees brought about by the haze. National productivity would be less affected. Less subsidies by govt. for public healthcare required if the face masks reduce the incidence of people seeking treatment at public hospitals and polyclinics for haze-related health problems.

Given the severity of the pollution and the large numbers

Anti-thesis: Solution is not justified

However, the size of the +ve ext. might not be large enough to warrant free provision. This is because the majority of Singaporeans worked in skilled jobs that are in enclosed environments such as air-conditioned factories or offices. Furthermore, both public transport and private transport are air-conditioned. Hence the exposure to pollution air is brief.

Hence if the externalities is not as large, the socially efficient solution is to partially subsidise the masks but not to provide them for free.

Illustrate and explain how free provision in this case will result in DWL and an inefficient outcome. (* Candidates

<p>that it affect, the external benefits offered by the mask can be so large that the socially efficient level of consumption is where $P = 0$. In this case, distributing free masks will ensure the socially efficient level of consumption.</p> <p>Illustrate the mkt failure & show how giving out free masks can resolve the MF.</p>	<p><i>should use the prior diag. on –ve to illustrate this point to save time)</i></p> <p>In this case, free masks might be a popular measure but not socially efficient.</p>
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Efficiency Considerations (Imperfect Information)	
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Thesis: Solution is justified	Anti-thesis: Solution is not justified
<p>As it is the first time that the haze has reached such a high level, there may be imperfect information about the dangers to health brought about by such a record level of PSI. Hence consumers might downplay the need for masks and hence underestimate the private marginal benefits of the masks and hence under-consume them.</p> <p>Illustrate the mkt failure & show how giving out free masks can resolve the MF.</p> <p><i>(*Note: Theoretically, it is possible to illustrate a sufficiently large gap between PMB_{actual} and $PMB_{perceived}$ to justify free provision of masks. However, realistically it is difficult to argue that imperfect information alone can justify free provision of the masks. The shortage seems to suggest that consumer demand is strong rather than lacking due to imperfect information. The best candidates who focus only on efficiency arguments would most likely combine the 2 sources of inefficiencies to justify free provision of masks. i.e. Candidates may argue that masks in the context of a serious haze can be considered as a merit good by the government.)</i></p>	<p>The educational attainment of Singapore residents is high and the reach of the mass media in Singapore is widespread as we are a developed country. Hence any lack of knowledge about the importance of face masks when the PSI levels are high is likely to be addressed within a short period of time. Hence there is no need for the government to intervene by giving out free masks due to the temporal nature of the imperfect information problem.</p>

Income Inequality/Equity Considerations	
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Thesis: Solution is justified	Anti-thesis: Solution is not justified
<p>Income inequality/Equity: face masks become a basic necessity for all. Need to ensure poor households who need them, especially those prone to respiratory problems such as asthma, are able to have access to them regardless of their purchasing power. The poor also tend to work in more manual jobs with greater exposure to the polluted air, such as road cleaning, security and gardening. Hence these masks are an even greater necessity for them.</p> <p>Evaluation: This is even more crucial as prices of face masks is expected to rise in response to the shortage, putting this necessity further out of reach for poor income households. However, means testing should be applied to prevent abuse of this scheme.</p>	<p>Providing things for free can created a crutch mentality and a disincentive to work harder to break out of the poverty trap. A better solution might still be to subsidise/co-payment instead of free provision to mitigate the moral hazard arising from free provision.</p> <p>Furthermore, it is not justifiable for the state to pay for face masks for workers from low income households when their employers should be the one responsible for providing them a safe working environment. In the context of the workplace, new regulations or enforcement of work safety regulations could be the better solution as they do not incur opportunity costs arising from the use of state funds for free face masks.</p> <p>Also, it is not necessary to provide free masks for all as the rich would have the ability to afford the masks themselves.</p> <p>Evaluation: However, given the urgency of the haze problem and its temporal nature, it might be more fast-acting to provide free face masks to all rather than spend</p>

time hankering out details of subsidy scheme and new regulations to protect low-income workers. The temporal nature of the haze also reduces the amount of costs required to fund free face masks for all.

CONCLUSION

(For –ve ext + income inequality)

While there are economic grounds for government intervention in the market for face masks during a haze, the solution of free masks needs to be examined carefully with regard to the scale of its distribution and if there are better alternative solutions to address the market failure. Given the job nature of the majority of Singaporeans and that the low levels of absolute poverty in Singapore, it might not be justifiable to distribute free masks to all households. However, for low-income households, there can be grounds for such provision under the economic grounds of income inequality.

Marking Scheme

LEVELS	DESCRIPTION	MARKS
3	<ul style="list-style-type: none"> Discusses at least 2 of out the 3 grounds for government intervention. Clear analytical framework used to discuss the arguments for and against the provision of free masks by the government. Analysis adequately addresses the context of Singapore, haze and “free” masks. 	8-11
2	<ul style="list-style-type: none"> Lack scope in that only 1 of the 3 grounds for government intervention was covered. Lack scope in that the arguments raised were overly one-sided with scant consideration of the anti-thesis. Analysis does not adequately address the given context, in particular the issue of “free” – i.e. discussion is more for a discussion of government to (partially) subsidise masks rather than to give out “free masks” May have some minor conceptual errors in some of the key concepts in the question or is very theoretical with minimal contextualised arguments. An answer that digresses excessively into alternative solutions. 	5-7
1	<ul style="list-style-type: none"> Major conceptual errors with little coherent explanations No examples at all or examples are irrelevant or inappropriate Missing link to key concepts in the question 	1-4
E2	<ul style="list-style-type: none"> Answer has a stand on whether the government should give out free masks, justified with economic analysis Answer has a well-explained evaluative comment within the body of the essay. 	3-4
E1	<ul style="list-style-type: none"> Answer lacks a well-justified stand Answer lacks any evaluative comment within the body of the essay or contains generic evaluative comments. 	1-2