

ECONOMICS

8823/01

Paper 1

17 September 2019

3 hours

Additional Materials: Answer Booklet

READ THESE INSTRUCTIONS FIRST

Answer **all** questions.

Answer Question 1 and Question 2 on **separate** booklets. You can ask for an additional booklet if you need more than one for a question.

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

For each Answer Booklet:

Write your name, Centre number and index number on the first page of all Answer Booklets that you hand in. Write clearly and use capital letters. For each booklet, use both sides of the paper.

Write dark blue or black pen. HB pencil may be used for graphs and diagrams only.

DO **NOT** WRITE ON ANY BARCODES.

Write the number of the question you are responding to in the first margin.

↓

Question	Part	
1	ai	
1	aii	

↑

If the question you are responding to also contains parts, for example 1a, write the question part in the second margin.

Do not tear out any part of the Answer Booklets.

All work must be handed in. If you have used any additional booklet, please insert it inside the first Answer Booklet of the respective question.

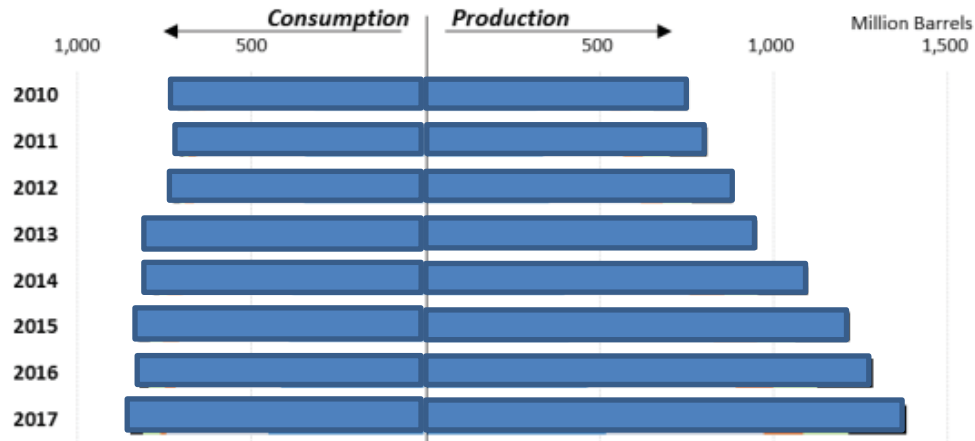


Answer **all** questions.

Question 1

Plastics and its impact

Figure 1: Consumption and Production of Natural Gas Liquids (NGLs)



Source: *U.S. Energy Information Administration*, 2018

Extract 1: Rise in bottled water

The demand for bottled drinks has contributed to the alarming increase in the demand for plastic packaging. The demand, equivalent to about 20,000 bottles being bought every second, is driven by an apparently great desire for bottled water and the spread of a western, urbanised “on the go” culture to China and the Asia Pacific region.

More than 480 billion plastic drinking bottles were sold in 2016 across the world, up from about 300 billion a decade ago. This could be due to a desire for healthy living and there are ongoing concerns about groundwater contamination and the quality of tap water, which all contribute to the increase in bottle water use.

Source: *The Guardian*, 28 June 2017

Extract 2: Investments in plastics plants in the US

In the US, fossil fuel and petrochemical companies are investing hundreds of billions of dollars to expand plastic production capacity. This includes new plastic “cracking” plants that will produce the raw material for plastic packaging.

The new plants – being built by corporations like Exxon Mobile Chemical and Shell Chemical – will help fuel a 40% rise in plastic production in the next decade, according to experts, exacerbating the plastic pollution crisis that scientist warn already risks “near permanent pollution of the earth.”

The huge investment in plastic production has been driven by the shale gas boom in the US, fuelled by the revolution in shale gas technologies such as advancements in fracking and horizontal drilling, to produce Natural Gas Liquids (NGLs), which is an essential raw material in the production of plastics.

Source: *The Guardian*, 26 December 2017

Extract 3: The use of bio-based packaging

Plastic packaging comprises of both non-recyclable and recyclable or bio-based packaging. Non-recyclable packaging generates pollution and uses Natural Gas Liquids (NGLs), as well as other non-renewable resources. When it is discarded, it creates waste that can disrupt ecosystems and sit for hundreds of years. On the other hand, bio-based packaging comes from renewable materials and can be recycled, offering an alternative to non-recyclable products.

United States Department of Agriculture (USDA) has implemented a product certification scheme for bio-based packaging. Companies with bio-based packaging voluntarily submit their product information in order to qualify for a “USDA Certified Bio-based Product” label. Similar to the effect of positive product differentiation provided by other USDA labels, such as “USDA certified organic”, qualifying for USDA’s bio-based label promotes the increased sale of products derived from renewable resources. This can help companies to create a larger, more loyal consumer base as well. Companies that cater to consumers’ sense of environmental responsibility have seen significant benefits in terms of their profits.

Source: *Medium.com*, 30 March 2017

Extract 4: Call for action to reduce harm of plastics

Environmental groups are demanding curbs on the production of plastic. Some argue that single-use plastic items should be banned.

EIA oceans campaigner Sarah Baulch called for global leadership and urgent action to tackle the problem. “Our marine wildlife is choking on an ever-growing tidal wave of plastics manufactured to be used once and almost instantly discarded, leaving a polluted legacy for our environment and future generations,” she said.

Source: *The Herald*, 10 December 2017

Extract 5: Consumers’ positive perception of bio-based packaging

Researchers found that many manufacturers and retailers are increasingly choosing drop-in bio-based packaging, which is chemically identical to the traditional packaging but made from renewable raw materials instead of Natural Gas Liquids (NGLs). Their research also shows that increasingly environmentally conscious consumers, too, prefer bio-based packaging over conventional packaging. This provides support for the likely success of encouraging consumption of bio-based packaging in dealing with the adverse impact of plastic packaging on the environment.

Since those materials are, however, not always easily distinguishable by consumers simply by the way they look or feel, the environmental benefits have to be communicated clearly by providing information, for example, on the renewable feedstock, bio-based content, or the reduction of greenhouse gas emissions.

Source: *European Bioplastics*, 29 January 2018

Extract 6: Excise tax on plastic packaging

Indonesia is the world's second-largest plastic waste producer, after China. It is estimated that each Indonesian individual consumes 700 plastic bags per year. This is why rivers are usually clogged with plastic and other trash, particularly in the bigger cities.

According to preliminary information from Indonesia's Finance Ministry, the excise tax will be imposed on all products wrapped in plastic packaging, including bottles, bags and sachets. However, lower rates may apply for those companies that focus on recycling activities and therefore cause less damage to the environment.

However, others claim that the new excise tax is not fair, and goes against a basic human right. In Indonesia's urban centers, people cannot drink water from the tap, while river water is highly polluted. As such, they are dependent on plastic-bottled water. Easy access to clean water (including a low sales price) is regarded a primary right of the people, and therefore some opponents of the excise tax request the government not to touch this segment.

Another issue is that plastic packaging has become a vital component in people's lives. Plastic is a cheap, relatively safe and long-lasting form of packaging for food products and beverages.

Business groups say the government should focus on the development of good public waste management systems that is accessible to everyone. It involves the collection, transportation, treatment and disposal of waste in public areas.

Source: *Indonesia Investments*, 25 July 2016

Questions

- (a) With reference to Figure 1, explain the likely change in price of Natural Gas Liquids (NGLs) from 2010 to 2017. [2]
- (b) (i) Using Extract 1, explain one demand factor that could account for the increase in consumption of plastic packaging. [2]
- (ii) Using Extract 2 and with the help of a diagram, analyse how the demand factor might impact the market for plastic packaging. [4]
- (c) Discuss how the product certification scheme in Extract 3 might incentivise firms to use bio-based packaging. [8]
- (d) Consumers in Indonesia's urban centers rely on bottled water as water from the tap is unfit for consumption due to the heavily polluted water sources.
- Provide an economic justification to why the price of bottled water may be a concern to the government. [2]
- (e) Explain one likely opportunity cost of installing a public waste management system. [2]
- (f) Extract 6 suggested developing good public waste management systems.
- Identify and explain the two characteristics of a 'public good' and comment on whether the public waste management system is considered a public good. [7]
- (g) (i) Explain the case for government intervention in the market for non-recyclable plastic packaging. [6]
- (ii) Discuss whether imposing an excise tax is the best policy to achieve allocative efficiency in the consumption of non-recyclable plastic packaging. [12]

[Total: 45]

Question 2**Issues in China and India****Table 1: Economic Growth in China and India (%)**

	2012	2013	2014	2015	2016	2017
India	5.5	6.4	7.4	8.0	8.2	7.2
China	7.9	7.8	7.3	6.9	6.7	6.8

Source: World Bank

Table 2: Key Indicators in China and India (2017)

	China	India
GDP per capita (PPP)	15254.0	6516.2
Life expectancy at birth, total (years)	76.3	68.6
*PM10 (micrograms per cubic meter)	412.0	499.0

*PM10 refers to harmful particles less than 10 microns in diameter found in the air

Source: Trading Economics

Extract 7: Implementation of the new Goods and Services Tax in India

During a special parliament assembly, the Prime Minister of India launched the Goods and Services Tax (GST) where goods and services will be taxed under four basic rates - 5%, 12%, 18% and 28%. Prior to the implementation of the GST, firms having business interests in seven states in India would have to deal with seven different tax authorities along with seven different tax rates in value added tax paid by them, making it difficult to do business in India.

It is estimated that the GST is going to play an intricate role in boosting the country's GDP and reducing the fiscal deficit, thereby creating a win-win situation both for the government and the firms.

Source: *Forbes*, 10 July 2017**Extract 8: What's ailing the Indian economy and how to fix it?**

For the past few weeks, the slowdown of the Indian economy has made headlines, forcing the government to consider a revival plan. The growth of the economy has slowed to a four-year low because of weakening consumption demand and a near stalling of investment. Much of this deterioration has been blamed on the rollout of the goods and services tax.

Pushing the Reserve Bank of India to reduce interest rates or the government to cut taxes can bring relief to these ailing sectors of the economy. However, the most critical short term priority is to restore confidence among businesses, which have increasingly grown wary of policy surprises and shocks.

Source: *Hindustan Times*, 24 September 2017

Extract 9: Chinese growth slips to slowest pace for 26 years

China's economy slowed further last year to expand at its weakest pace for quarter of a century, with warnings that it risks losing further momentum in 2017 as Donald Trump's presidency creates new challenges for China. The world's second-largest economy grew 6.7% last year, meeting Beijing's target range of 6.5 – 7% but was the slowest growth since 1990.

Forecasters see the outlook for global growth as particularly uncertain, with a change of administration in the US, key elections in the Eurozone and the UK embarking on Brexit negotiations. With China still struggling to shift its economy away from a reliance on investment and exports to consumption, any slowdown in global trade will be keenly felt in the country.

Trump has pledged to impose high taxes on imports from China and to brand the country as a currency manipulator. The president-elect has long maintained that the People's Bank of China has been devaluing its currency to make its exports more competitive in overseas markets.

Source: *The Guardian*, 20 January 2017

Extract 10: The China miracle isn't over – it has entered its second phase

For the last six years, China has averaged just 6 – 9% growth, leading some economists to declare the end of the China miracle. However, they are wrong, China has simply entered her second phase.

China is the fastest-growing consumer market in the world. Chinese shoppers are powering the growth of China and the global economy and their power will only grow in the next decade. No one could have predicted even seven years ago that major brands from Western multinational corporations to small and medium-sized enterprises would add special days such as the 11-11 (Singles' Day) and the Spring Festival (Chinese New Year Golden Week) to their holiday promotions calendar. During the last National Day Golden Week, Chinese shoppers on holiday in Japan were so numerous and free-spending that they actually contributed a significant amount to Japan's GDP.

Unlike some countries in the West who want to bring low-end, low-value manufacturing back to the country, China is moving beyond low-end export and infrastructure investment to advanced, technology-driven, high value-added production. The country had started to invest heavily in tech research and development, and through companies like Huawei, China is beginning to export advanced technologies to markets around the world.

Source: *Forbes*, 30 March 2017

Extract 11: OECD highly praises structural reforms of the Chinese government

China will deepen structural reforms while maintaining steady economic growth in 2018 as top leaders seek to prevent a growing fiscal debt which might destabilise the economy. An evaluation report released by the Organisation for Economic Cooperation and Development (OECD) has highly praised China's structural reform. Many countries slowed their reforms after the international financial crisis, but China still pressed ahead with tax cuts and improved education and training, alongside other efforts in structural reforms. President Xi Jinping had said at a party congress that China will be striving for sustainable growth and these reforms are also expected to help reduce the emissions of major pollutants.

Sources: *The State Council of the People's Republic of China*, accessed 7 August 2019, and *Reuters*, 8 December 2017

Questions

- (a) Compare the economic growth rates between China and India from 2012 to 2016. [2]
- (b) With reference to Table 1, discuss the extent to which the data reflects that China has a higher standard of living than India. [8]
- (c) Using AD/AS diagrams, discuss the likely effects of the implementation of the GST on the economy of India. [8]
- (d) (i) Extract 8 mentioned that reducing interest rates can 'bring relief to these ailing sectors of the economy'.

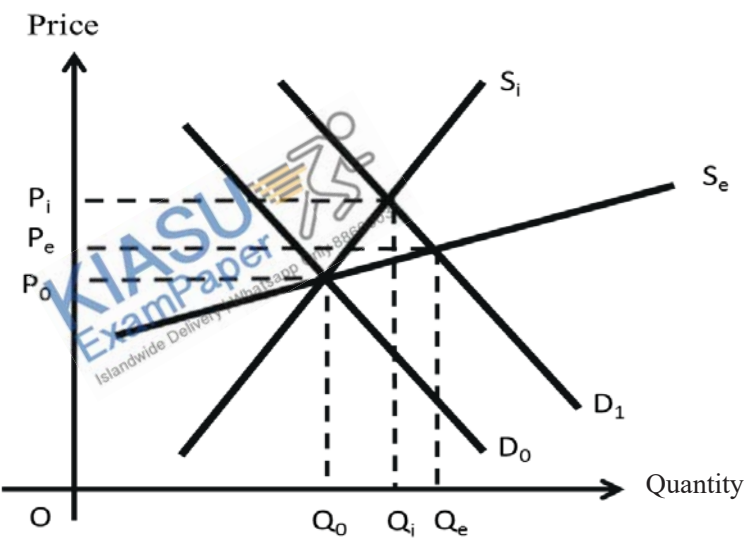
Explain how a fall in interest rate can 'bring relief to these ailing sectors of the economy'. [2]
- (ii) Explain **two** factors that will determine the impact of the above approach on the national income of India. [4]
- (e) Explain how the devaluation of the Chinese Yuan will affect net exports of China. [4]
- (f) Explain **two** reasons why China is shifting her economy away from a reliance on investment and exports to consumption and **one** possible unintended consequence that might arise. [6]
- (g) 'Many countries slowed their reforms after the international financial crisis, but China still pressed ahead with tax cuts and improved education and training.'

Discuss whether supply-side policy through tax cuts is the most appropriate policy to achieve sustainable growth in China. [11]

[Total: 45]

RVHS H1 Prelim Exams – Solutions

[CSQ1]

(a)		With reference to Figure 1, explain the likely change in price of Natural Gas Liquids (NGLs) from 2010 to 2017.	[2]
		<p>The increase in production exceeds the increase in consumption of NGLs OR the increase in quantity supplied exceeds increase in quantity demanded at original price level OR the increase in supply exceeds increase in demand. [1]</p> <p>This led to the decrease in price of NGLs OR this causes a downward pressure on prices of NGLs.[1]</p>	
(b)	(i)	Using Extract 1, explain one demand factor that could account for the increase in consumption of plastic packaging.	[2]
		<p>As mentioned in Extract 1, there is a great desire for bottled water and there is a spread of a western, urbanised “on the go” culture OR there is a desire for healthy living and growing concerns about groundwater contamination, resulting in a shift of taste and preferences towards bottled water.[1: Evid + determinant]</p> <p>Since plastic packaging is a factor input used in the production of bottled water, an increase in demand for bottled water would lead to an increase in derived demand for plastic packaging OR an increase in demand for bottled water would lead to an increase in derived demand for plastic packaging. [1]</p>	
(b)	(ii)	Using Extract 2 and with the help of a diagram, analyse how the demand factor might impact the market for plastic packaging.	[4]
		<p>As mentioned in part bi), a rise in demand for plastic packaging is represented by a rightward shift from D_0 to D_1 as shown in figure 1. This will lead to an increase in equilibrium price from P_0 to P_i and increase in equilibrium quantity from Q_0 to Q_i. [1]</p>  <p>Fig1: Market for plastic packaging</p>	

		<p>1 mk for diagram (If student just drew the increase in DD and one SS curve without elasticity with full labelling and reference to diagram, the mark can be awarded)</p> <p>The magnitude of the increase in price and quantity will be dependent on the price elasticity of supply. Supply is likely to be price elastic in the long run due to availability of space capacity as a result of the investment in new plastic “cracking” plants which would fuel a 40% rise in plastic production in the next decade as mentioned in extract 2. [1]</p> <p>There would be a larger increase in quantity from Q_0 to Q_e when supply is relatively more price elastic (S_e), as compared to the increase in quantity from Q_0 to Q_i when supply is relatively more price inelastic (S_i). There would be smaller increase in price from P_0 to P_e when supply is relatively more price elastic (S_e), as compared to the increase in price from P_0 to P_i when supply is relatively more price inelastic (S_i).[1]</p> <p>(If student only drew <i>one</i> supply curve e.g. S_e but wrote that this is a smaller price increase and larger increase in qty in the long run, full credit can be awarded for the last mark)</p>	
(c)		Discuss how the product certification scheme in Extract 3 might incentivise firms to use bio-based packaging.	[8]
		<p>According to Extract 3, consumers’ sense of environmental responsibility have benefited firms. Firms might be incentivised to use bio-based packaging as it increases total revenue i.e. price multiplied by quantity via its impact on demand and price elasticity of demand (PED).</p> <p><u>Affects DD:</u> This sense of environmental responsibility would have could have led to a change in taste and preference towards products which uses bio-based packaging. Hence, this would cause consumers to increase the demand for these products which increases its equilibrium price and quantity. Hence, firms would be incentivise to use the packaging as it increases total revenue.</p> <p><u>Affects PED:</u> Since there might be many firms selling similar products, the demand for a firm’s product might be relatively price elastic. However, by using bio-based packaging and getting it certified by USDA as mentioned in Extract 3, the firms engages product development which created a real difference. This includes an improvement in the feature of its product through the quality of its packaging.</p> <p>Hence, firms would be able to reduce the PED of its products by reducing the degree of substitutability. As a result, firms would able to increase price to increase total revenue OR enabling them to enjoy an increase in total revenue even without the need to lower price.</p> <p><u>Evaluation:</u> Even though the bio-based packaging appeals to those with a sense of environmental responsibility, it is less likely to be impactful as compared to the USDA certified organic label. This might because consumers might not regard</p>	

		<p>the bio-based packaging as a significant improvement in the feature of the product as compared organic products. This might not significantly reduce the degree of substitutability of the products that use bio-based packaging. Hence, it might not incentivise producers enough to switch to the new packaging.</p> <table><tr><th>Level</th><th>Description</th><th>Marks</th></tr><tr><td>L2</td><td>A developed and balanced discussion on the various ways in which this scheme might incentivise firms to use bio-based packaging.</td><td>4-6</td></tr><tr><td>L1</td><td>A developed one-sided response on one way in which this scheme might incentivise firms to use bio-based packaging. OR An undeveloped discussion on the various ways in which this scheme might incentivise firms to use bio-based packaging.</td><td>1-3</td></tr></table> <p>In addition, up to a further 2 marks for valid evaluative comment. This should focus on the situation(s) in which this scheme might not incentivise firms to use bio-based packaging.</p>	Level	Description	Marks	L2	A developed and balanced discussion on the various ways in which this scheme might incentivise firms to use bio-based packaging.	4-6	L1	A developed one-sided response on one way in which this scheme might incentivise firms to use bio-based packaging. OR An undeveloped discussion on the various ways in which this scheme might incentivise firms to use bio-based packaging.	1-3	In
Level	Description	Marks										
L2	A developed and balanced discussion on the various ways in which this scheme might incentivise firms to use bio-based packaging.	4-6										
L1	A developed one-sided response on one way in which this scheme might incentivise firms to use bio-based packaging. OR An undeveloped discussion on the various ways in which this scheme might incentivise firms to use bio-based packaging.	1-3										
(d)	<p>Consumers in Indonesia’s urban centers rely on bottled water as water from the tap is unfit for consumption due to the heavily polluted water source.</p> <p>Provide an economic justification to why price of bottled water may be a concern to the government.</p>	[2]										
	<p>The price of bottled water may be a concern to the government due to its microeconomic objective of promoting equity. Clean drinking water is an essential good for people in Indonesia, as water from the tap is unfit for consumption. Thus, should price of bottled water be too high, the lower-income group may not be able to afford bottled water, thus losing accessibility to this essential good. This worsens inequity in the economy.</p>											
(e)	<p>Explain one likely opportunity cost of installing a public waste management system.</p>	[2]										
	<p>Opportunity cost is the benefit of the next best alternative forgone.</p> <p>The opportunity cost is the improved education infrastructure that could have been built [1] had the funds been channelled into education [1] instead of installing a public waste management system.</p>											

(f)	<p>Extract 6 suggested developing a good public waste management systems.</p> <p>Identify and explain the two characteristics of a ‘public good’ and comment on whether the public waste management system is considered a public good.</p>	[7]
	<p><u>Identify and explain the two characteristics of a ‘public good’:</u></p> <p>A public good is a good or service that has the characteristics of non-excludability and non-rivalry in consumption. Non-excludability means it is impossible or prohibitively expensive to exclude any non-payers from using the good or service. Non-rivalry means the consumption of the good by one does not diminish the amount available for consumption by others.</p> <p><u>Comment on whether the public waste management system is a public good</u></p> <p>The public waste management system is not a public good as it is non-excludable and rivalrous in consumption. It is non-excludable in consumption as it is not possible to exclude non-payers such as tourists from throwing their rubbish into the waste disposal bins when the system is in place. It is rival in consumption as the bins/ collection trucks have limited capacity to collect waste. Hence the usage of the bins by one resident would diminish the amount of space in the bins for other residents to throw their waste.</p>	
(g)	(i) Explain the case for government intervention in the market for non-recyclable plastic packaging.	[6]
	<p>In the course of production of non-recyclable plastic packaging, costs are generated, such as private costs. The Marginal Private Cost (MPC) is the additional costs incurred by producers when producing one more unit of clothing which includes workers’ wages, rent etc.</p> <p>In addition, external costs are also generated, in the form of negative externality. Negative externality is the health cost associated with consuming water from plastic-polluted rivers and the lowered standard of living from living in a poor physical environment contributed by the plastic pollution. This health cost is borne, not by consumers or producers themselves, but by residents living along the rivers, and they are not compensated for the harm caused. [1]</p> <p>Since $MSC = MPC + MEC$, the presence of negative externalities causes MSC to be higher than MPC / a divergence between MPC and MSC.[1] Assuming there is no positive externalities (MEB=0) i.e. MPB=MSB, the market for non-recyclable plastic packaging can be represented in the figure below.</p>	

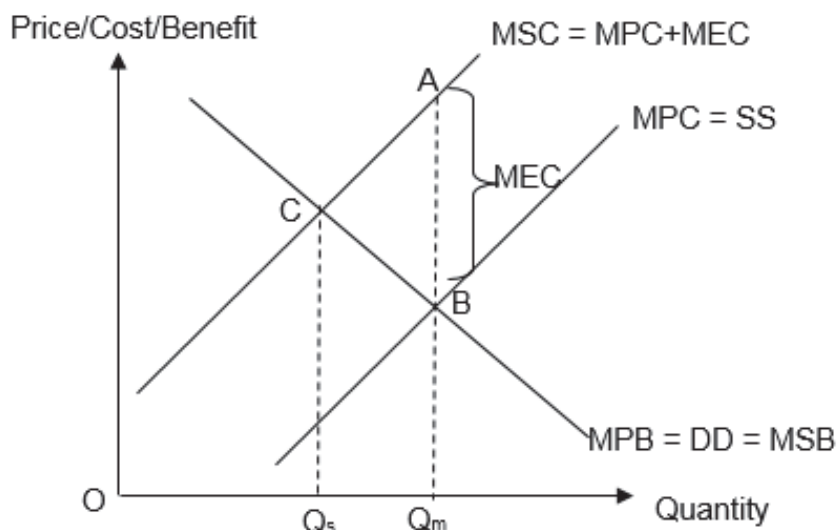


Fig 1: Market for non-recyclable plastic packaging

Quality of diagram drawn [2]

With reference to Figure 1, when left to the free market, the **consumption of the non-recyclable plastic packaging occurs at Q_m , where $MPB=MPC$ (or $DD=SS$)**, since individuals only consider their private cost and benefit in decision making. They do not take into account the external costs imposed on third parties (MEC). However, the **socially optimal level of output is Q_s , given by the intersection of MSB and MSC , since society's welfare is maximised when $MSB=MSC$.** [1]

Given that $Q_m > Q_s$, there is an **overconsumption of non-recyclable plastic packaging [1]**, i.e. too much of resources are allocated to produce it.

OR

This results in **deadweight loss given by area ABC.[1]** Societal welfare can be increased if consumption falls from Q_m to Q_s .

(g)	(ii)	Discuss whether imposing an excise tax is the best policy to achieve allocative efficiency in the consumption of non-recyclable plastic packaging.	[12]
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Due to the presence of negative externalities as explained in part h (i), consumers, there will be an over-consumption of non-recyclable plastic packaging, beyond the socially optimal level of consumption. Thus, government intervention is necessary to reduce consumption to achieve an efficient allocation of resources.

Policy Option 1: Excise tax

As mentioned in extract 6, the government can impose an excise tax per unit on firms that uses non-recyclable plastic packaging for their products. This translates to a **tax imposed on each unit that is equivalent to MEC.** This would **increase the cost of production to the firms** that uses plastic packaging for their products.

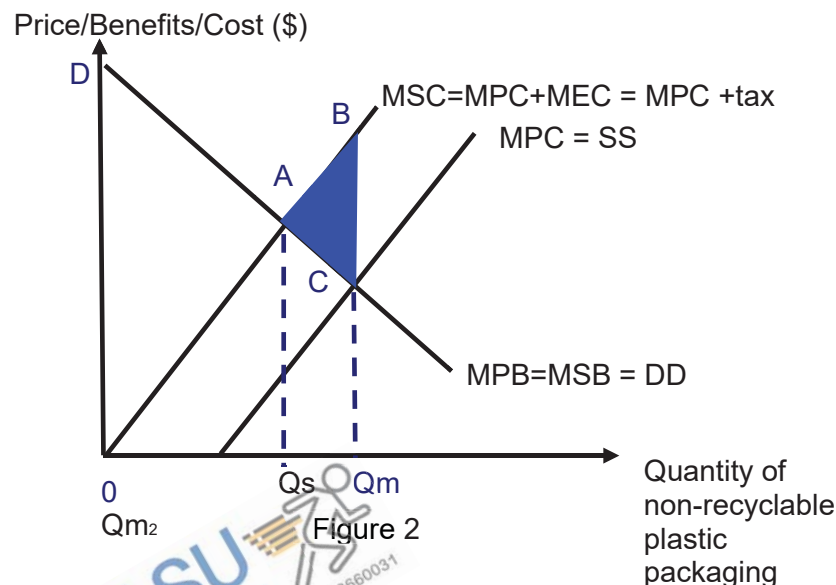
With reference to figure 2, This shifts the **MPC upwards, by the extent of MEC, to coincide with MSC**. This has the effect of **internalising the external cost** on third parties. This causes producers **to decrease production of products with plastic packaging from Q_m to Q_s** . As a result, consumption of plastic packaging would also decrease from Q_m to Q_s . Since non-recyclable plastic packaging is a subset of plastic packaging, this tax would reduce consumption of non-recyclable plastic packaging.

However, this may not be effective as it is **difficult to calculate the exact amount of MEC**. Some of the external costs are difficult to quantify in monetary terms, for example, harm caused to marine wildlife (extract 3). Hence it is **difficult to calculate the exact amount of the indirect tax to charge to reduce the negative externalities**. On one hand, **too low a tax will be ineffective in curbing overconsumption**. On the other hand, **too high a tax will still result in an inefficient allocation of resources**.

Choose any 2 of the below:

Policy option 2: Ban

With reference to **Extract 4**, the government may also implement a **ban on non recyclable plastic packaging**. This would **effectively reduce market output significantly to $Q = 0$** , where the market output is now at Q_{m_2} , with reference to the figure below. This is effective if the degree of externality is very large, such that the socially optimal level of output is close to zero, such that reducing the market output to 0 brings it close to allocative efficiency.



However, it is **not effective if the degree of negative externality is not large**; imposing a ban may actually contribute to greater allocative inefficiency. As shown in figure 2 below, **imposition of the ban may lead to a welfare loss of $DA0 - ABC$ when market output falls from Q_m to 0**. This welfare loss after the imposition of the ban is **bigger than ABC , the welfare loss incurred before the imposition of the ban**.

Furthermore, this may not be effective as it is **difficult to monitor compliance and enforcement**, due to the wide availability of plastics production plants across countries. On a related note, attempting to monitoring compliance and

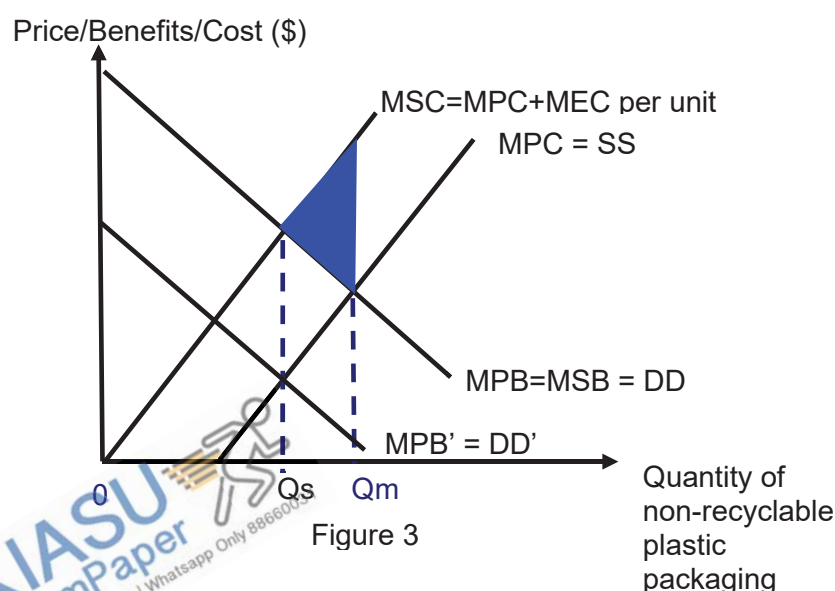
enforcement entails high cost. Hence, there is also opportunity cost of government funds incurred as the amount of public funds channelled for monitoring and enforcement could not be allocated to other purposes such as improving transport and communication facilities and building more educational and healthcare facilities.

Policy option 3: Moral suasion: promote consumption of bio-based packaging by consumers

The government can also use **moral suasion to encourage consumers to consume products wrapped in bio-based packaging**, as suggested in **extract 5**. Since there are increasingly environmentally conscious consumers who prefer bio-based packaging, the government **may further encourage these consumers through advertisements and campaigns to consume more of bio-based packaging**, by tapping on their environmental responsibility and preference for bio-based packaging. This would have the **effect of reducing MPB of non-recyclable plastic packaging from MPB to MPB'** as shown in the figure below, such that the market output **increases to reach the socially optimal level of output of Q_s** , thus achieving allocative efficiency.

However, its effectiveness depends on the **recipients' responses to these messages**. **It is difficult to change the habit of consumers**, especially those who do not prefer bio-based packaging in the first place, since plastic packaging is used frequently in our everyday lives (extract 6).

Secondly, such a policy takes time and is deemed as a long term approach that will only correct the market failure in the long run.



Evaluation:

Overall, whether excise tax is the best policy depends on the **root cause** of the problem. If the **root cause of the overconsumption of plastic packaging is the reliance on bottled water as mentioned in extract 1 and 6**, then excise tax may not be the best policy as it does not reduce reliance on bottled

water. Instead, the government should try to solve the root cause of the problem, which is to reduce reliance on bottled water by making tap water fit for consumption. This could include cleaning up of the polluted water bodies (extract 6). This would shift the taste and preferences away from bottled water towards tap water, leading to a fall in consumption of bottled water, and improving allocative efficiency.

Level	Description	Marks
L3	<p>Well-developed explanation (i.e. with at least one limitation) of the effectiveness of at least two policy options(excise tax and one other policy) in promoting allocative efficiency, with use of case study evidence and diagrammatic analysis</p> <p><i>Maximum of 6 marks will be awarded for 2 well-explained policies with no limitations.</i></p>	6-9
L2	<p>A well-developed one-sided explanation of how the excise tax can promote allocative efficiency, with one limitation, with use of case study evidence and diagrammatic analysis.</p> <p><i>Maximum of 5 marks will be awarded for one well-developed policy + its limitation.</i></p> <p>OR</p> <p>An undeveloped explanation of how two policy options(excise tax and one other policy) can promote allocative efficiency, with little use of case study evidence and/or diagrammatic analysis.</p>	3-5
L1	Smattering of valid points.	1-2

In addition, up to a **further 3 marks** for valid evaluative comment. This should focus on the effectiveness of policy options.



[CSQ 2]**(a) Compare the economic growth rates between China and India from 2012 to 2016. [2]**

China's economic growth rates were higher than India in 2012 and 2013 [1] and India's economic growth rates were higher than China from 2014 to 2016 [1].

Note: Both countries registered positive growth rates [1] also acceptable.

(b) With reference to Table 1, discuss the extent to which the data reflects that China has a higher standard of living than India. [8]

Standard of living is a broad concept that refers to the level of well-being of a typical individual within the country. It encompasses both the material and non-material aspects of life.

GDP per capita at PPP measures the value of the final G+S that is produced by an average resident of the country after taking into account the cost of living in the country & purchasing power of the currency.

As Table 1 shows a higher GDP per capital at PPP in China, this means that the consumers in China have a higher ability to consume goods and services as compared to India. Also, Table 1 shows that life expectancy is longer in China than in India, this could be attributed to better quality of healthcare in China. Hence, since the people in China can consume more and better goods and services, material standard of living is higher in China. PM10 is lower in China which means that the quality of air in China is better than in India, indicating a higher non-material standard of living in China. Together, it can be concluded that both non-material and material standard of living in China is higher than in India.

However, to have a more accurate assessment, other information on material and non-material aspect of SOL are needed. For instance, information on Gini coefficients of the 2 countries were not given. This is because GDP does not give indications of income disparity within a country, making it difficult to compare standard of living between countries. Even though China has a higher GDP per capita at PPP than India, the level of income inequality could be worse than India. This suggest that bulk of the national income is concentrated in the hands of the rich minority and as such, standard of living in China will not be higher.

Evaluation

However, there could be problems with data collection. This is because real GDP per capita at PPP does not record the output of certain goods and services and the size of this non-monetized sector varies from country to country. For instance, India may have a larger subsistence agriculture sector than China and these sectors are usually not recorded in the national income, thereby understating the level of national income in the country. As such, the difference in the size of such non-monetized sectors will cause the comparison of living standards to be inaccurate. Therefore, it is to a large extent that the data reflects a higher standard of living in China than in India and more information is required to corroborate a more comprehensive assessment of standard of living between the two countries.

L2	<p>A developed discussion of how the data reflects a higher standard of living in China than in India</p> <p>Developed discussion should include</p> <ul style="list-style-type: none"> • Material and non-material SOL • Either 1 of the following points <ul style="list-style-type: none"> ○ Limitations of using NY figures to measure SOL ○ Measurement problems ○ Other information required and why 	4-6
L1	<p>A developed one-sided response on how data reflects a higher standard of living in China than in India</p> <p>OR</p> <p>An undeveloped discussion on how the data reflects a higher standard of living in China than in India.</p>	1-3

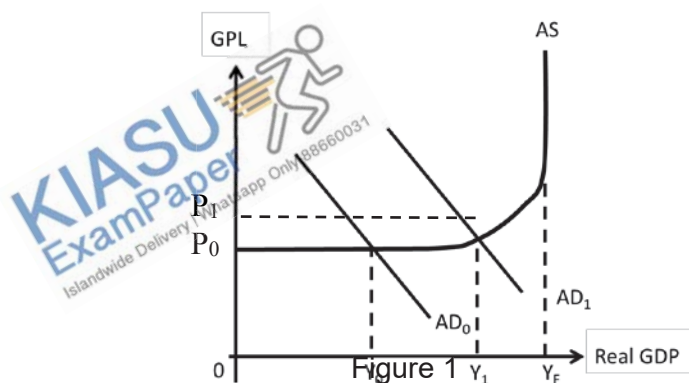
In addition, up to a **further 2 marks** for valid evaluative comment. This should focus on assessing the extent which the data reflects that standard of living is higher China than in India.

(c) Using AD/AS diagrams, discuss the likely effects of the implementation of the GST on the economy of India. [8]

The effects of the implementation of the GST on the economy will be examined based on the macroeconomic objectives of the government – economic growth, price stability and level of unemployment.

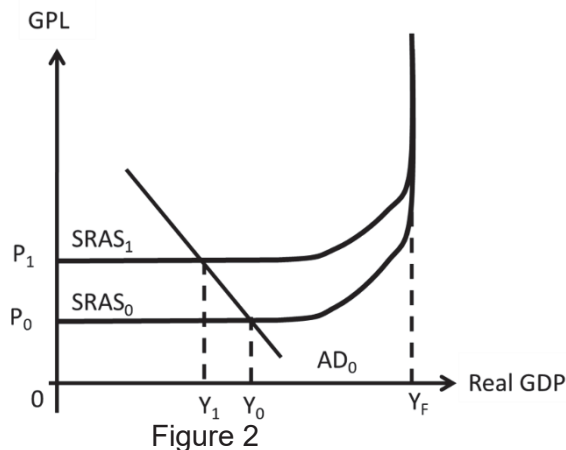
Extract 1 mentioned that there were different tax levels in different states in India prior to the implementation of the GST. As such, the implementation of the GST will help to reduce red tapes and hence make it easier for firms to invest and hence investment expenditure will increase. AD will increase, shifting rightwards from AD_0 to AD_1 in Figure 1, causing a multiple change in real national income via the multiplier effect and general price level increase from P_0 to P_1 . The increase in production of goods and services will also increase the derived demand for labour, thereby reducing unemployment level.

Note to marker: [analysis should follow diagram. Mark accordingly to what students write for GPL]



However, the implementation of the GST may increase the cost of production for the firms assuming that the GST is lower than the previous tax levels. As such SRAS will decrease from

SRAS₀ to SRAS₁ in Figure 2. Prices will increase from P_0 to P_1 , real national income will fall from Y_0 to Y_1 and there will also be a rise in unemployment level.



Evaluation (any 1 of the points below)

① *The extent of the increase in national income brought about by an increase in investment depends on the state of the economy. If the economy is nearing full employment, there will be no/ insignificant change in real national income and instead, demand-pull inflation may set in due to the increase in competition for scarce resources, thereby bringing about negative effects on the economy.*

② *It is seen from Table 1 that the growth of the Indian economy has slowed to a four-year low in 2017, which implied that GDP were rising albeit at a slower rate. Hence, it can be deduced that fall in real national income due to an increase in cost of production was smaller than the increase in real national income due to an increase in investment.*

L2	<p>A developed discussion on how the implementation of the GST will impact the Indian economy</p> <p>Developed discussion should include</p> <ul style="list-style-type: none"> • Positive and negative effects of the GST on the 2 out of the 3 macro goals of the government • 2 well-explained diagrams (one shows an increase in AD whereas the other shows a decrease in SRAS) 	4-6
L1	<p>A developed one-sided response on how the implementation of the GST will affect the various macro objectives of the government in India.</p> <p>OR</p> <p>An undeveloped discussion on how the implementation of the GST will affect the various macro objectives of the government in India.</p>	1-3

In addition, up to a **further 2 marks** for valid evaluative comment. This should focus on weighing the effects of how the implementation of the GST might impact the Indian economy positively or negatively.

(di) Extract 2 mentioned that reducing interest rates can 'bring relief to these ailing sectors of the economy'.

Explain how a fall in interest rate can 'bring relief to these ailing sectors of the economy'. [2]

A decrease in interest rate will decrease the cost of borrowing [0.5], especially for big-ticket items [0.5] such as cars. As such, consumption expenditure may rise. Similarly, the projects which were previously unviable now becomes viable [0.5] since interest rate is now lower than the expected rate of returns [0.5]. As such investment expenditure will rise. As a result, the increase in AD will cause a multiple increase in the national income of India.

Hence, the fall in interest rate can bring relief to the ailing domestic sectors of the economy.

(dii) Explain two factors that will determine the impact of the above approach on the national income of India. [4]

The extent of the cut in interest rate can determine the impact on the national income of India. If the cut in interest rate is significant, then the cost of borrowing will fall significantly, and this will motivate the consumers and producers to consume and invest more. With a greater increase in AD, the change in national income will also be greater.

The size of multiplier can also determine the impact on the national income. Given an increase in AD due to a fall in interest rate, the change in national income will result in a multiple increase in income. For example, if the size of k is small, possibly due to a large marginal propensity to save or import, then the multiple increase in national income will be smaller.

Another possible factor could be the level of market sentiments. Although the cost of borrowing might have been reduced, consumers and investors might remain pessimistic about the situation and do not consume and invest. This will result in a smaller than expected increase in the consumption and investment expenditure, leading to a smaller than expected increase in national income of India.

(e) Explain how the devaluation of the Chinese Yuan will affect net exports in China. [4]

The devaluation of the Chinese Yuan will cause the price of exports in foreign currency to decrease [1] while the price of imports in domestic currency to increase [1]. Assuming Marshall-Lerner Condition (MLC) holds i.e. $PED_x + PED_m > 1$ [1], net exports will increase [1].

(f) Explain two reasons why China is shifting her economy away from a reliance on investment and exports to consumption and one possible unintended consequence that might arise. [6]

If the Chinese economy is too dependent on exports and investment, the country will be vulnerable to external shocks. Should anything happen to the other countries, China will risk being significantly affected, thereby causing AD to fall by a large extent, NY and unemployment will be impacted on a larger scale as well. Hence, there is a need to shift away from a reliance on investment and exports to the domestic consumption of China, so that she is less susceptible to any external shock.

Secondly, as highlighted in Extract 3, China is the fastest growing consumer market in the world and they are expected to power the next phase of growth for China. Given this immense amount of potential that the consumption sector have for China, they should capitalize on it and seek to devote more resources towards the development of this sector and produce more goods and services for the consumers in China. The higher level of domestic consumption might be able to help the economy withstand any external shock more effectively. Furthermore, the government can more effectively target policies towards domestic

consumers as compared to boosting the consumption of the foreigners, which will be more difficult to manage.

The unintended consequence is such that the fall in investment will limit the increase in the quantity/ quality of capital in the economy, thereby limiting potential growth.

(g) 'Many countries slowed their reforms after the international financial crisis, but China still pressed ahead with tax cuts and improved education and training.'

Discuss whether supply-side policy through tax cuts is the most appropriate policy to achieve sustainable growth in China. [11]

Sustainable growth indicates a rate of growth that can be maintained without creating other significant economic problems (e.g. resource depletion, environmental degradation, and rapidly rising prices), particularly for future generations. This includes achieving sustained economic growth by increasing the AD alongside the LRAS.

Explain how tax cuts achieve sustainable growth

Cutting corporate income tax, after-tax profits will increase and firms will have more funds available for investment and to undertake R&D. Cutting personal income tax will increase the attractiveness for the existing workforce to work longer hours given the higher disposable income. It will also attract more people such as the housewives and retirees to re-enter the workforce.

These measures will increase the quantity of labour as well as the quality and quantity of capital which will bring about an increase in the productive capacity of the economy, allowing the economy to achieve potential growth.

The increase in after-tax profits from the fall in corporate income tax also meant that investment expenditure increase and AD will increase, thereby leading to actual growth. In addition, the cut in corporate income tax may incentivise firms to invest more in green technology which help to reduce the emissions of major pollutants (Ext 5).

Together, the increase in actual growth, potential growth and the reduction in the emissions of major pollutants will enable China to achieve sustainable growth.

Limitations of tax cuts (any one of the following)

- However, Ext 4 mentioned that China had only averaged 6-9% of growth in the past six years and many have a pessimistic outlook on the economy. As such, firms may expect to sell less and thus unwilling to invest despite the cut in corporate income tax.
- Moreover, reducing corporate tax may result in firms paying higher dividends rather than undertaking more investment.
- Also, personal income tax cuts do not guarantee that people will actually work more since they may find themselves able to afford the same amount of goods and services with fewer hours of work and hence respond by working less. As such, the long-term improvement in the productive capacity of the economy may not materialise and sustainable growth cannot be achieved.

Explain how another policy may achieve sustainable growth - Improved education and training

The government may also provide education, training programmes and schemes to increase the quality of the workforce. This increase in the quality of labour will increase the productive capacity of the economy, thereby achieving potential growth.

The increase in government expenditure will also increase AD, thus achieving actual growth.

Together, the pursue of potential growth and actual growth through improved education and training will lead to sustained growth.

Limitation of improved education and training (any 1 of the following)

- Effectiveness of improving education and training hinges largely on the attitude and aptitude of workers. The less educated or older workers may not have the ability to learn new skills and the more educated ones may not be receptive towards the need for re-training.
- Ext 5 suggests that China was having a fiscal deficit. If the government has to borrow to finance the expenditure on education, the demand for loanable funds will increase and may crowd out private investment and consumption, thereby affecting actual growth.

Evaluation

The breadth of the notion of sustainable growth warrants a multi-pronged approach for China to successfully achieve sustainable growth. For instance, the cut in corporate income tax does not guarantee that firms will invest more in greener technology and this means that the government may require other micro policies such as quotas, Pigouvian tax or regulations to curb pollution level in order to achieve sustainable growth. Besides, the increase in the use of higher quality of capital due to tax cuts may lead to the unintended consequence of higher structural unemployment. Improved education and training will ensure that the workforce are able to tap on the capital to achieve potential growth. As such, the different features of the various policy will complement each other in order for China to successfully achieve sustainable growth.

L3	A developed discussion about the policies which can bring about sustainable growth in China. Developed discussion should include: <ul style="list-style-type: none"> • How tax cuts & another policy work to increase actual and potential growth • How tax cuts may reduce emissions of pollutants thereby leading to sustainable growth • Limitation of the policies 	6-9
L2	A developed one-sided explanation on how the policies work to bring about sustainable growth in China. OR An undeveloped discussion on how the policies work to bring about sustainable growth in China	3-5
L1	An Undeveloped explanation about the structural reforms in China	1-2

In addition, up to a **further 3 marks** for valid evaluative comment. This should focus on assessing which is the most appropriate policy to achieve sustainable growth in China.

