2016 Prelims H1 Case Study Question 1

The Market for Steel

Suggested Answers

(a)	**Using Tables 1 and 2, compare the relative changes in China's crude steel production and consumption from 2011-2014.**	**[2]**	*Tables 1-2*

Similarity: Both crude steel production and consumption increased from 2011 to 2014.

Difference: Crude steel production increased more relative to consumption (17.2% compared to 10.2% respectively).

(b)	**Using Extracts 1 and 2, explain one demand factor and one supply factor that could support the trend in global steel prices from 2011 to 2014.**	**[4]**	*Extracts 1-2*

Identify trend: Global steel prices were generally decreasing from 2011 to 2014.

Demand factor: Demand for steel decreased due to fewer metal pipe purchases in lieu of a weakening of oil and gas markets (extract 1)

Supply factor: Subsidies from government increased the willingness and ability for steel producers to increase supply, OR China expanding steel production in Africa

Combining both factors (students may draw graph), overall price for steel will fall.

Mark scheme:
* *1 mark for identifying falling global steel prices*
* *1 mark for explaining why demand fell*
* *1 mark for explaining why supply increased*
* *1 mark for on how combined effect of DD and SS changes lead to falling global steel prices.*

(c)	**Explain how the "current global glut" would affect the price elasticity of supply for metal.**	**[2]**	*Extract 2*

"Current global glut" refers to a surplus or excess supply in production of metal. This would mean that there is an increase in spare capacity of metals, leading to a supply which is more price elastic as quantity supplied would be more responsive to a change in price.

Full 2 marks for answers which show accurate conceptual knowledge of price elasticity of supply.

(d)	**Explain the opportunity cost of Anglo American's decision to sell its niobium mining business.**	**[3]**	*Extract 1*

Define opportunity cost: value of the next best alternative forgone

Identify & explain the opportunity cost in this context:
* Opportunity cost in this context is potential revenue that could be earned from niobium mining business.
* Anglo-American's decision to sell its niobium mining business to invest in other commodities means that it is forgoing the revenue earned from niobium mining for higher revenue earned from other markets.

Mark scheme:
* *1 mark for defining opportunity cost*
* *2 marks for identifying & explaining the opportunity cost in the context of Anglo American's decision (lost revenue)*

(e)	**With the use of relevant economic theory, explain why there have been protests against niobium mining proposals in Kanesatake and Oka.**	**[5]**	*Extract 3*

There have been protests against niobium mining proposals in these two towns because of the harmful effects to environment and citizens' health which would arise if niobium mining were to take place.

The protests are about negative externalities or external costs which arise due to the market failure arising from niobium mining.

- In their decisions, niobium producers consider only their MPB and MPC. MPB in this case is the additional revenue that they would receive from the additional unit of niobium mined. Their MPC would include start-up costs, expenditure on machinery and cost of hiring labour.

- Due to self-interest, they do not take into account the external cost on third parties (in this case the protestors living in the two towns) such as the contamination of water sources which would affect the livelihood of the residents, mostly farmers. Other external costs include healthcare costs due to radioactive pollution (Extract 4).

Draw graph: The high negative externality causes a large divergence between social and private costs. Hence, the equilibrium quantity supplied is at Qm which is higher than Qs, which is the social efficient output (MSB=MSB). This results in a deadweight loss as indicated in the graph above.

Mark scheme:
- *Up to 4 marks for accurate conceptual explanation of external cost and cost divergence, with use of examples from the context in question*
- *5 marks for answers that give precise definitions of negative externality and cost concepts used in answer*

(f)	**To what extent should the Quebec government accede to the protests by Kanesatake and Oka residents?**	**[6]**	*Extract 3*

Unpacking the phrase "accede to protests": The government has to decide whether to allow niobium mining activities to start. To accede to the protests would be to reject Eco-niobium's mining proposals and disallow niobium mining.

Thesis: Quebec government should accede to the protests.

- Evidence in Extract 3 suggests that the claims of external costs by protestors are indeed true. Niobium mining releases harmful radioactive waves and negatively impacts water for farming and drinking. Extract 3 mentions that this was not a new concern as it closed in 1977 due to unsustainable production back then. Moreover, this is crucial because Oka is known to be a small agricultural town. Contaminating the sources would severely impact livelihoods and culture of Mohawks (the country's indigenous group). This could also further affect food chains which may have long term detrimental effects.

Anti-thesis:

- Allowing mining activities in the towns would create employment and improve the economic growth. As niobium is an important industry for the production of metal, there is potential for growth in the future. This would increase the income of citizens, leading to an increased standard of living.

  Counter argument: However, the numbers of jobs created are only a small amount of 250 (Extract 3). This may not be significant enough to justify the large external costs incurred.

- Extract 3 mentions that the potential revenue and taxes collected are very high. This could benefit the two towns as the government revenue can be used for redistribution efforts or on further developing the town. This could lead to an increase in AD and sustain economic growth into the future. For e.g. Extract 1 para 2 mentions that Canada is home to the third largest niobium producer. This is evidence of the large potential of niobium industry.

Synthesis: Whether the government should accede to requests of protestors would depend on a few things. If niobium mining activities were to take place in the two towns, they have to consider whether they are able to limit production and monitor to ensure the environment's sustainability. The government should also consider if there are other alternative industries for economic growth where there are fewer external costs. They may also want to consider the future of the agriculture town, if agriculture, their main source of income, is a relevant industry to sustain economic growth.

Level	Descriptors for (f)	Marks
3	• Balanced & sufficiently developed analysis on whether Quebec government should accede to protests. • Has good and accurate use of economic analysis and reasoning to make a reasoned conclusion • Making references to information in case study • Clear synthesis of arguments	5-6
2	• Balanced but underdeveloped OR one-sided analysis on whether Quebec government should accede to protests • Has some economic analysis but may have minor inaccuracies, or lack reasoning to make a reasoned conclusion • Makes little or no reference to information in case study·	3-4
1	• Answers has major conceptual inaccuracies • Descriptive answer with no economic analysis and framework to support.	1-2

(g)	**Discuss whether for the UK government should protect the country's steel industry.**	**[8]**	Fig 1-3, Ext 2 & 4

Introduction: Steel prices have been generally declining from 2011 to 2014. Extract 4 suggests that UK's steel industry is battered by falling steel prices, suggesting While production of steel in the world is increasing, the steel industry is making up a smaller proportion of UK's economy growth, as shown in figure 3, reflecting less importance as a contributor of its GDP. Whether the UK government should protect the country's steel industry would depend on the how beneficial it is for UK's macroeconomic aims in the SR and LR.

Thesis: The UK government should protect the country's steel industry to some extent.

Thesis 1: Without the government's protection, there will be massive unemployment of 1 in 6 workers in Britain's steel industry. The shut-down of Tata Steel is confirmed to retrench almost 1200 workers according to Extract 4. As the steel industry is a significant contribution to the country's economy, there will be an increase in unemployment rates in the UK. This would lead to fewer people earning an income and would have other "knock-on" (reverse multiplier) effects on UK's economy (Extract 4). The purchasing power of UK citizens will decrease, leading to lower C and a fall in AD. Moreover, this may increase government provision of unemployment benefits, and decrease in G in productive areas. This will result in a slowing economic growth and in the worst case, a deflationary spiral.

Counter argument: Whilst protecting the steel industry to prevent massive loss of jobs, this could lead to complacency among workers and a reliance on government's protection. This may limit their willingness to take up new skills in other growing industries as UK loses comparative advantage on the steel industry.

Thesis 2: The UK government should protect the steel industry as there is an unfair trade practice in China. China's steel industry is claimed to be artificially supported by government subsidies which led to an artificially more competitive price compared to steel from UK (Extract 2). Hence, this has resulted in China exporting large amount of metal at low prices which has been perceived as dumping, driving out UK's steel firms (Extract 2). In such a case, UK's protection to prevent unemployment would be justifiable.

Anti-thesis: The UK government should not completely protect the country's steel industry.

Anti-thesis 1: UK's falling exports of steel could be due to its loss of comparative advantage to emerging economies like China. Chinese steelmakers might have more cost efficient methods and also a lower cost of production due to the lower wages of labour in China. Moreover, this is exacerbated by the strength of the pound which makes UK steel relatively more expensive. Protecting industries which have loss in comparative advantage whilst a short term solution to prevent structural unemployment, could result in an over-reliance on the government support. This is detrimental to the UK government as it would also be politically difficult to remove these forms of protectionism (e.g. subsidies) in future. Consumer welfare would also be affected as they would face higher prices for steel.

Anti-thesis 2: Figure 3 indicates that the production of steel industry is declining while the UK economy is improving. This shows that the steel industry has become a less important contributor to UK's economic growth over the years. It would not be a prudent use of government resources to protect the steel industry. Instead, these government resources should be allocated to developing new areas of comparative advantage, improving economic growth in the long run.

Anti-thesis 3: Protection on the steel industry will lead to an increase in price of steel in the UK. This would lead to higher production costs for manufacturers that require steel (such as cars, buildings, etc.) to produce their goods. This will lead to cost-push inflation, causing SOL to decrease and a loss of export competitiveness in related industries where firms experience lower profits, possibly resulting in a cut down of production and increasing unemployment.

Synthesis: While it may be argued that the UK government should protect the steel industry against unfair trade practices and to prevent sudden massive unemployment in the short run, it must be aware of the changing dynamics of its economy and the forces of globalisation. The strategy of the government should be to improve productivity and mobility of its labour and develop new areas of comparative advantages which would sustain economic success in the long run. Merely protecting the industry could not only benefit producers at the expense of consumers but hinder UK's future growth.

Note: Answers should use both conceptual support/economic analysis and information from the case study materials in examining whether the UK steel industry should be supported by the government.

Level	Descriptors for part (g)	Marks
3	• Balanced & sufficiently developed analysis of whether the UK government should protect the country's steel industry • Has good and accurate use of economic analysis • Making references to information in case study.	5-6
2	• Balanced but underdeveloped OR one-sided analysis on whether the UK government should protect the country's steel industry. Or • Has some use of economic analysis with minor inaccuracies. • Makes little or no reference to information in case study·	3-4
1	• Answers has major conceptual inaccuracies • Descriptive answer with no economic analysis and framework to support.	1-2
E2	Reasoned judgement with the use of criteria such as SR vs LR implications of protectionism, future of steel industry in UK etc.	2
E1	Attempt to evaluate but did not make further judgement	1

2016 Prelims H1 Case Study Question 2

The Economics of Ageing Population

Suggested Answers

(a)	(i)	With reference to Figure 4, identify the country which appears to face the least challenge to the size of its future labour supply. Explain the basis of your choice.	[2]

- Sweden.
- Sweden's working population was forecast to rise by 8.1% by 2030, the highest among the countries with forecast of positive change in working population.

1 mark – Correct identification of country

1 mark – Refers to % change in working population as basis of choice.

	(ii)	Using AD/AS analysis, explain two ways in which ageing population in Germany would threaten the country's future economic growth.	[6]

- **Defining future economic growth**: Future economic growth refers to a country's ability to generate Gross Domestic Product (GDP) which is the value of goods and services produced domestically.
- **Primary determinants of future economic growth**: To achieve healthy future economic growth, a country has to grow its productive capacity (LRAS) and demand for its goods and services (AD).
  - Expansion in productive capacity – rightward shift of LRAS curve.
  - Expansion in AD – rightward shift to actualise potential economic growth (for actual economic growth).
- **How ageing population affects AS:** Through the impact on labour, ageing population can be expected to affect both productive capacity and labour cost.
- **How ageing population affects AD**: As a large number of the elderly can be expected to be pensioners or not working, this can be expected to affect the strength of consumption demand.
- These threats can be inferred from Figure 1 which shows Germany's labour force in 2030 was forecast to decline by 12.7% and the old-age dependency ratio will increase by about 50%. Extract 5 mentions the size of decline in labour force to be over 6 million.
- **Shrinkage in size of labour force** → contraction of labour force → smaller expansion in LRAS, assuming that the expansion is contributed by greater efficiency through investment and innovation and extension of labour force participation rates.
- **More resources need to be allocated for supporting the elderly**, drawing away from investment spending →limiting effects on both future LRAS and AD.
- **Rising dependency ratio** due to a greater fall in working-age population compared to the rise in the number of pensioners → need to set higher taxes to earn the tax revenue needed to sustain government spending → disincentive effects on effort and investment →limiting effects on both future LRAS and AD.
- There could also be falling domestic consumption as elderly households tend to spend only on basic needs and not on luxuries →limiting effects on future AD. [Note that while Extract 3 claims that the elderly save less and spend more, this is only a claim and not evidence-supported.]

	Knowledge, Content Application and Analysis	Marks
L3	• Accurately explaining the effects of ageing population on future economic growth (the two ways) through both future LRAS and AD. • Makes inferences using case study materials. Maximum 5 marks for answers that only explain the effects via LRAS (supply side) and omitting AD.	5-6
L2	• Not using case study materials as a basis of inferencing the effects on future economic growth. • The two ways correctly explained but lacking in conceptual accuracy or not using AD/AS concepts. • Using AD/AS concepts but undeveloped in explanation.	3-4
L1	• Extremely brief answer. • Major conceptual errors.	1-2

(b)	**Explain why it is likely the government and not the private sector that would finance the provision of infrastructure for the elderly population.**	**[4]**

Two reasons expected in answers.

- Infrastructure for the elderly is generally not chargeable directly (e.g. railings and gradual slope on pedestrian pavements, lifts on every floor of public housing). Even if there are charges for the construction of such facilities, **prices and profitability will likely be low** in comparison to investment needed. The construction of these facilities involves high cost as it will need rebuild or revamp works. The private sector will not have incentives to supply.

- The provision of such infrastructure is part of collective well-being of the population. The use of such facilities can also be considered to offer **positive externality to society**, in the form of improved safety and less resources incurred to deal with incidents involving fall of the elderly. Private firms will not consider positive externality in their investment considerations. Government subsidies are hence needed to build the elderly-support infrastructure which the private sector will not build or build enough.

- 2 marks for each reason well-explained.

- 1 mark each for only stating.

(c)	**With reference to Extract 7, comment on the view that ageing population would reduce income inequality.**	**[4]**

The claim/point of view in Extract 7:
- Ageing population → increase in demand for care workers (health service providers and other ageing –related jobs). These are jobs in middle and lower range skills.
- Increased demand → higher wages in the relevant sectors → narrowing the income gap between wages of higher skilled and lower skilled labour or between workers in the care industries with those in higher paying jobs in other industries.

Possible comments/evaluation points:
- The impact on narrowing income gap can be negligible as the job creation and rising wages may be confined within healthcare-related sectors and not in other sectors.
- The increase in wages is dependent on the interaction between demand and supply of labour. Wages may not go up much if supply of labour increases with the use of foreign labour or the extent of the increase in demand is reduced by automation of services.

- Wage inequality has been majorly contributed by the faster rising earnings of individuals in higher paying jobs or the capital owners benefiting from technology and investment driven economic growth. If their earnings continue to rise faster and larger, income inequality will continue to be larger despite rising wages of jobs in healthcare-related sectors.

2 marks – Explanation of the claim in Extract 7.

2 marks – Any valid evaluation point well-explained.

(d)	With reference to Extract 8, discuss the macroeconomic opportunities which ageing population might bring about to Singapore economy.	[6]

This answer will require students to
- *Explain the macroeconomic opportunities to economic growth and employment creation.*
- *Examine the opportunities by pointing out factors which are needed for these opportunities to be realised*

- **Context:** Ageing population can weaken a country's capacity for economic growth. Apart from imposing limits on future labour supply, labour productivity and consumption demand, the funding to support the elderly will draw away resources from uses which promote economic growth.

- **The opportunities:** However, meeting the needs of elderly population and the structural adjustments to accommodate the constraints on labour force may bring about opportunities for economic growth and employment. They can still contribute to productive capacity and quality of labour force **(supply-side contributions)** and the spending by the government on elderly support and the consumption of travel and hospitality services by the older population will create **demand for the economy**. Some ways these may come about:
  - **Employment creation** in some industries such as healthcare services, pharmaceuticals and elderly-support services.
  - Investment opportunities for firms from the construction projects for building eldercare infrastructure.
  - While older workers may lack the physical agility, they can offer deeper skills and experience to support the growth of companies and boosting competitiveness **(demand and supply-side effects).**
  - **Creation of domestic demand** from the growth of elderly-focused travel and leisure spending. While this target group may lack in their shopping habits and even spending power, the spending of those with high savings offers a market niche in travel and hospitality services.
  - **Creation of external demand** through the export of the expertise in developing eldercare services and facilities, e.g. part of urban planning in cities with ageing population.

- **Factors needed**: Whether ageing population imposes heavy burden or offering macroeconomic opportunities to Singapore would require several factors such as
  - How much **funds** are allocated by the government for investing into elderly care and infrastructure.
  - The **extent of skills upgrading** among the older workforce. Singapore's policy in extending the retirement age (Extract 8) is an example of leveraging the capacity of the older workforce through training.
  - How well domestic firms (SMEs) respond to the challenges posed by ageing population. If they constantly **innovate** to reduce labour dependence as suggested in Extract 9, these firms will be more cost and internationally competitive.

- A **sound safety net for the elderly** to be more self-reliant in their consumption and healthcare expenditures. Singapore's CPF savings and insurance policies (Extract 8) suggests that this policy approach is already present. The government has had to do much explanation to convince the population of the importance of savings and public insurance policies for healthcare and post-retirement earnings as part of preparing the economy to cope with ageing population.

- **Synthesis:** Coping and dealing with the constraints and needs of ageing population needs conscious and forward-looking public policies. Whether ageing population is a problem or a positive challenge depends on the comprehensiveness and effectiveness of policies built into the country's long term economic growth and development. For now, the Singapore government's emphasis on skills upgrading, insurance for the future, extension of retirement age points to the ability of the economy to leverage the opportunities which ageing population offers.

Level	Descriptors	Marks
3	• A synthesis incorporating the importance of government policies. • Well explained and evaluated perspectives on the issue whether ageing population offers opportunities and not merely problems/constraints. • Uses case study materials to comment that Singapore is in a position to tap on the macroeconomic opportunities from ageing population. • Make explicit link to growth and employment creation.	5-6
2	• Well explained but one-sided answer. OR • Balanced but undeveloped. • Entirely not using case study materials or context.	3-4
1	• A smattering of incidental points. • Major flaws in reasoning.	1-2

(e)	**In light of the problems of massive public debt and weak economic growth which the Japanese economy is facing, discuss the merits of raising consumption tax to tackle these problems.**	[8]

Context: Raising consumption tax appears to be a measure implemented to resolve the dilemma between raising tax revenue to reduce the debt and the problem of weak economic growth. By raising consumption tax, on goods and services, the government hence avoids having to raise taxes on personal and corporate earnings which will have more adverse effects on both aggregate demand and productive capacity. It could also be that the government might reduce earnings-based taxes accompanying higher consumption tax.

The merits of raising consumption tax: Raising consumption tax is justifiable and needed for the Japanese government to raise tax revenue, either for debt repayment or to finance fiscal stimulus without incurring further debt.

- In view of Japan's ageing population issue, Extract 6 mentions rising retirement, the greater emphasis on consumption tax will incorporate the elderly into the tax net, through their consumption. Without such a tax system, tax revenue will be severely reduced.

- Consumption tax → as it is broad-based, the lower tax rates compared to income taxes will generate large tax revenue→ ability to finance for fiscal stimulus or ageing population without busting the budget further (incurring even more public debt).

- Through fiscal stimulus or cuts in income tax made possible through higher consumption tax→ stimulate AD and national income.

- Unlike income taxes, consumption does not have a negative effect on motivation to work, save and invest → hence does not slow down economic growth like income tax.
- The use of additional tax revenue for debt repayment can help restore confidence in the economy and thus bolster confidence and investment, increasing AD and national income.

Evaluation: Raising consumption tax may worsen the weak economic growth or create other problems.

- Raising consumption tax → rising prices. With no change in households' income → real income falls →falling household spending → lower AD → worsens the recession.
- Given the already weak economic growth, raising consumption tax will worsen confidence in the Japanese economy → preventing investment demand → economy will continue to limp.
- The consumption tax should be implemented alongside a fiscal stimulus and structural adjustments involving promoting innovation and efficiency of the ageing workforce. Abe's macroeconomic policy arrows have indicated that the government is adopting three-pronged policies incorporating monetary, fiscal and supply side policies.
- Consumption tax is regressive in nature and can worsen income inequality. By raising it, the lower-income groups will be more affected as it takes up a larger proportion of their income.

Synthesis

- While raising the consumption tax can be considered appropriate in view of Japan's adverse debt problem and the ageing population, it was not a timely adjustment as the policy would weaken Japan's already sluggish economic growth.
- Even if the increase was felt necessary as a signalling of the government intending to adjust its tax orientation towards economic growth, the increase could be smaller than the 3% (in Extract 6).
- Indeed, the government is in a dilemma. The prolonged recessionary condition has led to ballooning debt and yet to reduce the debt will depress GDP further. There are no easy and fast solutions to the deep-seated economic issues Japan is facing.

Level	Descriptors	Marks
L3	• A balanced and well explained analysis. • Considers both Japan's economic growth and debt issues in examining the merits of raising the consumption tax. • Uses case study materials to support ideas.	5-6
L2	• Well explained but one sided. Or • Balanced but undeveloped. • Answer may be more on the growth or debt issue.	3-4
L1	• Very skeletal. • Very lacking in conceptual reasoning.	1-2
	Evaluation	
E2	Sound conceptual reasoning of arguments. Answer ending with a sound synthesis which considers one of these points: • Policy dilemma • Necessity of raising the consumption tax	2
E1	Evaluation with superficial support/reasoning. Arguments are left hanging without a sound synthesis.	1

2016 Prelims H1 Question 3

3. Members of Parliament in Singapore have raised suggestions to discourage unhealthy eating habits and prevent obesity, such as imposing a sugar tax or labelling of sugar content progressively in high-calorie foods, starting with canned and packet drinks.

Todayonline.com, 14th April 2016, accessed 1st July 2016

   a)   Explain the factors that will determine whether consumers or producers bear more of the burden of a sugar tax.   [10]

   b)   Discuss whether the imposition of a sugar tax on canned and packet drinks is appropriate in achieving efficiency in allocation of resources.   [15]

3a)   Explain the factors that will determine whether consumers or producers bear more of the burden of a sugar tax.   [10]
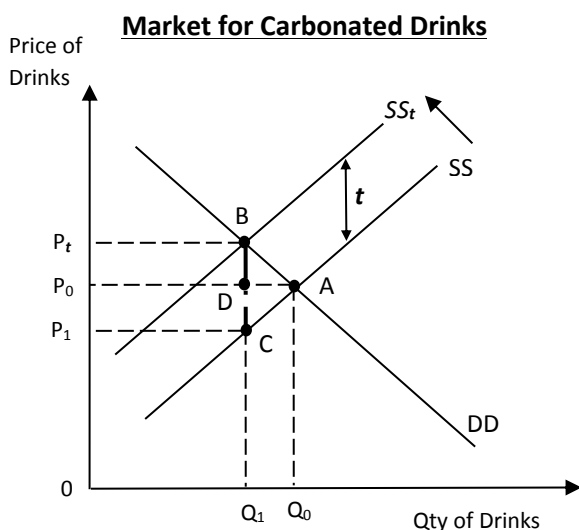
Framing & Unpacking:

- What is meant by tax burden: the tax burden or tax incidence is the amount of tax that has to be borne by the consumer or producer of the good on which the tax is placed. The total burden can be shared between the consumer and the producer, depending upon the PED of the food or drink.
- What is the objective of the sugar tax: It is aimed to discourage the unhealthy habit of consuming too much sugar, and to reduce the incidence of obesity in society.
- Nature of food and drinks with high sugar content: These incur negative externality.
- PED of such food and drinks – demand is price inelastic or elastic, depending on usage and types.

Introduction:

The excessive consumption of food and drinks with high sugar and fat content can lead one to be obese and may suffer other medical issues. These would incur negative externalities in the form of a less active society and lower productivity owing to absence from work. Thus, a sugar tax on such food and drinks is proposed to discourage their consumption, and to reduce the incidence of obesity in society.

Body:

1. How the sugar tax imposed on food and drinks with high sugar content like carbonated drinks, for example, works:

Market for Carbonated Drinks

- The tax adds a cost to the production of carbonated drinks.
- SS of drinks decreases, as indicated by the SS curve shifting from SS to SS_t *(tax amount is the vertical distance between SS and SS_t)*
- **New equilibrium at B**,
        Price = **OP_t,** Qty = **OQ_1**

- **Amount of tax** per unit is **BC** or *t*
- **Price** paid by **consumers** (**OP_t**) **increased** by **P_0P_t**
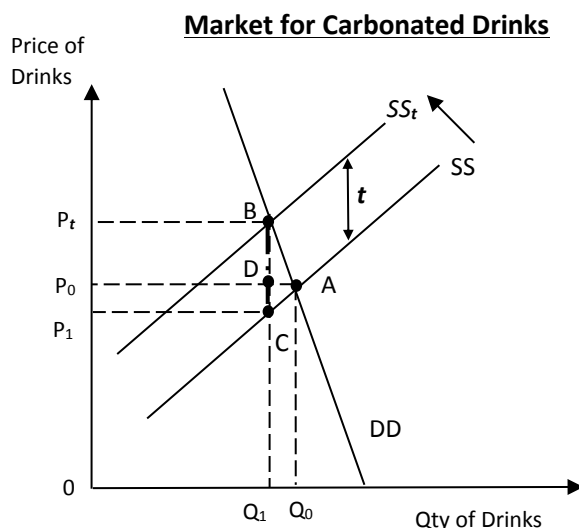
2. Explaining the **burden of the tax** on consumers or producers.
    i. The shift of the supply curve to the left indicates that the price of such sugary drinks has increased. But the increase would not be by the full amount of the tax, ***t.***
    ii. From the diagram above, the resulting higher price in the market means that the consumer now has to bear part of the burden of the new sugar tax, which is indicated as **P_0P_t**.
    iii. The producer, on the other hand would have to cover the rest of the tax, amounting to **P_1P_0**.

3. How the burden of the tax is borne **depends on the PED** of the food and drinks:
    i. Demand for sugary drinks would be price inelastic when consumers see them as essential to their daily need, for example, when consumers make it a point to consume sweet carbonated drinks during meals and other occasions.
    ii. It would also be price inelastic if they consume such drinks in large amounts (for example upsized drinks and syrupy cordial drinks).
    iii. Specialty sugary drinks (for e.g. Starbucks coffee, etc.) or those that garner a captive audience also shows a price inelastic demand for their attractiveness.
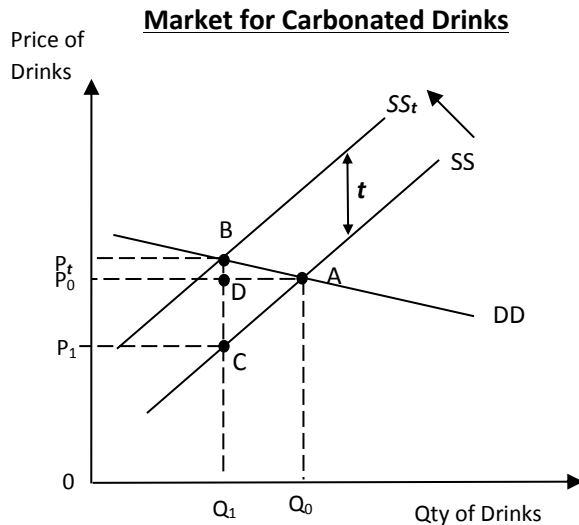
- Burden of tax is thus **greater on consumers** (illustration):

Market for Carbonated Drinks

- **Amount of tax** per unit is **BC** or ***t***
- **Consumer burden:** Price paid by consumers (OP_t) increased by P_0P_t
- **Producer burden:** The rest of the tax (P_1P_0)
- With price inelastic demand, the consumer burden is **greater** than the producer burden.

    iv. Demand is price elastic when consumers are indifferent to the marketing efforts of some producers to differentiate their goods (for example, some consumers do not consume Starbucks coffee even with the heavy marketing efforts by the firm.
    v. Demand is price elastic also if consumers considers the less sugared drinks (that may not be taxed) or just plain mineral water as substitutes to the sweet sugary drinks for refreshments.

- Burden of tax is **greater on producers** (illustration):

Market for Carbonated Drinks

- **Consumer burden:** Price paid by consumers (OP_t) increased by P_0P_t
- **Producer burden:** The rest of the tax (P_1P_0)
- With price elastic demand, the consumer burden is **smaller** than the producer burden.

4. PES relative to PED:
   i. This point looks at the relative responses of both parties (consumers vs. producers) to a price change. Some producers would choose to 'absorb' the tax increase in order to maintain their consumer base (minimise loss of consumers).
   ii. So if SS is relatively price inelastic, then the producer will bear a greater burden than the consumers.
   iii. Alternatively, if SS is relatively price elastic (for example, canned drinks), then the consumers will bear a larger burden of the sugar tax.

Conclusion

In conclusion, the sugar tax causes cost of production to increase, and hence price to rise. The burden of the tax is determined by the relative responsiveness of the consumers and producer. The more price inelastic the demand is, the larger the tax burden paid by consumers.

Marking Scheme:

	Knowledge, Content and Analysis	
L1	• Largely inaccurate analyses of the effect of the tax on sugary drinks • Largely inaccurate explanation of tax burden	1-3 marks
L2	• Students able to analyse the impact of the tax on sugary drinks • Students accurately explains the tax burden on consumers and producers • Largely accurate in analysing the effect of PED on the tax burdens	5-6 marks
L3	• Students clearly differentiates the tax burden through the factors affecting the PED of sugary drinks. • Students acknowledge the relative price elasticity of both DD and SS.	7-10 marks

3b) **Discuss whether the imposition of a tax on sugary drinks is appropriate in achieving efficiency in allocation of resources.** **[15]**

Framing & Unpacking:
- Analysis of efficiency in allocation of resources
- The use of sugar tax may internalize and reduce/eliminate negative externalities, but there are other effects and considerations that the government should bear in mind. A **cost-benefit analysis** on sugar tax could be undertaken to ascertain if the objective can be achieved.
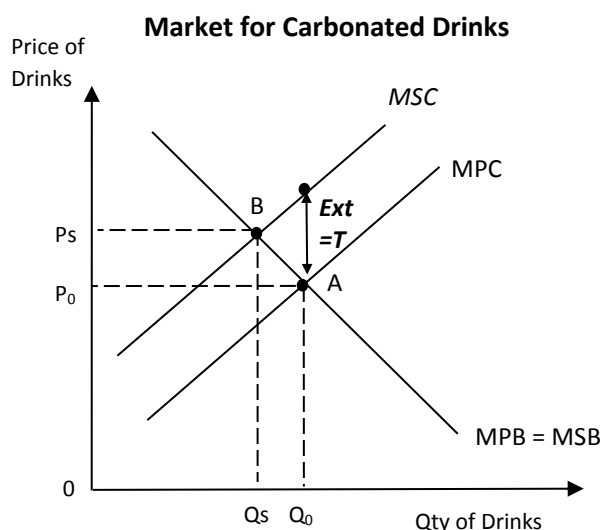
Introduction:
The sugar tax may be necessary to curb the unhealthy habit of consuming food and drinks with high sugar or fat content. This may then reduce the incidence of obesity and other health problems associated with it, which incurs heavy costs on the healthcare sector that may be unnecessary or left uncompensated.

Body:

1. Consumption of sugary drinks incurs negative externalities:
   - Explain concept of negative externality and apply to goods with high sugar content
   - Negative externalities are costs imposed on others that has nothing to do with the economic transaction at hand.
   - Thus, consumers who frequently consume foods with high sugar content would find themselves with medical issues of obesity and other health problems like heart defects and kidney failures.
   - These medical issues may impose greater strain on the health system already bogged down with aging population and its attendant medical problems.
   - Government healthcare spending may increase due to subsidies to citizens afflicted with obesity and its related healthcare payments

2. Analysis of indirect tax to reduce negative externalities:

Market for Carbonated Drinks

Diagram: Price of Drinks (vertical axis) vs Qty of Drinks (horizontal axis). Curves MSC, MPC, MPB = MSB. Points B at (Q_s, P_s) and A at (Q_0, P_0). Ext = T shown between B and A.	• Current market equilibrium price and quantity is at P_0Q_0 • **Allocative efficiency is at equilibrium at B**, where MSB = MSC • The externalities (size T) increases the cost of providing the good to society → MSC will be higher than MPC • Price at social equilibrium is at Ps, rather than at Po, at which consumers are currently paying. • Thus, society is over-consuming carbonated drinks, and paying a price that is below social equilibrium price.

- An indirect tax on the carbonated drinks (a sugar tax), T can be imposed on the good, which brings MPC to parity with MSC.
- Consumers then pay Ps and consume at Qs so that allocative efficiency is attained.
   → Sugar tax can be an appropriate measure for allocative efficiency to be attained.

3. **Evaluation** of sugar tax:
    - Allocative efficiency may not be achieved if:
      o Tax imposed is not equivalent to the magnitude of negative externality.
      o While the intent of the tax is to reduce society's obesity problems, the price inelastic demand of these goods will not result in substantial fall in quantity demanded. Thus, the rate of obesity may remain high. Instead, it only results in the collection of more revenue by the government, which may not necessarily be diverted towards health programmes.
      o Extent of externalities is unknown and may be hidden due to the long-term effects of the problems.

    - Sugar tax is regressive:
      o Low income households depend on cheaper, processed foods or cordial drinks which contains sugar.
      o The tax will lower their purchasing power.

    - Government failure:
      o Government may not be able to track all ingredients of food and drinks that contribute to obesity.
      o Government failed to take into consideration other contributing factors to obesity, for example, inactivity or hereditary factors.

4. **Appropriateness** of tax policy depends on:
    - Cost-benefit analysis
      o The government may not see this tax as a priority if the country is facing severe economic crisis or a recession.
      o Incomes are already falling, and a sugar tax may be more burdensome to those already affected by the economic crisis.
    - There are also clear, established links between obesity and other unhealthy foods; thus the government may have to consider imposing taxes on such foods as well. This could also be an unpopular policy which brings more unhappiness to consumers due to regressive nature of such taxes, and the impact on income distribution.

Conclusion:

Although an accurate and measured tax can lead to allocative efficiency, the sugar tax may not be an appropriate tax due to its regressivity and its impact on income inequality in the country. A more concerted effort to educate consumers on eating healthily should be undertaken by the government in order to reduce the consumption of unhealthy foods, including sugary drinks and fatty foods.

The government may need to consider alternative policies to reduce consumption of sugary drinks:
- Education on healthy eating habits (posters, school lessons, etc.)
- Promotion of exercise and healthy living (in schools, ActiveSG, etc.)

Marking Scheme:

	Knowledge, Content and Analysis	
L1	• Answers are grossly inadequate, and have not addressed the issues of inefficient resource allocation • Answers show much inaccurate analysis.	**1-5 marks**
L2	• Answers sufficiently address the externality and inefficiency issues, but with some inaccuracies. • Students adequately raised the analysis of imposition of the tax, but with some inaccuracies. • Answers did not address the effect of and appropriateness of the sugar tax well.	**6-8 marks**
L3	• Answers analysed the issue of externality and allocative inefficiency well, and applied the sugar tax accurately. • Answers addressed the inadequacies of the sugar tax, analysing the effect of the sugar tax on income inequality.	**9-11 marks**
	Evaluation	
E1	• Evaluation is not based on reasoned judgement	**1-2 m**
E2	• Answers are well-evaluated, and reasoned judgement is raised adequately.	**3-4 m**

2016 Prelims H1 Question 4

Unlike the United Kingdom that has been running a persistent deficit in the current account of its balance of payments, Germany has been consistently having current account surplus. There have been calls for Germany to reduce this surplus.

(a) Explain why governments aim to have current account surplus. [10]

(b) Discuss the view that countries with persistent current account surplus should adopt expansionary fiscal policy. [15]

4a) Explain why governments aim to have current account surplus. [10]

- Brief explanation of current account surplus (types of transactions, what it means by surplus)
  - Transactions involving trade in goods and services and flows of earnings from movements of funds and investments between countries.
  - A current account surplus means a net inflow of receipts from trade and the earnings from funds/investments across borders.
  - Through current account surplus, a country will be in a better position to achieve the following:
    - Economic growth from healthy performance of net exports.
    - Both internal economic stability (domestic macroeconomic performance) and external economic stability (healthy balance of payments).

- How current account surplus boosts economic growth, employment and standard of living (internal stability):
  - Positive net exports → net injection into circular flow of income → increased AD → economic growth and employment → improvement in standard of living. Crucial for countries with small domestic market such as Singapore.
  - If current account surplus is brought about from inflows of earnings from employment and investment overseas → these earnings help to support domestic standard of living.
  - Use of AD/AS diagram is encouraged to illustrate the effects of positive net exports on economic growth.

- Current account surplus and external stability
  - Current account surplus helps to enable a country accumulate foreign exchange reserves and stable exchange rate (elements of external stability).
  - Accumulation of foreign currencies enable a country to continue importing for some period in the event of widespread recession and falling exports earnings.
  - Current account surplus will generate demand for the domestic currency due to strong export demand → appreciation of exchange rate
  - Strong exchange rate is one of the indicators of strong economic performance → encouraging healthy inflows of funds and investment into country (capital account performance).

	Knowledge, Application/Understanding and Analysis	
L3	• Conceptual explanation (referring to circular flow of income or AD/AS) to justify why current account surplus supports domestic economic performance. • Linking economic growth and employment to standard of living • Linking current account surplus to exchange rate stability and capital account	**7-10**
L2	• A clear explanation linking current account surplus with economic growth and employment but lacking in the conceptual support (injection/withdrawal in relation to circular flow of income or the use of AD/AS analylsis)	**5-6**
L1	• Basic conceptual knowledge of current account surplus • No links made between current account surplus and AD	**1-4**

4b) Discuss the view that countries with persistent current account surplus should adopt expansionary fiscal policy. **[15]**

• Framing
  o Current account surplus offers positive macroeconomic outcomes to a country but a prolonged occurrence of that will upset the country's trade partners because it suggests that the country is not buying enough from them.
  o Reducing the persistent surplus is needed for the country to be on sustainable economic growth because excessive surplus can create macroeconomic concerns such as inflationary pressures.
  o Reducing the persistent current account surplus can also raise domestic standard of living, by the population enjoying more consumption of imports.
  o Expansionary fiscal policy theoretically can help reduce the current account surplus through the expansion in AD and imports. However, it is not a policy that countries can easily adopt due to macroeconomic concerns it can pose too.

• Explaining and examining expansionary fiscal policy to reduce current account surplus
  o Deficit budget policy – government spending > tax revenue → net injection into circular flow of income → increased AD → increased national income and import expenditure as imports form part of domestic AD components (C, I and G) → reduction of current account surplus assuming constant exports.
  o Deficit budget can also reduce exports through the effects of rising domestic inflation.
  o However, this policy might not be desirable and effective
    i. Why undesirable: Demand-pull inflation if domestic unemployment rate is already low → can depress economic growth arising from the higher inflation.
    ii. Why ineffective: Import expenditure may not respond much if trade barriers are not lowered, hence freer trade policy is needed alongside the expansionary approach if the government is serious about letting import expenditure rise.
  o Also, the current account surplus could be structurally contributed by strong inflows of earnings from overseas investment by domestic firms and capital owners, this does not justify deficit budget.

• Considering the issue of 'should adopt'
  o Would reduction of current account surplus justify the emergence of demand pull inflation from expansionary fiscal policy?

- o Expansionary fiscal policy involves adopting deficit budget – could this compromise the government's prudent budget policy of sustaining surplus budget?
- o Instead of adopting expansionary fiscal policy, it might be more appropriate for the central bank of the country to let its exchange rate appreciate. Its export and import prices can then adjust and letting free market forces to enable self-correction of the persistent surplus.

- Synthesis/Conclusion:
  - o Theoretically it makes sense for the country to raise import expenditure through expansionary fiscal policy but if the expansionary budget is adopted with existing barriers to entry of imports, the domestic economy will expand without reduction of the current account surplus.
  - o It is therefore necessary for the country with current account surplus to be more open to imports for there to be mutual free trade.
  - o The root cause of the persistent current account surplus need to be understood too. While the persistent surplus calls for the government to be more liberal towards the entry of imports, surplus due to inflows of investment earnings will not justify deficit budget.
  - o Letting the domestic currency's exchange rate appreciate in response to the persistent current account surplus and reducing trade barriers could be more appropriate policies to let market forces reduce the surplus.

	Knowledge, Application/Understanding and Analysis	

L3	• Sound connections
	  o Between AD & economic growth with rising import expenditure
	  o Between rising inflation (arising from budget deficit) and falling export revenue
	• Recognises the importance of lowering trade barriers or exchange rate appreciation to reduce the persistent current account surplus
		9-11

L2	• A clear explanation of how expansionary fiscal policy reduces current account surplus (via imports) but does not examine the adverse implication or insufficiency of this policy (unbalanced) OR • Balanced but undeveloped analysis	6-8
L1	Vague explanation of how expansionary fiscal policy reduces current account surplus	1-5
	Evaluation	
E2	Evaluation considers both effectiveness and desirability, such as • Effectiveness calls for country to be more open to entry of imports and appreciation of exchange rate • Expansionary fiscal policy can be undesirable if the economy is on full employment and demand pull inflation can disrupt this macroeconomic stability	3-4
E1	Evaluation is not accompanied with sound conceptual reasoning and reasoned judgement as synthesis	1-2