

**Answer all questions**

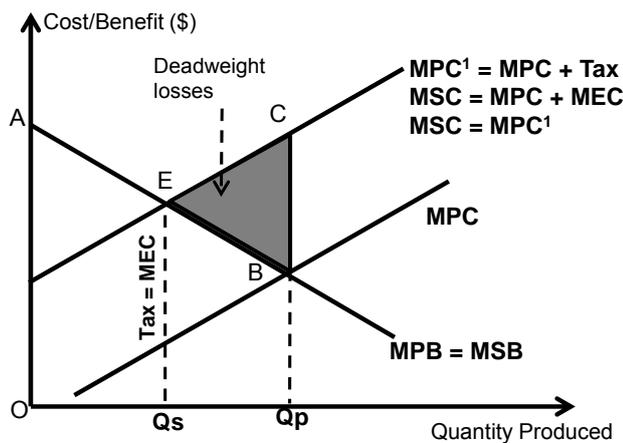
a	(i)	<p>Using Figure 1, summarise the trend in world price of steel in 2011-2014.</p> <p>The trend in world price of steel is decreasing. (1 mark)          The world price of steel reached its lowest point in July 2013. (1 mark)</p>	[2]
	(ii)	<p>In the light of Extract 2, use supply and demand analysis to explain the changes in steel prices in China.</p> <p><i>'Steel use in China has fallen as the country's real-estate sector cools.'</i> (1 mark)</p> <ul style="list-style-type: none"> <li>- Cool down in real estate industry; lesser construction works → Fall in derived demand for steel → Demand curve for steel shifts to the left → Price of steel decreases, ceteris paribus. (1 mark)</li> </ul> <p><i>'However China's mills have yet to slow in lockstep. Their output is supported by a fall in the price of iron ore, the main ingredient in making steel.'</i> (1 mark)</p> <ul style="list-style-type: none"> <li>- Fall in price of iron ore → Iron ore is factor input for manufacturing steel → Fall in cost of producing steel → Supply for steel increases; supply curve shifts to the right → Price of steel decreases, ceteris paribus. (1 mark)</li> </ul> <p>A fall in demand coupled with an increase in supply for steel results in the fall in steel prices in China.</p>	[4]
b	<p>"A surge in China's exports of steel has sparked complaints of unfair subsidies."</p>		
	(i)	<p>Explain why subsidies are considered a protectionist tool.</p> <p><i>'The surge in China's <u>exports of steel</u> has sparked complaints of unfair <u>subsidies</u>, many of which tend to come from provincial governments. China's steel industry has denied it is being supported by Beijing.'</i></p> <ul style="list-style-type: none"> <li>- Protectionism refers to the protection of home industries from foreign competition by the imposition of trade barriers on foreign products by the government. (1 mark)</li> <li>- The subsidies, which are grants given by the provincial government to their producers, help Chinese firms lower their cost of production, lower price and increase output. (1 mark)</li> </ul>	[2]
	(ii)	<p>Explain a possible reason that would motivate a country to practice dumping.</p> <p>Dumping refers to producers selling their goods overseas at very low prices below its MC (or at prices lower in the foreign market than the price charged in the domestic market) with the aim to drive out competition and gain market power. (1 mark)</p> <p><i>'China's massive steel-making engine, determined to keep humming as growth cools at home, is flooding the world with exports'</i></p> <ul style="list-style-type: none"> <li>- A fall in demand for steel in China's domestic market → Surplus of quantity supplied of steel → export at below mc to minimize losses due to</li> </ul>	[2]

	<p>overproduction or driving out competition in foreign markets to increase market power. (1 mark)</p>	
c	<p>(i) Explain one negative externality which is claimed to result from steel production and analyse how this can lead to market failure.</p> <p><i>'Tangshan, which is 200 km (124 miles) east of Beijing and produces more steel a year than the United States, has been on the frontline of campaigns to <u>cut smog</u> and tackle overcapacity.'</i></p> <p>A negative externality gives rise to <b>external cost</b> which arises when individual actions inflict costs upon a third party without the latter being compensated. These are additional costs borne by people other than the producer or consumer directly involved in an economic activity.</p> <p>The presence of negative externalities cause market failure as the transacted output in free market is considered over-consumed and/or over-produced relative to the socially optimum output level. The market price could also be considered to be 'under-priced' or not the 'true price' from the societal viewpoint.</p> <p>Where production of goods results in negative spill-overs on a third party, it is seen as a negative externality arising from the production of goods.</p> <p>When a firm produces a good (e.g. steel), in addition to its direct private costs from producing the good (i/e. the cost of raw materials, machinery, etc.), its production may impose a cost on others when it pollutes the environment. The cost on the local community from the actions of the factory may come in the form of polluted air, discomfort from unpleasant living conditions and even clean-up costs. These costs are not borne by the factory. These are all part of the external costs (MEC) that the producer imposes on the third party who were not compensated. The MSC of steel production exceeds the MPC, and the MSC curve lies above the MPC curve.</p> <p>Hence, the existence of negative externality in production will result in a divergence between private cost and social cost. (3 marks)</p>	[6]

	<p>In this case we assume that the private benefit to the firm resulting from the production of steel is the only benefit and there are no 'external' benefits. Thus, the MPB and MSB curves are the same.</p> <p>In deciding how much to produce, firms (i.e. the steel producer) takes into account only the private costs they will incur in the act of producing the good, ignoring the external costs that others were made to bear. Profit-motivated firms would maximize their net private benefits by equating its MPB to its MPC of producing paper (point B) and produces at <math>Q_p</math>.</p> <p>The existence of a negative externality in production creates a divergence between the MPC and the MSC equal to the value of the externality (i.e. the MEC). (<math>MSC = MPC + MEC</math>)</p> <p>Society would maximise its net social benefit at the output level where the value of benefits of the last unit of the good to society (MSB) is equal to the value of the resources needed to produce the good for society (MSC), <math>MSB = MSC</math> (i.e. only at <math>Q_s</math>).</p> <p>From society's viewpoint, at the market output <math>Q_p</math>, <math>MSC &gt; MSB</math>. This means this level of production adds more to costs than to benefits for the society and society's welfare is not maximised. The failure to take into account the negative externality results in net costs to society given by the shaded region ABE which represents the monetary measure of welfare loss to society when firms are maximising their net private benefit. This is known as the deadweight loss to society.</p> <p>Since the output that maximizes the paper producer's benefit (<math>Q_p</math>) is at a higher level than the output that maximizes society's benefit (<math>Q_s</math>), there is over-production from a societal perspective. Society would be better off if production is at the socially optimal output (<math>Q_s</math>) instead of <math>Q_p</math>. Hence at <math>Q_p</math>, there is an over-allocation of resources and over-production of the good. Thus, over-production leads to an unnecessary cost incurred on society as indicated by the deadweight loss. (3 marks)</p>	
(ii)	<p>As a consultant economist, what options would you present to the Chinese government for responding to the negative externalities of steel production, and what would you recommend? Justify your answer.</p> <p><i>'The authorities are making industrial firms - including steel mills - <u>renovate facilities</u> over the next few months in order to <u>meet strict new pollution standards.</u>'</i></p> <p><b><u>Taxation (Pigouvian Tax)</u></b></p> <p>The government may impose indirect tax (disincentive) to correct over-production due to negative externalities. It might force firms to pay a fee or indirect tax on each unit of quantity produced corresponding to the MEC they exert on society (vertical MPC-MSC distance at <math>Q_s</math>). Figure 1 illustrates the case of a negative externality caused by pollution.</p> <p>An indirect tax imposed on each unit of production has the same effect as an increase in the costs of production to the firms causing the externality. If this tax accurately reflects the MEC, firms in effect would have to pay for the use</p>	[6]

of (and harm caused to) the environment and their new MPC (ie. MPC1) will now coincide with the MSC.

Thus, the marginal private cost of the firm, after taking into account of the indirect tax, now rises to MPC1. The externality has then been 'internalised' i.e. taken into account by the firms in decision-making. As a result (of the decision-making adjustment), at output Q, MPC1 > MPB (and MSC > MSB), the firm would maximise its net private benefit if the firm cuts production until MPC1 = MPB – the point where the deadweight loss to society ceases to exist and net social benefit is also maximised (ie. output where MPC1 = MPB = MSC = MSB). With reference to Figure 1, the quantity being produced after the imposition (and internalisation) of the indirect tax now corresponds to the socially optimal level, Qs.



**Figure 1: Effect of Imposition of an Indirect Tax (or Pigouvian Tax)**

### Advantages

- A price can now be placed on the external costs in production that were previously unpriced.
- The indirect tax forces the firm to take into account or internalise the external costs imposed on third parties (especially when significant portion of the tax cannot be passed to consumers – where market demand is price elastic) – hence raising the firms' MPC. Profit-motivated firms may make the decision to reduce the output of the good produced/supplied or develop/use environmentally-friendly production methods to reduce the externality so as not to pay the tax.
- This method also has the flexibility in that the tax can be varied or adjusted according to the magnitude of the problem or the MEC.
- As a market-based approach, market participants still have the liberty to pursue their self-interests so long as they take into account the full costs and benefits of their actions.

### Disadvantages

- The potential lack of information would mean that external costs incurred is sometimes difficult to measure accurately given that the costs incurred by 3rd party is intangible and it is difficult to place monetary value on such harmful effects. As such, the government might have difficulty ascertaining the right amount of taxation to be imposed on the producers.

- Under-taxation will not completely eliminate the deadweight loss to society
- Over-taxation will lead to deadweight loss from under-production (or under-consumption) being created.
- It may also be unfeasible to use different tax rates for different firms in the same industry as it would be extremely difficult to measure the extent of the externality caused.
- It would be inequitable to impose the same tax rates as each firm may emit varying types and amounts of negative externality due to varying efforts to use pollution abatement technology by the firms. Hence the MEC caused would be different.
- The administrative or implementation costs of imposing the indirect taxation measure may offset the benefits from the welfare losses prevented. Using indirect taxation as a deterrent or an incentive to reduce or internalise the externality could be rather cumbersome, tedious and administratively costly. Hence, the deadweight loss still persists despite intervention.

Nonetheless, the over-production that was deemed to be the failure resulting from the workings of the free market will be reduced with indirect taxation despite its shortcomings. However, this is under the condition that the post-intervention deadweight loss (if any) is not larger than the pre-intervention deadweight loss. Otherwise, 'government failure' could be said to have occurred.

### **Rules and Regulation/Legislation**

This category of measures refers to prescribed outcomes, actions or procedures that would have a direct influence on the transaction or output level the authorities consider socially optimal for the market. Very often, these are laws stating how something is to be done or actions to take to bring things under control.

These can take on various forms. Some examples are:

- minimum emission standards to improve air quality and to safeguard public health.

*'The authorities are making industrial firms - including steel mills - renovate facilities over the next few months in order to meet strict new pollution standards.'*

#### **Advantages**

- Rules and regulations (including quantity and/or price limits) are clear and simple to understand as well as easy to administer.
- Desired social outcome has a greater likelihood of being achieved as the market quantity (and hence allocation of resources) can be set by the government.

#### **Disadvantages**

- It incurs a compliance cost. The penalties for non-compliance must be sufficiently harsh and enforcement must be sufficiently frequent and rigorous for the regulation to be an efficient means to reduce external costs. This however, this may imply the use of additional scarce resources which may pose a strain on the efficient resource allocation in other markets. The

	<p>measure would be deemed to have failed if the deadweight loss created in other markets is greater than the welfare gains in the regulated market.</p> <ul style="list-style-type: none"> <li>• Furthermore, legal restrictions tend to be a rather blunt weapon. It may remove the incentive of the parties involved from making personal choices not to add to the external costs. Legal limits to consumption would also erode the influence of consumer sovereignty in the marketplace.</li> <li>• The exact socially desirable amount of the legal limit (eg. quota) is also difficult to ascertain due to the lack of information on the monetary value of MEC as well as the changing market conditions. Hence this makes the government unable to accurately ascertain the socially optimal level of output at any point in time and overtime. Sometimes it is easier to totally ban the sale of the product (i.e. setting the quota = zero). This however, is bound to create a deadweight loss to society.</li> </ul>	
d	<p>Do you think governments should introduce protectionist measures in circumstances such as those described in extract 1 and extract 2?</p> <p><u>Definition</u> Protectionism refers to the protection of home industries from foreign competition by the imposition of trade barriers on foreign products by the government.</p> <p><u>Thesis - Governments should introduce protectionist measures in circumstances such as those described in extract 1 and extract 2</u></p> <p><i>'Amid a slowdown in economic growth, the world's top commodities buyer is facing a supply glut that has sent local prices tumbling and <u>miners deep into the red</u>. Inventories of iron ore, coal and cotton are bulging at ports across the country and state granaries are overflowing.'</i></p> <p><i>'Unable to compete with China's low steel prices, steel producers in the U.S. such as U.S. Steel Corp. and Nucor Corp. are starting to seek political support for trade action such as tariff against China's steel. <u>This year U.S. Steel has laid off or issued layoff warnings to around 3,500 workers.</u>'</i></p> <p><i>'To help shield local markets, experts and traders said Beijing has employed a range of <u>non-tariff barriers</u> to curb imports of corn, cotton and distillers' dried grains.'</i></p> <p><u>To Protect Declining Industries</u></p> <p>Governments protect declining/'sunset' industries so as to allow them more time to make a gradual exit, in other words, to phase out gradually or to restructure to improve efficiencies.</p> <p><u>Evaluation</u></p> <p>Government protection is given particularly to those large declining industries which may find it difficult to contract quickly. A gradual decline will prevent widespread unemployment since they hire a large number of workers. During the protection period, these industries have to make the necessary adjustments eg.</p>	[8]

deployment of their workers who have been laid off, selling off its fixed assets etc so as to reduce the impact of their shut down. Restructuring of firms require some time and results maybe uncertain.

### To Prevent Dumping

*'The surge in China's exports of steel has sparked complaints of unfair subsidies, many of which tend to come from provincial governments. China's steel industry has denied it is being supported by Beijing.'*

*'Chief executives of leading American steel producers said Thursday they would testify later this month at a Congressional Steel Caucus hearing, a move that trade lawyers said is a prelude to launching at least one anti-dumping complaint with the International Trade Commission against China.'*

Dumping occurs when producers sell their goods overseas at very low prices (usually below its cost of production). This is made possible due to economies of large scale production or export subsidies given by their own government. In the short term, consumers benefit from the low prices of the foreign goods, but in the longer term, persistent undercutting of domestic prices will force the domestic industry out of business hence causing widespread unemployment. This also allows the foreign firm to establish itself as a monopoly and dominate the overseas market.

### Evaluation

Therefore assuming that the dumping is of a predatory nature, protection via tariffs on 'dumped' goods can be justified to prevent the long term exploitation of the consumer and to protect local firms from losing their competitiveness.

### **Anti- thesis - Governments should NOT introduce protectionist measures in circumstances such as those described in extract 1 and extract 2**

Volume of world trade, employment and incomes may fall. Protectionism brings about retaliation from countries whose exports have fallen. This leads to a reduction in the volume of world trade, employment and incomes. This may even result in worldwide depression.

Foreign producers may be more efficient than local producers. With protectionism, cheaper foreign goods are reduced in the home market. This leads to an increase in prices and cost of living. There will also be a smaller variety of goods available in the domestic market.

Home producers who do not face foreign competition may merge to earn monopoly profits. Consumers as a result, are exploited.

### **Conclusion and judgement**

Countries may lose out in the long run due to beggar-thy-neighbor effect.

Not advisable for governments for small and open economies; fostering a free and fair trading environment is more advantageous for economies that are trade dependent.

Level	Descriptor	Marks
L1	Lacking in economic analysis.	1 – 3
L2	One-sided answer or weak 2-sided answer <b>(max 4m)</b>  Well-developed answer that is able to explain whether protectionist measures should be introduced with the use of extract evidence.	4 - 6
E	For an evaluative assessment based on economic analysis	2
		<b>[ Total 30 marks ]</b>