NJC 2024 SH2 H2 Econs P1 Suggested Answers

Case Study Question 1

Suggested Answers

- (a) With reference to Extract 1, explain the reason for the large increase in consumption for animal-based proteins in developing countries. [2]
 - When there is economic growth, households have higher income, thus resulting in an increase in demand for normal goods. [1]
 - In developing countries where incomes are low, animal-based proteins are considered luxury goods. Therefore, there is a significant increase in demand for animal-based proteins. [1]
- (b) With reference to Extract 2, explain why there is "a downward trend in meat-eating but figures are still high" (Extract 2). [4]
 - "The recent development of plant-based meat" (Extract 2) led to a decrease in the prices of plant-based meat. [1]
 - Plant-based meat is considered substitute in consumption to meat. [1]
 - When prices of plant-based meat decrease, there is a decrease in demand for meat, hence explaining the downward trend. **[1]**
 - Nevertheless, "the figures are still high" because there is a lack of / weak public support (Extract 2) due to "cultural habits" (Extract 2), thus the decrease in demand is insignificant. [1]
- (c) With reference to Extract 3,
 - (i) and using a demand and supply diagram, explain how the Environmental Land Management Schemes (ELMS) boost UK farmers' income as a result of doing the right thing for the environment.
 - "Do the right thing for the environment, for example looking after hedgerows, grasslands and soils / large-scale rewilding projects / natural flood management, wetland restoration and enhancing forest (Extract 3), would increase the cost of food production to UK's farmers. The increase in cost of production would reduce the income of UK's farmer. [1]
 - Government payments via the ELMS help lower the cost of food production when the farmers adhere to the higher environmental standards. This would increase the production of food as illustrated by the shift of the supply curve from So to S1 in Diagram 2. [1]



Diagram 1: The market for farmed goods

- As a result, no doubt UK's farmer pre-subsidy revenue decreases from area P₀E₀Q₀0 to area P₁E₁Q₁0, UK's farmer post-subsidy revenue increases from area P₀E₀Q₀0 to area (P₁E₁Q₁0 + P₀E₀AP₂). [1]
- A well-labelled and well-referred to diagram. [1]
- (ii) explain the unintended consequence of UK's higher environment standards in food production on its economy. [2]
 - UK's higher environment standards in food production would increase the cost of food production to UK's farmers and the farmers would pass on the higher costs in terms of higher prices to consumers. [1]
 - UK's consumers would thus switch from purchasing the relatively more expensive domestically produced food to the relatively cheaper imported food thus increasing UK's import expenditure (M) and hence decreases UK's (X-M). [1]
- (d) With reference to the information provided, discuss the view that providing information would reduce allocative inefficiency caused by imperfect information on "the demand side" (Extract 4) of UK's food systems.
 - The existence of imperfect information regarding the health costs arising from obesity due to meat-eating (Extract 2) has resulted in allocative inefficiency on the demand side of UK's food system.
 - As a result of the imperfect information regarding the heath costs, consumers underestimated their private cost of meat-eating. For example, obesity and its related health issues that would require expensive medical treatments.
 - The existence of the imperfect information thus results in a divergence between MPC_{perceived} and MPC_{actual} as illustrated in Diagram 2 where MPC_{actual} > MPC_{perceived}.



Diagram 2: Costs and benefits of meat-eating from consumers perspective

- The free-market equilibrium level of consumption is at Q_p where MPC_{perceived}=MPB but the socially optimal level of consumption is at Q_a where MPC_{actual}=MPB. The latter assumed the inexistence of externalities thus MPC=MSC because MEC=0 and MPB=MSB because MEB=0.
- Since $Q_a < Q_p$, there is an over-consumption of meat by $Q_a Q_p$.
- The over-consumption results in allocative inefficiency illustrated by a deadweight loss of triangle E_aE_pA.
- Information providing regarding the true full costs of meat-eating (e.g. health costs such as obesity and its related health issues that would require expensive medical treatments), if successful, will change consumers' taste and preferences away from eating meat (i.e. decrease in demand for meat) and towards more plant-based alternatives because of the increase in their marginal private cost of meat-eating as illustrated by the shift of MPC_{perceived} closer to MPC_{actual}.
- As a result, meat-eating would reduce from Q_p towards Q_a, decreasing the overconsumption thus reducing the deadweight loss. Therefore, information providing can be used to reduce allocative inefficiency caused by imperfect information on the demand side of UK's food systems.
- In conclusion, whether information providing would reduce the allocative inefficiency caused by imperfect information on the demand side of UK's food system depends on the nature of information provided.
- Information must be targeted at how meat-eating would impact the individuals themselves (e.g. health costs arising from obesity) to be effective (also suggested in Extract 4 Paragraph 5).
- (e) With reference to the information provided, discuss whether a reduction in subsidies given to highemission food production should be implemented by the UK government to address the market failure on "the supply side" (Extract 4) of UK's food systems. [10]
 - No doubt the reduction in subsidies given to high-emission food production can address the market failure on the supply side of UK's food system, it will bring about unintended consequences.

- Whether the UK should reduce the subsides on high-emission food depends on whether the subsidies can be reoriented to low-emission food production to minimise the unintended consequences.
- Negative production externalities in the case of, for example meat (i.e. animal-based proteins) production, are spill over costs associated with meat production to third parties who are not directly involved in the production nor consumption of meat, and no compensation is involved.
- Meat production have private benefits to firms such the revenue earned from the sale of meat and private costs to firms such as wage expenditure to process / transport the meat and the expenditure on animal feeds.
- However, meat production also has external costs to third parties such as vegetarian rising from health-related illnesses (and their treatments) associated with greenhouse gas emissions (Extract 1) such as heat stress and elevated blood pressure
- Meat is often over-produced resulting in deadweight loss because the external costs are not internalised by meat producers who care only about their private benefits and costs.
- The private benefits and the private costs can be illustrated by MPB and MPC in Diagram 3 respectively.



Diagram 3: Negative externalities from meat production

- The private production level is achieved at E_p where MPB=MPC with production level Q_p and price P_p.
- The existence of external costs results in a divergence between MPC and MSC by the amount MEC because the individuals fail to internalise the external costs.
- Assuming no external benefit and hence MEB=0, MPB=MSB. Social optimality is achieved at E_s where MSB=MSC with production level Q_s and price P_s.
- Since $Q_s < Q_p$, there is an over-production of meat by $Q_s Q_p$.

- The over-production due to negative externalities results in allocative inefficiency illustrated by a deadweight loss of triangle E_sAE_p.
- A reduction in production subsidies for livestock farming (Extract 4) would increase the private cost of meat producers, thus the private cost would increase by the value of the marginal external cost as illustrated from MPC to MPC-Sub.
- As a result, meat production would reduce from Q_p to social optimal level Q_s, eliminating the deadweight loss.
- However, the reduction in subsidies on meat production would worsen UK's cost of living crisis as mentioned in Extract 4 because it would lead to higher price for meat as illustrated from P_p to P_s in diagram 3. Given that UK is a western country with strong meat eating cultural habits (Extract 2) thus expenditure on meat takes up a large proportion of UK residents' living expenditure, the increase in consumption expenditure on meat would contribute a significant increase in their cost of living. Assuming income nominal unchanged per capita (assuming population size remain the same), the reduction in the subsidies would lower UK's material standard of living as lesser needs and wants can be met. That explains why "measures need to consider potential impacts on food prices" (Extract 4).
- Furthermore, the increase in price of meat produced in UK (due to the reduction on subsides on meat production) would lead to a loss of price competitiveness of meat produced in UK. With reference to answer in c(ii), the relatively higher price would cause UK's consumers to switch from purchasing the relatively more expensive domestically produced food to the relatively cheaper imported food thus increasing UK's import expenditure (M) and hence decreases UK's balance of trade (X-M) surplus / increases UK's balance of trade (X-M) deficit, leading to the unintended consequence on UK's economy mentioned in Extract 3.
- In addition, the reduction on subsidies on meat production would damage the domestic livestock farming sector, risking the livelihood of the farmers (Extract 2; similar to that of having a meat tax on production). This is because with the reduction in subsidies, meat producers (including livestock farmers) would now have to pay for that part of the cost previously covered by the subsides and thus increase their cost of production. Given Profit = Total revenue - Total cost, profit and thus income of meat producers would decrease, assuming total revenue unchanged. That explains why "measures need to consider potential impacts on ... producer incomes" (Extract 4).
- In conclusion, no doubt a reduction in subsidies given to high-emission food production could reduce allocation inefficiency thus address the market failure on the supply side of UK's food systems, it can have unintended consequences on UK's cost of living / UK's balance of trade / livelihood of UK's food farmers.
- Whether the reduction in subsidies should be implemented depends on whether the subsidies can be / are reoriented to low-emission food production.

Case Study Question 2

Suggested Answers

(a) Explain how a rise in productivity reduces the average costs of a firm.

[2]

	• A rise in productivity means that a firm can produce more with the same amount of resources. [1]
	• With the total costs remaining the same and output increased, average costs would fall. [1]
(b)	Extract 1 highlights that Singapore's outlook darkens for 2023 and 'warned that 2023 will be a tougher year for the global economy than 2022.'
	Explain how 'one-third of the world economy (would) be in recession' is expected to affect
	Singapore's economic growth negatively in 2023.[4]
	 If the world economy really goes into recession in 2023, Singapore's trading partners will be experiencing falling national income. [1] This will result in a reduction their demand for Singapore's exports. Hence, Singapore is expected to face a fall in export revenue. Assuming Singapore's import expenditure
	 remains unchanged, it is expected a fall in net exports (X-M). [1] With the expected decrease in AD, national income is expected to decrease in
	Singapore in 2023. [1]
	 Singapore's national income would decrease by more than proportionately via the reverse multiplier effect. Hence, Singapore will also have a negative economic growth or fall in national income. [1]
(c)	Explain how 'increasing the Workfare Income Supplement' has affected income inequality in 2023. [2]
	WIS will increase the disposable income of lower-income workers. [1]
	 Hence, it reduces the income inequality as seen from Table 1 where the Girl Coefficient has reduced in 2023. [1]
(d)	With reference to Extract 3 and using a demand and supply diagram, explain one reason for the rising labour wages in 2021
	Given the rapid economic growth in 2021, this implies an increase in income. Hence,
	demand for goods increases. [1]
	• Hence, the demand for labour increases from DD_0 to DD_1 (figure 1), [1]
	 Hence, causing upward pressure on wages and this had led to a rise in labour wages in 2021. [1]
	• Diagram [1]
	Wages ♠
	ss₀
	w,
	w.
	$0 \qquad \qquad \mathbf{Q}_0 = \mathbf{Q}_s \qquad \mathbf{Q}_1 \qquad \mathbf{Q}_D \qquad \qquad \mathbf{labour}$
	Shortage
	Figure 1: Labour Market



	 Rising wages outpace productivity growth will definitely have a significant negative impact on the Singapore's economy – cost push inflation, worsening of balance of trade, negative economic growth and higher unemployment. However, the negative impacts on the economy can be mitigated via several government interventions.
(f)	Extract 4 highlights that 'AI is generally acknowledged to be an engine of productivity and growth.'
	Discuss whether embracing AI or decrease in income tax rates (Extract 5) is better for enhancing inclusive economic growth in a country amidst the global slowdown in economic growth. [10]
	 Inclusive growth refers to a rate of growth that is sustained over a period of time. The investment in AI by the firms will direct increase in AD since I is a component of AD. This increase in investment would trigger the multiplier effect, which will increase AD and real GDP by a multiplied amount. The AD curve will shift rightwards from AD₁ to AD₂ in figure below. Real GDP increases from Y₁ to Y₂.
	 The improvement in labour productivity from embracing AI also increases the LRAS, as shown by the rightwards shift of the AS curve from AS₁ to AS₂, thus achieving potential growth.
	Figure 4: Sustained growth due to embracing of Al
	General Price Level
	 As national income rises, a government's tax revenue increase. This allows the government to spend more on social assistance programmes to help the needy families or individuals through redistributive policies like WIS schemes in Singapore. However, embracing AI could displace many jobs formerly done by humans, where jobs are usually those that are repetitive and manual and can now be handled more efficiently by AI and technology. Hence, AI has reduced demand for low-skilled labour and led to technological unemployment among low skilled worker.
	 As mentioned in Extract 5 '21 states cut their personal tax rates'. When the government decreases income tax, disposable income will rise for households and this increases consumption and AD would increase. As a result there would be a more than proportionate increase in national income based on the multiplier process.

	However, with a reduction in income tax rates, it might not achieve inclusive growth. As mentioned in Extract 5, 'in the 11 states that cut individual income tax rates in 2022, the biggest direct benefits were enjoyed by the highest-earning households, Auxier's analysis found. By comparison, lower- and middle-income households received only a modest or no benefit.
•	Both policies are effective in enhancing inclusive economic growth. Maybe tax cut is better policy due to the global slowdown in economic growth. As more countries face a slowdown in economic growth, they are reducing their consumption of domestic goods and demand for imported goods. Given the fall in external demand, countries like US might be more inward looking by using cut in personal income taxes to increase actual economic growth.

Essay Question 1

Lithium currently plays a significant role in the production of lithium batteries widely used in electric vehicles (EVs), but recent research into alternatives such as sodium-ion batteries could also enable their use in EVs. To encourage more consumers to purchase EVs in a push for environmental sustainability, some governments have introduced direct subsidies on EVs. Others are exploring to increase taxes on internal combustion engine vehicles (ICEVs).

- (a) With the aid of a diagram, explain a likely impact of a rise in the price of lithium on the overall consumer expenditure on EVs. [10]
- (b) Discuss whether government policies or advancements in battery technologies will have a greater impact on the market for EVs in the long run. [15]

Suggested Answers

Part (a)

Lithium currently plays a significant role in the production of lithium batteries widely used in electric vehicles (EVs), but recent research into alternatives such as sodium-ion batteries could also enable their use in EVs. To encourage more consumers to purchase EVs in a push for environmental sustainability, some governments have introduced direct subsidies on EVs. Others are exploring to increase taxes on internal combustion engine vehicles (ICEVs).

(a) With the aid of a diagram, explain a likely impact of a rise in the price of lithium on the overall consumer expenditure on EVs. [10]

Introduction

• A rise in the price of lithium could raise the cost of production of lithium batteries and thus EVs, thereby decreasing its supply.

- When the price of lithium rises, this would lead to a rise in cost of production for EVs.
- Thus, this would lead to a fall in supply of EVs, which is indicated by a leftward shift of the supply curve from S₀ to S₁.
- As a result, the price of EVs would increase to P₁.
- When price of EVs increase, the quantity demanded for EVs will fall.

• Equilibrium price of EVs increase from P₀ to P₁, whilst equilibrium quantity of EVs decreases from Q₀ to Q₁.

Requirement 2

- The impact on overall consumer expenditure on EVs depends on the price elasticity of demand for EVs.
- Price elasticity of demand measures the responsiveness of consumers to a change in the price of a good, and is given by the formula <u>% change in qty demanded</u> <u>% change in price</u>
 .
- In the case of EVs, PED could be > 1, i.e. demand for EVs is price elastic. This is because there are many available substitutes for EVs.
- Since PED > 1 for EVs, then this implies that quantity demanded decreases more than proportionately to a rise in price.
- As such, overall consumer expenditure on EVs would fall, since the rise in expenditure due to a rise in equilibrium price is outweighed by the fall in expenditure due to the fall in equilibrium quantity.

Illustration with a diagram is expected.

Conclusion

• In conclusion, overall consumer expenditure on EVs would likely decrease due to a rise in the price of lithium.

Part (b)

(b) Discuss whether government policies or advancements in battery technologies will have a greater impact on the market for EVs in the long run. [15]

Introduction

- When considering the impact of events on a market, we look at the changes to both equilibrium price and quantity.
- Long run refers to the timeframe where all factors are variable and can be adjusted.

Requirement 1

- Direct subsidies given to consumers on the purchase of EVs would increase the demand for EVs.
- An increase in taxes on ICEVs would also increase the demand for EVs, as EVs and ICEVs are substitutes in consumption, i.e. XED is positive.
- Thus, both government policies seek to increase the demand for EVs. An increase in demand for EVs (as reflected by a rightward shift in demand curve from D₀ to D₁) would result in an increase in both equilibrium price (from P₀ to P₁) and equilibrium quantity (from Q₀ to Q₁).

Evaluation

- As EVs and ICEVs might not be considered close substitutes in consumption, given that they have different types of engines and might cater to different types of consumers (e.g. environmentally conscious individuals might only purchase EVs, whereas those who are less environmentally conscious might be more inclined to purchase the cheaper ICEVs instead). Thus, the extent of increase in demand for EVs might not be significant.
- Direct subsidies on EVs might not increase demand for EVs significantly if the amount of subsidy given is insignificant and does not raise effectively raise purchasing power of consumers much.
- Even with these two stated policies in the preamble, it may be insufficient to resolve the pain points of owning an EV, as it primarily relates to the need for charging it once the battery runs out.

- Advancements in battery technologies has the effect of reducing the cost of batteries used in powering EVs. As such, the cost of production of EVs is decreased since the cost of batteries are lowered.
- This would have the effect of increasing supply of EVs. An increase in supply for EVs (as reflected by a rightward shift in supply curve from S₀ to S₁) would result in a decrease in equilibrium price (from P₀ to P₁) and an increase in equilibrium quantity (from Q₀ to Q₁).
- In addition, given that there are more alternatives to batteries that are used in powering EVs, supply for EVs can also become more price elastic as a result.
- Since supply for EVs is more price elastic due to the advancements in battery technologies, this means that equilibrium quantity increases by more (i.e. to Q₂ instead of Q₁) and equilibrium price decreases by more (i.e. to P₂ instead of P₁).

Evaluation

• Demand of EVs is likely to be price elastic, as explained in part (a) due to the wide number of available substitutes to EVs, therefore an increase in supply would result in a more than proportionate increase in quantity demanded relative to the decrease in price. This implies that equilibrium quantity of EVs increases quite significantly, whilst equilibrium price falls more marginally in comparison.

Conclusion

 Government policies primarily seek to increase the demand for EVs, whilst advancements in battery technologies would primarily increase the supply of EVs. As such, equilibrium quantity of EVs would definitively increase and quite significantly. The impact on equilibrium price is indeterminate since it depends on the extent of shifts in demand and supply curves. Thus, we need to consider which has a greater impact in the long run.

Essay Question 2

A firm's decisions and strategies are largely determined by the objectives of the firm.

- (a) Explain how a firm's price and output decision might change if its objective changes from maximising profit to maximising its revenue. [10]
- (b) Discuss whether price discrimination is the best strategy for a firm to increase its revenue.

[15]

Part (a)

(a) Explain how a firm's price and output decision might change if its objective changes from maximising profit to maximising its revenue. [10]

Introduction

- A basic assumption in economic theory is that firms seek to maximise profit.
- However, in reality, there could be other objectives a firm may have. In this essay, we shall examine how the objective of maximising revenue could change the price and output decision of a firm.

Requirement 1

- A firm whose objective is to maximise profit will decide on its price and output based on MR=MC
- If MR>MC, the firm's profit will increase by producing an additional unit of output. Hence the firm will continue to increase output as long as MR>MC. This is shown as Q0 in Figure 1.
- At MR<MC, if the firm reduces its output by one unit, its profit to increase. Hence, the firm will reduce its output as long as MR<MC. This is shown by Q2 in Figure 1.
- Hence, the firm will maximise its profit at the output where MR=MC ie. at Q1 in Figure 1. At the output Q1, the firm will set its price at P1.
- The profit-maximising firm will therefore decide to produce at output Q1 and set price at P1.
- The profit of the firm is given by the area C₁P₁ab in Figure 1.



Requirement 2⁰

Figure 1 – Profit-maximising firm

- In some cases, the firm may seek to maximise its revenue instead of profit.
- If the firm's objective is to maximise revenue, then its price and output are decided based on the criterion that MR=0.
- This is because as long as MR>0, the firm's revenue is not maximised and it will continue to increase its output until MR=0, when its revenue will not increase any further. Hence its revenue will be maximised at the output where MR=0. This is shown by Q3 in Figure 2.
- At output Q3, the firm will set its price at P2 which is determined by the AR curve. The profit is now C₂P₂ef. However, at Q3, the MC is greater than MR, which means that total cost has risen

by more than total revenue, and thus the profit would have fallen. Hence the profit C_2P_2ef , is lower than the profit at Q1 where MC=MR.

• The objective of maximising revenue thus results in a lower price P2 and a higher output Q3 compared to the price P1 and output Q1 of a profit-maximising firm.



Figure 2 – Revenue-maximising firm

Conclusion

Therefore, when the objective of a firm changes from profit-maximisation to revenue-maximisation, the basis of its price-output decision will change from MR=MC to MR=0, resulting in a higher output and lower price.

Part (b)

(b) Discuss whether price discrimination is the best strategy for a firm to increase its revenue.

[15]

Introduction

- Price discrimination occurs when a firm sells the same product to different buyers (or different segments of a market) at two or more different prices for reasons not associated with differences in costs.
- This essay will examine whether third degree price discrimination is the best strategy to increase a firm's revenue.

Requirement 1

- Price discrimination is one of the strategies a firm can adopt to increase its revenue.
- For third degree price discrimination to be feasible, the following conditions must be met:
 - The seller must be able to set its price.
 - The seller must be able to separate the market.
 - The seller faces different price elasticities of demand (PED) from separate groups of buyers (or market segments).
- Example: Cinema-goers would generally prefer to watch movies during the weekend when they have more leisure time and watching movies at the cinema is one of their favourite pastimes. During the weekdays, however, they are likely to have less leisure time and are thus less inclined to go to the cinema. The demand for cinema tickets would thus be more price inelastic during the weekend due to their higher degree of necessity to movie lovers, compared to the weekdays when the movie enthusiasts may not have the time to watch movies. Hence cinema operators charge a higher price for weekend cinema tickets and a lower price for weekday tickets.
- Suppose the 2 groups of buyers are Market A and Market B. Market A has a price inelastic demand (eg. weekend cinema tickets) while Market B has a price elastic demand (eg. weekday cinema tickets). Suppose the firm initially charges the same price in both markets. With price discrimination, the firm (cinema operator) now charges a higher price in Market A ie for weekend cinema tickets, and a lower price in Market B ie. for weekday cinema tickets.
- Since the demand for weekend cinema tickets (Market A) is price inelastic, the higher price P1 results an increase in revenue.
- In Market B (weekday cinema tickets), the demand is price-elastic, and so the lower price results in an increase in revenue.
- As the revenue increases in both Markets A and B, the firm's total revenue is increased. Hence the third degree price discrimination results in an overall increase in the firm's revenue.

Evaluation

• In reality, it is difficult to determine the actual PED values and any error in the firm's estimation of the PED value could result in a smaller increase in revenue or even a fall in revenue.

- A firm may adopt advertising as a strategy to increase the demand for its product by influencing consumers' taste and preference, thus increasing its revenue.
- Example: A restaurant may put up newspaper advertisements or posters with enticing pictures of its food offerings to attract customers. It may also advertise online and post positive comments from its customers to boost its brand image, thus changing consumers' taste and preference towards the restaurant. Such advertisements may also have a salience effect, as the attractive

pictures of its menu items may capture the attention of people and cause them to decide to try out its food. This causes the demand for the restaurant to increase.

- The increase in demand due to the advertising strategy leads to a rightward shift in AR/DD and MR, which results in an increase in revenue.
- At the same time, the advertisements may cause its demand more price-inelastic. This allows the restaurant to raise the prices of its food items without a significant fall in its quantity demanded, thus resulting in an increase in revenue.

Evaluation

• Advertising may not always be effective in changing consumers' taste and preference. The success of advertising is uncertain as it depends on how well and extensive the platform or mode of advertisement is able to reach out to consumers.

Conclusion

 Whether price discrimination or advertising is the best strategy to increase the firm's revenue depends on the cost of the strategy – the relatively high cost of advertising (especially in popular media) means that it may not increase the firm's profit even if it succeeds in increasing revenue. This makes it inferior to price discrimination which does not involve any explicit cost, and so the increase in revenue is more likely to increase the firm's profit as well.

Essay Question 3

Two possible reasons why markets may fail are public goods and positive externalities.

- (a) Explain two characteristics of public goods, and why markets might be allocative inefficient in the case of public goods. [10]
- (b) Discuss whether government policies used to correct market failure due to positive externalities will always create unintended consequences. [15]

Suggested Answers

Part (a)

Two possible reasons why markets may fail are public goods and positive externalities.

(a) Explain two characteristics of public goods, and why markets might be allocative inefficient in the case of public goods. [10]

Introduction

There are 3 characteristics of public goods – non-excludability in consumption, non-rivalry in consumption and non-rejectability.

Requirement 1

Non-excludability

- The characteristic of non-excludability means that it is impossible or unfeasible to exclude anyone from the benefits of the good once it is provided.
- Everyone benefits from it regardless of whether they pay for it or not.
- For example, once street lighting is provided for no one can be omitted to benefit from the lighting provided.

Non-rivalry

- The characteristic of non-rivalry means that the consumption of the good by one person does not reduce the benefit of the good available to others.
- In the case of street lighting, the brightness of the lighting will not decrease even if another person will use it. This means that an additional user does not deplete the supply of a public good and the marginal cost (MC) of providing for an additional user is zero.

- Since non-paying users usually cannot be excluded from enjoying a public good, suppliers of such goods will find it difficult or impossible to collect fees for the benefits they provide.
- In the example of street lighting, once it has been provided, it would be almost impossible to not allow non-payers in the country to enjoy the benefits. It will benefit everyone who in the area, irrespective of whether the person has paid for it or not.
- Since non-payers would be able to enjoy the benefit of lighting, this would deter people from deciding to pay for it in the first place. It is known as the 'free rider' problem. Hence, this would lead to people not paying for the public good. Public good would not be provided by private producers, thus there is allocative inefficiency.
- With MC=0 because of non-rivalry, the price must also be zero for it to be allocative efficient. However, there would be no private firms that are willing to produce at price = 0.

Part (b)

(b) Discuss whether government policies used to correct market failure due to positive externalities will always create unintended consequences. [15]

Introduction

• Governments may want to intervene in the market with positive externalities because the market would under-produce/consume the good/service.

- Positive externalities in consumption occurs when the benefits associated with the consumption of a good or service spill over onto third parties for which no compensation is paid.
- Private individuals would consume or produce up to the level where the MPB = MPC. However, with a market with positive externalities, there would be MEB.
- Without government intervention, economic agents would consume or produce up to MPB = MPC. However, the socially optimal point is where MSB = MSC. The socially optimal output level would be higher than the free market output level, thus leading to allocative inefficiency.
- To address the allocative inefficiency in markets with positive externalities, the government can provide subsidies. In Figure 1, a subsidy caused the MPC to shift downwards to MPC + subsidy. As a result, the private economic agents would equate the MPB to the MPC + subsidy and consume/produce at Q_s.



• One possible unintended consequence that might result in the government providing subsidies to address the positive externality is a budget deficit. As subsidies are part of government's expenditure, an increase in provision of subsidies would increase the expenditure, which results in a budget deficit.

Evaluation

• However, the unintended consequence of a budget deficit would only happen if a country has very low budget surplus or was in a balanced budget. If the country was having very high budget surplus, the increase in spending on the subsidies may not result in a deficit.

Requirement 2

- Another policy the government can implement is to provide for the good with positive externalities.
- The government can either provide it fully (0Qs) or provide partially (QPQs). An example
 of this is education. In providing for the good, the government would be financing it
 through taxes, thus the same unintended consequence of budget deficit may also occur.
 In addition, given that the government is not a profit motivated entity, there might not be
 incentive for it to produce in the most efficiency way. There might be wastages and
 redundancies, or low-quality services.

Evaluation

• However, the unintended consequence of inefficiency in the provision of the good by the government can be eliminated via joint provision. For example, under Land Transport Authority (LTA), the government owns the assets of the train and bus companies and builds the infrastructure while the private firms will bid for the contracts to run the service. This is also known as Private-Public-Partnership (PPP). There is more incentive to be efficient due to competitive pressure and private firms' profit motives.

Conclusion

• In conclusion, it is possible that the policies used to correct market failure due to positive externalities will always create unintended consequences. However, the government can have counter measures to reduce their negative effects.

Essay Question 4

The Covid-19 pandemic and rapid digital transformation have triggered massive job cuts in Malaysia, leaving many out of work. At the same time, businesses are struggling to find workers to bridge a critical skills gap.

Adapted from New Straits Times, 13 March 2021.

- (c) In light of the above events, explain the possible causes of unemployment in Malaysia. [10]
- (d) Discuss whether a policy of cutting interest rates is the most effective in solving Malaysia's unemployment problem. [15]

Suggested Answers

Part (a)

(a) In light of the above events, explain the possible causes of unemployment in Malaysia.

[10]

Introduction

- Unemployment refers to a situation where people who are able and willing to work are unable to get a job.
- In light of the Covid-19 pandemic and digital transformation, there is likely to be demanddeficient unemployment as well as structural unemployment.

- Due to the Covid-19 pandemic, one possible cause of unemployment in Malaysia is the deficiency of demand.
- During the Covid-19 pandemic, the Malaysian government imposed lockdown measures to control the spread of the disease. Shops and restaurants as well as entertainment outlets had to be closed, and workers had to work from home while students were engaged in home-based learning instead of attending school physically. These resulted in a fall in consumption (C).
- The fall in C results in a fall in AD, triggering a reverse multiplier effect.
- The result is a multiplied decrease in real national output from Y_F to Y₁ as shown in Figure 1.



• The fall in real output results in lower demand for labour results in workers being retrenched, hence resulting in demand-deficient unemployment in Malaysia.

Requirement 2

- As mentioned in the preamble, digital transformation has resulted in massive job cuts, thus causing higher unemployment in Malaysia.
- One reason is that the adoption of digital technology can result in the displacement of labour as certain types of work become replaced by machinery, resulting in workers being made redundant. For example, with the digitalisation of banking eg. use of digital banking apps, many banking transactions can be done online, reducing the need for consumers to visit the bank. This has resulted in a reduction in the number of physical branches of banks, so there is less demand for human bank tellers to serve customers at retail banks. Likewise at supermarkets, with self-checkout counters and e-payments, the need for human cashiers is reduced. Such digital technologies result in reduced demand for labour, leading to redundancies and retrenchment of workers, thus causing technological unemployment.
- Hence, this suggests that there is structural unemployment in Malaysia.

Conclusion

- Due to the Covid-19 pandemic and rapid digital transformation, the main causes of unemployment are demand-deficient unemployment and structural unemployment.
- (b) Discuss whether a policy of cutting interest rates is the most effective in solving Malaysia's unemployment problem. [15]

Introduction

• As explained in (a), the unemployment problem in Malaysia may be due to both demand-deficient unemployment and structural unemployment.

Requirement 1

- Malaysia can solve its unemployment problem by adopting an expansionary monetary policy of cutting interest rates.
- The Malaysia Central Bank may cut the interest rate it charges on commercial banks, causing the commercial banks to cut their interest rates as well. This fall in interest rate from R0 to R1 would stimulate an increase in investment from I0 to I1 as shown by the downward sloping Marginal Efficiency of Investment (MEI).
- Moreover, the lower interest rate encourages households to spend on credit especially for big-ticket items such as cars and home renovations or property purchases. This results in an increase in consumption expenditure.
- The increase in investment and consumption results in a rightward shift of the AD from AD0 to AD1. In this case, the autonomous increase in AD will lead to an eventual multiplied increase in national income.



• As shown in Figure 2, the increase in AD results in an increase in real output from Y0 to YF. The increase in output creates more jobs and causing a fall in unemployment, and hence the demand-deficient unemployment is resolved.

Evaluation

• The effectiveness of the cut in interest rates depends on the responsiveness of investment and consumption to the lower borrowing costs.

- Malaysia is faced with structural unemployment due to the rapid digital transformation. Hence supply-side policies are more appropriate.
- While the rapid digital transformation has caused job losses and retrenchment of workers, it also creates new jobs that require higher skills such as computer programmers, data analysts, software engineers, IT technicians etc. As the unemployed workers do not have the right skills to take up such jobs, they remain structurally unemployed
- Supply-side policies such as skill training can help to resolve the skills mismatch and thus reduce structural unemployment.
- Such skills training or skills upgrading programmes will help the unemployed workers to acquire the relevant skills that are needed to take up the available jobs created by the digital transformation, thus bridging the skills gap faced by businesses.

Evaluation

- The effectiveness of the skills training programmes depends on the receptiveness of workers to take up the training courses. The unemployed workers, especially those who are more senior in age, may be resistant to attending training courses.
- .

Conclusion

• In the final analysis, whichever policy is the most effective in solving a country's unemployment problem depends largely on the root cause of the unemployment.

Essay Question 5

- (e) Explain the possible causes of balance of trade deficit. [10]
- (f) Discuss how far the policy response to address balance of trade deficit is dependent on the cause of the deficit. [15]

Suggested Answers

Part (a)

(a) Explain the possible causes of balance of trade deficit. [10]

Introduction

• BOT deficit is defined as when M is higher than X, or when BOT is negative.

Requirement 1

• One possible cause of BOT deficit is relative price levels between a country and its trading partners.

- When the country's price level increased, its exports would be less price competitive as it is more expensive for foreigners. Quantity demanded for the country's exports would fall, and if the demand is price elastic or PED>1 X would fall.
- In addition, when the price of the country's domestically produced and sold goods increased, demand for imports increased, M would increase.
- When X decreased and/or M increased, BOT goes into a deficit.

- Another possible cause of BOT deficit is relative income levels between a country and its trading partners.
- BOT deficit might result if a country's income level is relatively higher than its trading partners.
- When the country's income level increased, the import expenditure for the country would increase as demand for imports increased.
- Given that BOT is X-M, when X decreased and/or M increased, BOT goes into a deficit if M is greater than X eventually.

Conclusion

• In conclusion, two of the possible causes of BOT deficit are relative income levels and relative price levels.

Part (b)

(b) Discuss how far the policy response to address balance of trade deficit is dependent on the cause of the deficit. [15]

Introduction

• Monetary, fiscal and supply-side policies can be used to address BOT deficit.

Requirement 1

- If the cause of the BOT deficit is due to an increase in the prices of that country's goods and services, the government may want to adopt an exchange rate policy.
- The government can depreciate its currency so that the prices of its exports would be cheaper, leading to an increase in demand.
- Conversely, the price of imports for the country would be higher, leading to a fall in quantity demanded for imports.
- If Marshall-Lerner condition holds (i.e., PED_X + PED_M > 1), X-M would increase, thus addressing a BOT deficit.
- However, if the cause of the BOT deficit was relative income, the government could adopt a contractionary demand-side policy, like reduce government spending (G) and/or increase income taxes (T), which would reduce the AD of the economy.
- The reduction in AD would result in multiple falls in real national income through the reverse multiplier process.
- This fall in income level would induce households to reduce demand for imports, thus reducing M.

Evaluation

- However, while different policies are required to address different causes of BOT deficit, some policies could still be adopted to address the problem indirectly.
- For example, a country can use supply-side policies to increase the productivity of the economy's FOPs. As a result, the quality of FOPs increased, and the economy's AS would shift to the right, resulting in a fall in general price levels.
- As the prices of the country's goods and services fall, its exports and domestically produces and sold goods would be more price competitive and X would increase and/or M would fall, thus BOT deficit may be corrected.

- Size of a country's multiplier might influence the policy response.
- For countries with very high mpw, their size of the multiplier would be very small. For example, if the mpw is 0.9 it means that for every initial increase of \$1 in the AD (injection), the increase in real national income would only be 1.1 times. This is in comparison to another country with mpw of 0.1, which would result in the real national income increasing by 10 times.
- For a country with small k to use demand-side policy, it will have to have a very large change in AD for it to be effective in causing the desired level of change in income.

Evaluation

However, this factor may only be appliable to a small group of very small and open economies.

Conclusion

In conclusion, the causes are important factor to consider but it is insufficient to fully influence the choice of policy response.

Essay Question 6

"Cheap consumer products are sold to us as some achievement of globalisation, but they have come at the price of middle-class jobs, craftmanship and stable communities."

Elizabeth L Cline, author of Overdressed: The Shockingly High Cost of Cheap Fashion

- (g) Explain how globalisation may worsen the standard of living of a country. [10]
- (h) Discuss whether government policies used to correct market failure due to positive externalities will always create unintended consequences. [15]

Suggested Answers

Part (a)

"Cheap consumer products are sold to us as some achievement of globalisation, but they have come at the price of middle-class jobs, craftmanship and stable communities."

Elizabeth L Cline, author of Overdressed: The Shockingly High Cost of Cheap Fashion

(a) Explain how globalisation may worsen the standard of living of a country. [10]

Introduction

- Globalisation refers to increasing integration of national economies in terms of financial flows, trade, movement of factors of production, ideas, and changes in information and technology.
- Standard of living (SOL) of a country can be unpacked by considering both material and non-material aspects. Material SOL refers to the amount of goods and services that consumers have to satisfy their material needs and wants, whilst non-material SOL refers to the quality of life within the country, which includes considering the education level, healthcare quality and level of income inequality.

- Due to the increasing interconnectedness of economies, there is greater instability / volatility and higher likelihood of contagion. An example could be the 2009 global financial crisis, where the rapid and sudden decline of the US economy led to negative repercussions on many other countries, especially her trading partners. When the economies of large or significant trading partners suffer falling real national income due to poor economic conditions, this could result in a decrease in X of the country. In addition, there could be a fall in foreign direct investment into the country, since these other economies would have less ability to channel investments or capital into other countries.
- When X and I falls, AD would also fall, which prompts firms to reduce their production of goods and services. Thus, firms might lay off some workers to cut their costs, triggering a reverse multiplier effect.
- The result is a multiplied decrease in real national output from Y_{F} to Y_{1} as shown in Figure 1.
- As a result of economic contraction and a loss of jobs, this would lead to falling material SOL, as people would be able to consume fewer goods and services.



 Globalisation could also create more pollution and exhaustion of natural resources, since there is increased production of goods and services. MNCs are seen as exploitative and lacking in social responsibility, setting up their operations in a country where they can exploit the cheap resources and having no regard for the damage they may cause to the environment. With more pollution and environmental degradation, this would lead to a worsening of the air quality, and thus there may be more health issues amongst citizens. Quality of life and hence non-material SOL may worsen.

Conclusion

• In conclusion, globalisation may worsen both the material and non-material SOL of a country.

Part (b)

(b) Discuss whether protectionism is the best way to reduce the negative effects that globalisation may bring about. [15]

Introduction

- Protectionism refers to the restriction of free trade to protect one's own domestic economy. This could entail the raising of trade barriers, such as imposing tariffs on imported goods and services.
- To reduce these negative effects, protectionism could be adopted, but other policies to improve the economy's competitiveness could also help.

- Protectionism could entail the imposition of taxes on imported goods.
- If a tax is imposed on an imported good, this increases the price of imports from P_W to P_T. At the price P_T, domestic producers will supply Q₂, while quantity demanded is Q₃. The amount of imports is now reduced to Q₂Q₃, which implies that import expenditure falls, as given by the area Q₂beQ₃ from the initial import expenditure given by Q₁cfQ₄.
- Thus, since import expenditure M falls, AD rises. Thus, real national output increases. At the same time, firms need more workers to produce the goods. Thus, employment also rises. This helps to counteract the possible rise in cyclical and/or structural unemployment that globalisation may bring about.
- In addition, with an import tariff, the government also collects more tax revenue, as represented by area 'abed' in the diagram below.



Evaluation

 However, protectionism through the imposition of import tariffs could result in a fall in consumer surplus represented by P_WP_Tdf. There is also a net loss in consumer welfare shown by the shaded areas 'abc' and 'def'.

Requirement 2

- The use of supply-side policies will broadly help to achieve this aim of increasing competitiveness of an economy, in terms of export price and quality competitiveness, as well as attracting and retaining FDI and skilled labour within the country.
- Investing in R&D, which could raise the quality of the good whilst lowering the costs of production. For example, the use of automation could help to increase productivity as more goods can be produced per day, thereby lowering the average costs of production. This allows producers to set lower prices for the exported goods, raising export price competitiveness. Thus, export revenue rises. If product innovation is successful, export revenue increases too. The country will be in a better position to gain from globalisation, rather than lose out in terms of trade.

Evaluation

 However, supply-side policies aimed at increasing competitiveness of an economy might not achieve the desired outcomes, as these policies may not be effective. For example, investing in R&D may not bring about successful product and process innovation, because the R&D may fail.

Conclusion

• Protectionism could be used as a stop-gap measure especially if there needs to be a more immediate solution to reduce the negative effects, especially since supply-side policies have a long time-lag and are only more effective in the long-run.