

Name: _____ Index Number: _____ Class: _____



DUNMAN HIGH SCHOOL
Preliminary Examination
Year 6

ECONOMICS

(Higher 2)

Paper 2

9757/2

12 September 2017

2 hour 15 minutes

08:30 am – 10:45 am

Additional Materials:
Writing Papers
3 Strings

READ THESE INSTRUCTIONS FIRST.

Answer **three** questions in total, of which **one** must be from Section A, **one** from Section B and **one** from **either** Section A or Section B.

Write your answers on the separate writing paper provided.

Write your name and civics class on all pieces of work handed in.

Write in dark blue or black pen on both sides of the paper.

You may use a soft pencil for any diagrams, graphs or rough working.

Do not use staples, paper clips, highlighters, glue or correction fluid.

Please start on a **fresh** sheet of paper for a new question.

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

At the end of the examination, please securely fasten all **three** essays **separately**, using the strings provided.

Please tick all questions attempted in the boxes below.

Section A			Section B		
Q1	Q2	Q3	Q4	Q5	Q6

This document consists of **2** printed pages including this cover page.

[Turn over

Answer **three** questions in total.

Section A

One or two of your three chosen questions must be from this section.

1. Sugarcane, a water-intensive crop that takes 10 to 18 months to harvest, has many uses. It can be made into sugar, a natural sweetener for food and fermented to produce sugarcane ethanol, a biofuel for the transport sector. In recent years, a number of developments have taken place in the Indian sugarcane market. In addition to rising fertiliser costs, sugarcane crop suffered from severe damage from a faltering monsoon in India. Amid India's relatively strong economic growth that encourages higher food consumption, the Indian government has raised the minimum support price of sugarcane ethanol to ensure its adequate supply.

Discuss the impact these events are likely to have had on consumer expenditure on sugarcane and its related markets in India. [25]

- 2 (a) Explain the cost savings that may arise from the expansion of firms and industries. [10]
- (b) A report by a German magazine claimed that car-makers had colluded for decades on prices to the detriment of foreign rivals. Some German car-makers however commented that it is more common for them to compete, although the smaller ones may cooperate in areas such as sourcing to negotiate better contracts with suppliers.

Discuss whether cooperation, collusion or competition is the best strategy to increase a firm's profits. [15]

- 3 (a) With reference to examples, explain why rational decision-making by consumers might not be aligned to the government. [10]
- (b) Discuss the extent that knowing the root cause of the misalignment is sufficient in determining the policy measure to adopt. [15]

Section B

One or two of your three chosen questions must be from this section.

- 4 (a) Using the circular flow of income, explain how a fall in exports might impact unemployment in an economy. [10]
- (b) Discuss whether the size of multiplier is the main factor in determining the choice of macroeconomic policies to reduce unemployment in Singapore. [15]
5. With the economy much closer to full employment now and a strong likelihood of a fiscal stimulus next year... we expect the US Federal Reserve to accelerate the pace of interest rate hikes next year.

Paul Ashworth, Chief U.S. Economist, Capital Economics
Source: <http://money.cnn.com>, 15 Dec 2016

- (a) Explain the need for the US Federal Reserve to accelerate the pace of interest rates hikes. [10]
- (b) Discuss the view that price stability should always take priority over other macroeconomic objectives. [15]
- 6 (a) Using examples, explain why comparative advantage of a country might change over time. [10]
- (b) To what extent should changing comparative advantage be used as a justification for protectionism? [15]

End of Paper

Suggested Answers for H2 Economics (9757) Paper 2

1. Sugarcane, a water-intensive crop that takes 10 to 18 months to harvest, has many uses. It can be made into sugar, a natural sweetener for food and fermented to produce sugarcane ethanol, a biofuel for the transport sector. In recent years, a number of developments have taken place in the Indian sugarcane market. In addition to rising fertiliser costs, sugarcane crop suffered from severe damage from a faltering monsoon in India. Amid India's relatively strong economic growth that encourages higher food consumption, the Indian government has raised the minimum support price of sugarcane ethanol to ensure its adequate supply.

Discuss the impact these events are likely to have had on consumer expenditure on sugarcane and its related markets in India. [25]

Question Analysis

This question aims to test candidates' ability to

- identify related (and more significant) markets to the sugarcane market based on the preamble → food market and ethanol market
- identify and explain the relevant elasticity concepts for the 3 markets – YED, PED, PES
- explain the events of the (1) rise in fertiliser costs and poor harvest of sugarcane crop, (2) strong economic growth and (3) rise in minimum support price of ethanol on the consumer expenditure of the 3 markets → to analyse the changes in the product of equilibrium P & Q

Food Market

- <P> The events are likely to cause demand to rise and supply to fall, leading to a rise in total expenditure (TE) on food.
- <E> Relatively strong economic growth → rise in purchasing power → increased willingness and ability to buy more normal goods → encourages higher food consumption since food is a normal good but a necessity ($YED < 1$) → less than proportionate rise in demand for food
- <E> Rise in fertiliser costs and faltering monsoon → rise in production costs for farmers and poorer harvests for water-intensive agricultural crops e.g. rice respectively → supply falls

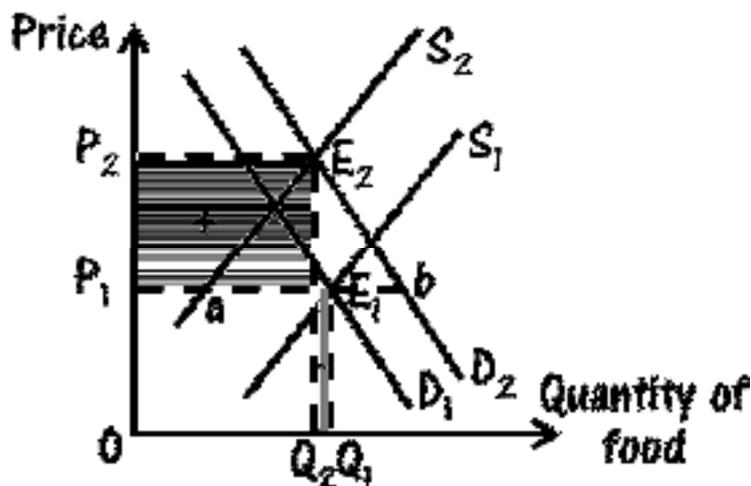


Figure 1: Market for Food

- <E> Supply falls from S_1 to S_2 and demand rises from D_1 to D_2 , which may be smaller than the fall in supply as food has a $YED < 1$. At the original price level P_1 , there exists a shortage of 'ab'. Thus, consumers bid up the price of food so as to obtain food. As price rises, utility-maximising consumers constrained by their budget cut back on quantity demanded for food, while the output levels that can only be produced at higher marginal cost now become more profitable, incentivising firms to raise quantity supplied of food. This market adjustment process continues until the shortage is eliminated, where quantity

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demand equals quantity supplied. This results in the equilibrium price to rise from P_1 to P_2 and equilibrium quantity to fall from Q_1 to Q_2 .

- <E & L> For the rise in demand, TE on food rises, regardless of price elasticity of supply (PES). For the fall in supply, whether TE rises or falls depends on price elasticity of demand (PED) for food, which is likely to be < 1 as there are no alternative substitutes of food, and food is a necessity. TE rises from $OP_1E_1Q_1$ to $OP_2E_2Q_2$ as the rise in price (horizontal striped shaded + area) leads to a less than proportionate fall in quantity demanded (vertical striped shaded - area). As such, regardless of the relative shifts of demand and supply, consumers' expenditure on food rises.

EV: to consider the type of food to determine the impact of the events on TE on food

- different PED of different foods, e.g. staples such as rice, potatoes, lentils consumed by Indians could have a much more price inelastic demand as they have a much higher degree of necessity than other types of food such as processed food → much larger increase in consumer expenditure for staples than processed food, ceteris paribus
- more luxurious type food such as meat, pork or fish vs. more basic necessities type food such as vegetables, staples → former faces a larger rise in demand than the latter → larger rise in consumer expenditure for former than latter, ceteris paribus
- water-intensive crops like sugarcane, rice face a larger fall in supply than less water-intensive crops like oilseeds, millets and pulses, and assuming $PED < 1$ → larger rise in consumer expenditure for such food
- agricultural crops vs. non-agricultural food like meat, pork or fish may face a much smaller fall in supply as they are less affected by the rising fertiliser costs and faltering monsoon, and assuming $PED < 1$ → smaller rise in consumer expenditure for non-agricultural food, ceteris paribus

Sugarcane Market

- <P> The events are likely to cause rise in demand and fall in supply → rise in sugarcane TE
- <E> Relatively strong economic growth encourages higher food consumption (as explained earlier), including sugar used in the production of many food → rise in derived demand for sugarcane, since it is a key factor of production (FOP) used in the production of sugar
- <E> At the same time, if the minimum support price of sugarcane ethanol were to rise → quantity supplied will likely rise as the output levels that can only be produced at higher marginal cost now become more profitable → rise in derived demand for sugarcane, a key factor input used in the production of sugarcane ethanol
- <E> As explained earlier, rise in fertiliser costs and faltering monsoon → supply falls for water-intensive crops like sugarcane.

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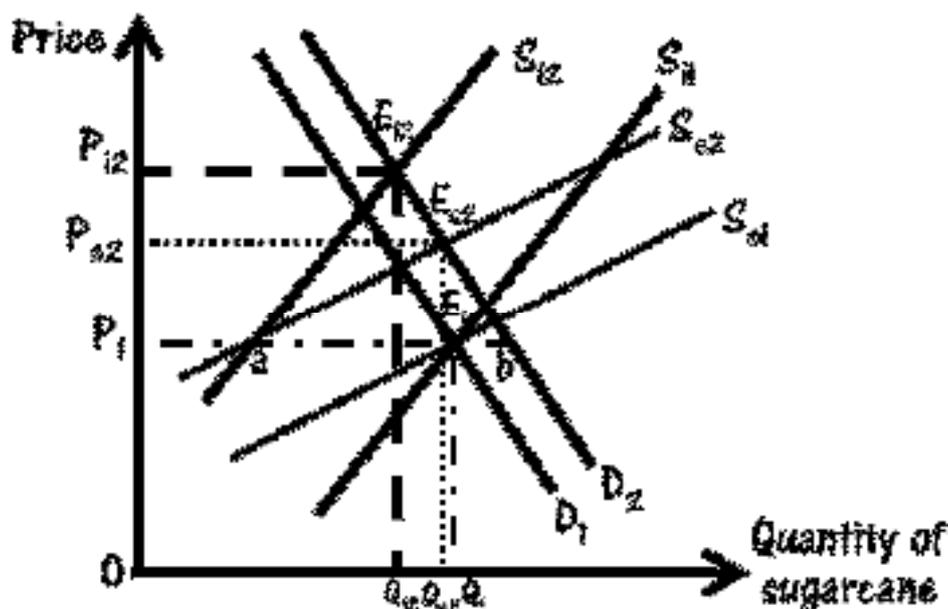


Figure 2: Market for Sugarcane

- <E> Supply falls from S_1 to S_2 and demand rises from D_1 to D_2 . The supply fall is likely to exceed the demand increase, as sugarcane is a water-intensive crop, and Indian consumers can still switch to other relatively cheaper sugar alternatives like honey or other spices to flavour their food instead of relying on the pricier sugar. At the original price level P_1 , there exists a shortage of 'ab', which exerts an upward pressure on price. As explained earlier, market adjustment process occurs \rightarrow equilibrium price rises and equilibrium quantity falls.
- <E & L> As explained earlier, a rise in demand leads to a rise in TE. Demand for sugarcane is likely to be < 1 as sugarcane is a necessity since it is a key FOP used in the production of sugarcane ethanol and sugar \rightarrow TE rises when supply falls. Regardless of the relative shifts of demand and supply, consumers' expenditure on sugarcane rises (consumers refer to the producers of sugarcane ethanol and sugar that use sugarcane as FOP).

EV: to consider the different PES of different types of agricultural crops to determine the impact of the events on TE for the different types of crops

- Sugarcane takes 10 to 18 months to harvest \rightarrow relatively price inelastic supply compared to crops that take 2 months or less to harvest, e.g. broccoli, cucumbers, lettuce \rightarrow for the same extent of fall in supply, TE rises by a larger extent from $0P_1E_1Q_1$ to $0P_{12}E_{12}Q_{12}$ instead of $0P_{e2}E_{e2}Q_{e2}$.
- Compared to crops that take a much longer time (3 years or more) to harvest, e.g. tea, coffee and coconut \rightarrow a very price inelastic supply, the rise in TE on sugarcane is smaller.

Ethanol Market

- <P> The events are likely to cause rise in demand and fall in supply \rightarrow rise in ethanol TE
- <E> Since sugarcane ethanol is in competitive supply with food, rise in food production \rightarrow producers allocate more resources to produce more food instead of ethanol due to increased incentive of earning higher TR when food demand rises (as explained previously). Also, the supply of sugarcane (FOP of ethanol) falls as explained previously. This is consistent with the fall in production of sugarcane (Q_1 to Q_{12} or Q_{e2}). As such, there is a rise in marginal cost of production of ethanol \rightarrow fall in supply of ethanol
- <E> There are other alternative energy sources e.g. biofuel made using other FOPs such as corn, or renewable energy, or shale oil, or petrol. But there is a need for consumers and transport industries to switch to hybrid vehicles so as to use sugarcane ethanol than conventional sources such as petrol or diesel. Also, alternative energy sources could be

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relatively pricier than sugarcane ethanol, since India produces sugarcane while alternative energy is mainly imported. Thus, there is a lack of close substitutes for consumers to switch to → sugarcane ethanol could be price inelastic in demand.

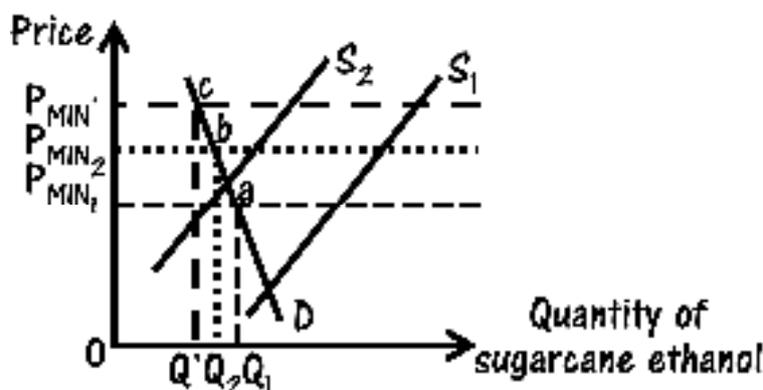


Figure 3: Market for Sugarcane Ethanol

- <E & L> Given a fall in ethanol supply* from S_1 to S_2 , if the minimum support price of sugarcane ethanol were to rise from P_{MIN_1} to P_{MIN_2} → TE on ethanol rises from $0P_{MIN_1}aQ_1$ to $0P_{MIN_2}bQ_2$ for a price inelastic demand. TE also rises from $0P_{MIN_2}bQ_2$ to $0P_{MIN'}cQ'$ if the minimum support price rises from P_{MIN_2} to $P_{MIN'}$ (i.e. minimum support price is always above market equilibrium price before and after the fall in supply)
- * Candidates can also consider a simultaneous increase in demand due to strong EG → consumers have greater willingness and ability to buy hybrid vehicles → rise in demand for sugarcane ethanol (joint demand / complementary good) and then analyse accordingly

EV: to consider the following to determine the overall impact of the events on TE

- time period: SR vs LR – over time, if the minimum support price for sugarcane ethanol were to continue to rise → more resources e.g. land, labour and sugar will be diverted to sugarcane ethanol production and less to food producers; entry of new producers who may start to switch away from production of other agricultural crops to sugarcane ethanol → food and sugar (as food) supply falls while sugarcane ethanol supply rises → TE on food rises further, while TE on sugarcane ethanol also rises (due to rise in minimum support price) ceteris paribus. However, it still depends on factors such as:
 - ❖ magnitude / extent of the rise in minimum support price of sugarcane ethanol to incentivise more production of sugarcane ethanol → if the rise in minimum support price is minimal (Rs 48.50 to Rs 49.50 per litre in Dec 2014¹) → may not incentivise producers to raise quantity supplied of sugarcane ethanol by a large extent or may not be sufficient to incentivise entry of new producers → abovementioned impact may not occur
 - ❖ price of other products relative to other sugarcane ethanol, e.g. potable alcohol (that use sugar as FOP) seems to fetch a higher price than ethanol in India → producers lack incentive to raise. India also implements minimum support price on other goods e.g. cotton, soyabean, wheat, barley etc. → abovementioned impact may not occur
- rate of technological advancements → with improvement in technology to reduce costs of production of food, sugarcane and ethanol etc. or develop more fuel efficient or hybrid vehicles more cheaply → TE on these items could fall or rise more slowly / by smaller extent

¹ http://www.business-standard.com/article/economy-policy/petroleum-ministry-considers-ethanol-price-hike-as-distilleries-balk-at-supply-115092400229_1.html

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Level	Descriptor	Marks
1	<ul style="list-style-type: none"> - Shows some knowledge of demand and supply and elasticity concepts. - May not fully address the question and/or may contain serious conceptual errors. - Inadequate and/or inaccurate explanation that is mostly irrelevant to question. - Only analyses event on sugarcane market. 	1 – 8
2	<ul style="list-style-type: none"> - Relevant answer but theory may be incompletely explained. - Attempts to apply some elasticity concepts e.g. YED, PED, PES for the different markets, but lacks adequate analysis. - Some ability at graphs but incomplete explanation in MAP. - Only analyses events on 2 markets, 1 of which is the sugarcane market. - Analysis of events on 3 markets, but did not consistently address the question on consumer expenditure for <u>all</u> 3 markets, e.g. only explains changes in P and Q. 	9 – 14
3	<ul style="list-style-type: none"> - For a well-developed analysis on how the events affect the consumer expenditure on the sugarcane market and related markets, accompanied with well-labelled and well-explained graphs. - Application and analysis of 3 relevant elasticity concepts, YED, PED and PES for the different markets (per market → 2 elasticity concepts required). - For top marks, need to incorporate the right analysis for the sugarcane ethanol market that includes a combined market on minimum support price + fall in supply. - Maximum 15m if does not explain sugarcane ethanol market. - Sugarcane + sugarcane ethanol + another market (may not be food market) → higher marks than sugarcane + food + another market (no sugarcane ethanol) 	15 – 20
E1	Unexplained evaluative statement.	1
E2	<ul style="list-style-type: none"> - Some attempt at evaluation, but are mostly summative conclusion. - Evaluation is relevant to the question but does not fully explain the judgment or does not base it on relevant analysis. 	2 – 3
E3	Able to provide a reasoned judgement on the change or extent of change in consumer expenditure on e.g. different types of food and/or agricultural crops, and/or considers SR vs LR perspective and/or challenges relevant assumptions.	4 – 5

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- 2 (a) Explain the cost savings that may arise from the expansion of firms and industries. [10]

Question Analysis

This is a simple content question that aims to test candidates' ability to

- identify and explain the different types of internal economies of scale (EOS) when firms grow
- identify and explain the different types of external EOS due to industries' expansion

Cost Savings due to Firms' Expansion

- <P> There are 2 types of internal EOS that firms enjoy when they grow in size, technical EOS and non-technical / firm EOS, leading to cost savings for the firm.

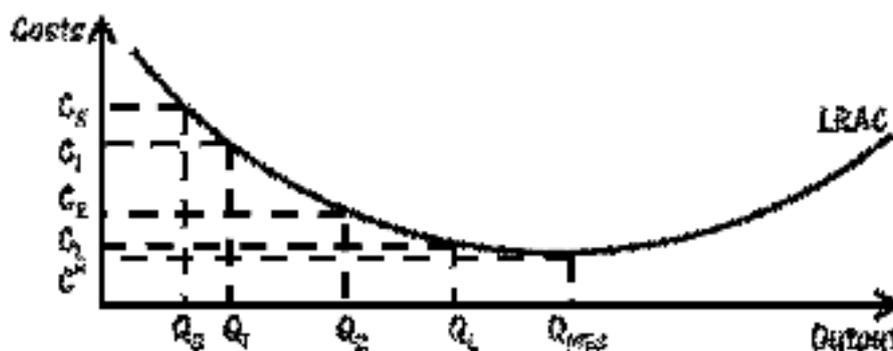


Figure 1: Cost Savings arising from Internal EOS

Technical EOS (explain any ONE)	Non-Technical / Firm EOS (explain any ONE)
<ul style="list-style-type: none"> • <E> Technical EOS refers to cost savings that arise typically due to the expansion in the size of a plant. • <E> (1) Some types of capital equipment can greatly enhance productivity but are too large and expensive to be efficiently utilised by small firm, thus it will not find profitable to invest in such machines as the average costs of production (AC) will be very high (C_S). Large firms with much higher output are better able to <i>spread out such costs over their large output</i> (C_L), making it more viable for them to use such machines → enjoys <u>indivisibilities of factor inputs</u>. • <E> For e.g. a car manufacturer need to be of a sizable scale so that it can fully optimise and utilise huge and costly large robots to produce cars more cost efficiently on a large-scale basis, such as to: <ul style="list-style-type: none"> ➢ process a wide variety of parts by using technology like RFID tags² ➢ spot weld car body panels² ➢ perform tasks like screw driving, windshield installation, wheel mounting, car painting and spraying coatings like sealants, primers and adhesives² etc. • <E & L> Highly repeatable, robots never tire or get distracted, thus every cycle is performed the same way², improving productivity. As the car manufacturer ↑ production from Q_1 to Q_2, AC ↓ from C_1 to C_2. 	<ul style="list-style-type: none"> • <E> Non-technical EOS refers to the non-plant size / non-production process related cost savings experienced as the size of the firm increases. • <E> (1) Firm's expansion → enjoy <u>administrative / managerial EOS</u> by hiring professionals to specialise in different work areas. • <E & L> For e.g. a large car manufacturer can hire managers to engage in organisational planning to take care of administrative, logistics matters etc. → ↑ productivity → ↑ output from Q_1 to Q_2 → ↓ AC from C_1 to C_2. • <E> (2) Another firm EOS that can be enjoyed is <u>marketing EOS</u>, by buying factor inputs in bulk. Suppliers of these inputs, in their eagerness to secure the firm's orders, will often offer a discount on its purchase → ↓ firm's AC. Also, when large firms

² <http://www.acieta.com/why-robotic-automation/robotic-solutions-industry/automotive-applications>

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- | | |
|--|--|
| <ul style="list-style-type: none"> • <E> (2) Another technical EOS that firms can enjoy is <u>specialisation</u> or division of operations / labour – by assigning workers to specific roles, daily repetition allows the workers to accumulate skills and knowledge (learning by doing), thus \uparrow the output per worker $\rightarrow \uparrow$ productivity. Total output \uparrow at a faster rate $\rightarrow \downarrow$ AC. • <E & L> For e.g. Henry Ford adopted specialisation of labour by introducing the use of an assembly line to assemble the Ford Model T car \rightarrow allowed workers to specialise in a particular section of production – some workers specialise in assembling doors, others in painting of the doors etc. This assembly production method \uparrow car production by 8 times $\rightarrow \uparrow$ productivity. \uparrow output from Q_1 to $Q_2 \rightarrow AC \downarrow$ from C_1 to C_2. | <p>advertise, the cost is spread over a larger output \rightarrow advertising expenditure per unit of output sold becomes very low.</p> <ul style="list-style-type: none"> • <E & L> For e.g. large car manufacturers Toyota buy factor inputs like aluminium or steel in bulk quantities \rightarrow enjoy larger bargaining power \rightarrow negotiate for lower prices from suppliers. Advertisement cost is also spread over the large volume of vehicles sold by Toyota \rightarrow advertising cost per car is very low. \uparrow output from Q_1 to $Q_2 \rightarrow \downarrow$ AC from C_1 to C_2. |
|--|--|

Cost Savings due to Industries' Expansion

- <P> External EOS refers to the reduction in the firm's AC arising from industry's expansion.

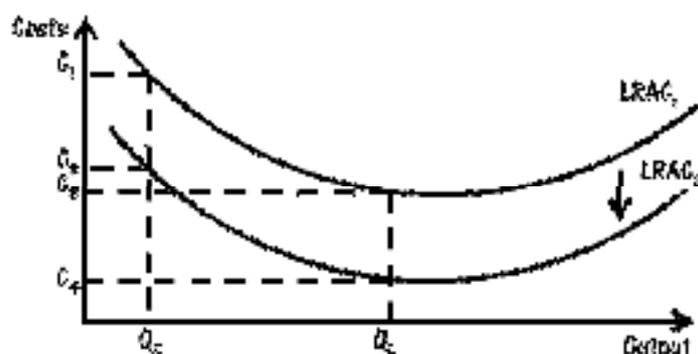


Figure 2: Cost Savings arising from External EOS

- <E> (1) Economies of Concentration / Economies of Agglomeration: As firms increasingly concentrate within a specific geographical area, they will benefit from sharing a larger pool of skilled labour, improvements in infrastructure (e.g. transport, telecommunications, utilities, banking) and the establishments of firms providing supporting services.
- <E & L> A firm's productivity \uparrow with proximity to similar firms via urban agglomeration EOS³ – e.g. automobile firms in Detroit lower their AC by sharing parts suppliers³ as they can obtain factor input supplies faster than if the automobile firms were located far away from suppliers \rightarrow productivity \uparrow and with \downarrow transport costs \rightarrow regardless of firm's size, a firm that produces a small or large output, Q_s or Q_L , enjoys cost savings where the firm's AC falls from C_1 to C_2 and C_3 to C_4 respectively.
- <E> (2) Economies of Information: As an industry expands, cost savings can be achieved from the sharing of knowledge and information. The firms in the same industry may jointly set up research facilities. AC will be lowered for all firms as the R&D costs are spread across all firms in the same industry. There is also greater scope for mutual cooperation in R&D to develop common industry standards so that there will be less duplication and wastage in terms of developing rival technologies.
- <E> Car manufacturers engage in an exchange on technical issues in order to accelerate the pace and quality of innovations⁴ \rightarrow improves R&D success rate \rightarrow productivity \uparrow via

³ http://siteresources.worldbank.org/INTWDR2009/Resources/4231006-1225840759068/WDR09_10_Ch04web.pdf

⁴ <http://in.reuters.com/article/germany-emissions-volkswagen/update-1-vw-says-cooperation-with-rivals-is-common-industry-practice-idINL5N1KH7NR>

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sharing / dissemination of R&D information than if such information were kept confidential
 → regardless of firm's size, the firm enjoys cost savings

(b) A report by a German magazine claimed that car-makers had colluded for decades on prices to the detriment of foreign rivals. Some German car-makers however commented that it is more common for them to compete, although the smaller ones may cooperate in areas such as sourcing to negotiate better contracts with suppliers.

Discuss whether cooperation, collusion or competition is the best strategy to increase a firm's profits. [15]

Question Analysis

This question aims to test candidates' ability to

- explain the 3 different strategies to help boost a firm's profits
- explain the limitations of the 3 different strategies using FRESH criteria

Thesis: strategy → helps to ↑ profits	Anti-Thesis: limitations of strategy in ↑ profits
<ul style="list-style-type: none"> • <P> Cooperation refers to firms working together for a common interest through the exchange, sharing of complementary capabilities and resources, or joint development of products, technologies or services for the purpose of mutual benefits⁵ → ↑ a firm's profits (π) via ↓ AC. <p style="text-align: center;">Figure 3: Impact of Cooperation on a Firm's Profits</p> <ul style="list-style-type: none"> • <E & L> E.g. cooperation via <u>sourcing to negotiate better contracts with suppliers</u> (banding of firms) as the joint purchase allows these banded firms to have greater bargaining power → better discounts for factor inputs → LRAC shifts downwards from LRAC₁ to LRAC₂ → regardless of firm's size, the firm enjoys cost savings. Ceteris paribus, a firm that produces at the π-max output Q, where MC cuts MR from below ↑ a firm's π (PWXC₁ to PWYC₂). • <E & E> E.g. carmakers are <u>cooperating in areas of technology development</u> where previously they might have tried to compete, in the light of the threat 	<ul style="list-style-type: none"> • <P> Cooperation may breakdown / fail due to distrust between firms, lack of commitment, higher possibility of information leaks to third parties etc. • <E & E> The success of cooperation depends on whether the firms that cooperate have a collectively held confidence orientation towards each other as well as a willingness and confidence to build trust among each other.⁵ However, firms have their own vested interests, especially for firms that are direct competitors of each other. If there is <u>distrust between firms</u> e.g. suspecting the firm that liaised with the supplier may have bribed the supplier for even better discounts but not available to other firms, cooperation fails. • <E & E> Owing to the relationship commitment of the firms, there needs to be a willingness to contribute to the cooperative relationship such as sharing of R&D information, which could imply sacrificing short-term benefits to achieve long-term gains.⁵ However, if firms <u>lack commitment</u> to share R&D information due to their own vested interests, esp. for direct competitors, information sharing breaks down → cooperation fails. Also, such <u>information sharing is a public good</u> that exhibits the features of non-rivalry & non-excludability (explain) → may cause

⁵ <https://link.springer.com/content/pdf/10.1057%2Fdbm.2010.23.pdf>

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<p>posed by Silicon Valley firms to their businesses in developing autonomous driving systems.⁶ Via such cooperation, the success rate of R&D $\uparrow + \downarrow$ risks of R&D failures (thus \downarrow costs of product development) help to \downarrow AC \rightarrow $<L>$ \uparrow a firm's π $<$explain with reference to Figure 3$>$</p> <ul style="list-style-type: none"> • $<E \& E>$ E.g. 3 big carmakers – BMW, Daimler and VW's Audi would launch new traffic monitoring services in 2017 that give drivers a view of road conditions along their entire route, based on video data collected by their jointly-owned navigation mapping services firm.⁶ This is an example of cooperation in terms of <u>resource and information sharing</u> \rightarrow $<L>$ helps to \downarrow AC \rightarrow \uparrow a firm's π $<$explain with reference to Figure 3$>$ • $<E \& E>$ Cooperation can also be between firms that use similar technology but may not be direct competitors of each other \rightarrow e.g. Renault will be working with Waze on a Google Android Auto prototype for a navigation app that shows traffic conditions and identifies 13,000 electric car-charging stations across France.⁶ \rightarrow an example of cooperation in terms of <u>resource and information sharing</u> \rightarrow $<L>$ helps to \downarrow AC \rightarrow \uparrow a firm's π $<$explain with reference to Figure 3$>$ • $<E \& L>$ In general, firms that cooperate complement and enhance each other in different areas such as production, product development and entry into new markets⁵ \rightarrow \downarrow AC and/or \uparrow AR and \downarrow PED \rightarrow \uparrow firm's π $<$explain with use of graph$>$. This could be in the form of technology and capability transfers that \downarrow operation-related costs and risks⁵, synergistic outcomes via inter-firm cooperation e.g. better product innovation / development due to pooling of talents and resources that a single firm cannot achieve alone⁵ \rightarrow \uparrow AR and \downarrow PED \rightarrow \uparrow firm's π 	<p>firms to wait for other firms' R&D especially since R&D involves huge sunk costs and the problem is worsened if there is distrust between firms in terms of information sharing \rightarrow <u>free-riding problem</u> \rightarrow cooperation fails</p> <ul style="list-style-type: none"> • $<E \& L>$ Firms that are direct competitors of each other e.g. carmakers may be less willing to cooperate to share information as it may mean if their direct competitors obtain such information, it could \uparrow their R&D success rate to develop newer car models \rightarrow may \downarrow their own π • $<E \& E>$ As the number of firms that cooperate \uparrow \rightarrow higher possibility of <u>information leaks</u> to third parties via \uparrow possibility of hacking incidents or \uparrow possibility of information leakage due to \uparrow number of employees \rightarrow deters inter-firm cooperation • $<E \& L>$ Longer cooperative relationship between firms may turn into '<u>group thinking</u>' (herd mentality) \rightarrow may hamper creativity & innovation efforts⁵ \rightarrow slows down R&D process \rightarrow \downarrow π • $<E \& L>$ Resource sharing may cause over usage \rightarrow congestion issues esp. for telecommunications firms that share the same infrastructure \rightarrow \downarrow demand \rightarrow \downarrow π if \downarrow AR $>$ \downarrow AC ➤ EV: firms that are direct competitors of each other are less likely to engage in cooperation as R&D spill-overs via information sharing may \downarrow their own π and greater possibility of distrust between firms \rightarrow more likely to compete aggressively
<ul style="list-style-type: none"> • $<P>$ There are 2 types of collusion, explicit collusion (cartel) and tacit collusion take may help boost a firm's π by \downarrow costs of aggressive competitive tactics. • $<E \& L>$ A cartel aims to \uparrow overall profits by restricting total output of all members to a level that will jointly maximise the combined profits for all its members. Firms behave like a monopoly to jointly determine the profit-maximising output & price, instead of behaving like a competitive firm that \downarrow the firm's profits. This entails individual firms being 	<ul style="list-style-type: none"> • $<P>$ For successful explicit collusion to occur, certain conditions must be present. (1) The number of sellers cannot be too numerous. If there are many sellers, each firm finds it easier to cheat and produce more than the pre-agreed quota, as it is more difficult for other members to find out who cheated \rightarrow implies global oil industry comprises a few dominant firms.

⁶ <http://www.businessinsider.com/r-car-industry-puts-cooperation-on-show-in-battle-against-silicon-valley-firms-2016-9>

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assigned a pre-agreed quota to be adhered to. The member firms agree openly upon a common uniform price in the market.

- <E & L> Output is restricted to maximise their combined $\pi \rightarrow$ prices move closer to P_M and output towards Q_M . Ceteris paribus, a firm's $\pi \uparrow$.

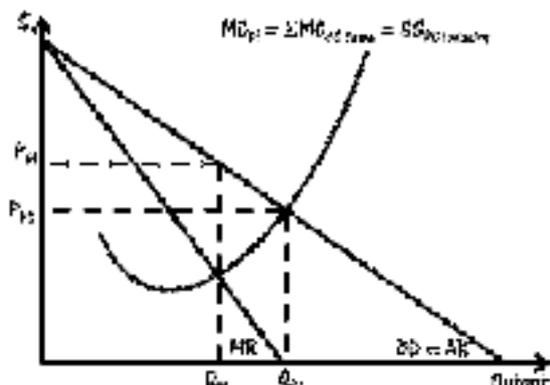


Figure 4: Impact of Explicit Collusion on a Firm's Profits

- <P & L> Tacit collusion \rightarrow price leadership model where the smaller firms 'take' / match the price dictated by the market leader \rightarrow like cartels, these firms act like a monopoly instead of a competitive firm \rightarrow limits competition between firms \rightarrow \downarrow advertising expenditure \rightarrow \downarrow AC \rightarrow \uparrow a firm's π
- <E> Major German automakers – Volkswagen, Audi, BMW, Porsche and Daimler may have formed a secret cartel in the 1990s to collude on diesel emissions. These companies met in secret working groups to discuss 'the technology, costs, suppliers and even the exhaust gas purification of its diesel vehicles'. They may have colluded to fix prices of a diesel emission treatment called AdBlue, a liquid solution used to counteract a vehicle's emissions.⁷
- EV: the smaller firms are unlikely to earn as much profits as the larger firms / market leaders

- <P & L> Price competition: firm may be able to \downarrow price via outsourcing \rightarrow cost savings passed on to consumers in the form of \downarrow prices \rightarrow if firm is able to induce consumers to switch away from other firms'

(2) The member firms must have control of a large market share. If firms in the cartel control only a small share of the market, they will face more intense competitive pressure from non-member firms who, not bounded by the price-fixing agreement and production quotas, use it as a chance to increase their market share further by selling below the cartel price \rightarrow implies dominance of the market by a few dominant firms, indicating high market concentration ratio (CR).

(3) There ought to be the presence of a market leader that can punish firms that have cheated and non-member firms that attempt to undercut cartel price by pricing them out of the market through price wars \rightarrow implies the global oil industry has a dominant firm

(4) The product has to be quite homogeneous and the costs between firms have to be similar. If the products are highly differentiated, every producer will then be able to justify its need to set a different price from their rivals, making it very difficult to agree upon a common price. Similarly, if the cost varies widely between firms, the firms with lower AC may prefer to lower their prices to increase their market share instead of limiting their production and keeping prices up.

- <E & L> The car manufacturing industry is an oligopoly esp. within their own domestic country \rightarrow few dominant firms but they may not have control of a large global market share (in 2013, the 5-firm market CR is only 55%). Also cars are highly differentiated goods with different functions, colours etc. \rightarrow explicit collusion is likely to break down
- <E & L> Tacit collusion relies on indirect signals that are often distorted and misinterpreted. If a rival firm interprets a price cut initiated by the price leader as an undercutting of prices, this will likely trigger a price war \rightarrow \downarrow a firm's π

- <P> Commoditisation of products (process by which goods that have economic value and are distinguishable in terms of attributes e.g. uniqueness or

⁷ <https://www.theverge.com/2017/7/24/16021292/german-car-companies-cartel-diesel-emissions-90s>

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<p>products \rightarrow \uparrow market share \rightarrow \uparrow TR if demand for good is price elastic \rightarrow ceteris paribus, \uparrow a firm's π.</p> <ul style="list-style-type: none"> • <E & L> Such price competition could serve as a barrier to entry in the form of limit pricing, where new entrants are deterred from entering to compete with incumbent firms that enjoy internal EOS \rightarrow fewer competitors in the industry \rightarrow maintains LR π • <E & L> price wars undercut their rivals by \downarrow their prices so as to \uparrow their market share \rightarrow drives out some firms from the industry \rightarrow \uparrow market power to charge even higher prices \rightarrow \uparrow a firm's π • <E & L> e.g. Samsung caters to a wider range of consumer base by selling smartphones to different consumers of different purchasing power (some models are priced more competitively than others) \rightarrow able to gain a greater market share \rightarrow higher π than a firm with smaller market share (explain with graph) • <PEEL> Non-price competition via successful product differentiation in the form of advertising or product innovation \rightarrow e.g. Apple's iOS smartphone distinguishes itself from Android smartphones that are sold by many different smartphone companies \rightarrow \uparrow awareness and creates brand loyalty due to improved image, quality, functions etc. \rightarrow \uparrow AR and \downarrow PED, XED + \uparrow market power to mark-up prices \rightarrow if \uparrow AR $>$ \uparrow AC \rightarrow \uparrow a firm's π <explain with graph> 	<p>brand end up becoming simple commodities in the eyes of consumers) may occur \rightarrow \downarrow π</p> <ul style="list-style-type: none"> • <E & E> Commoditisation may cause firms to adopt race-to-the-bottom pricing, such that only firms that produce in low-cost countries are likely to survive in such price competition \rightarrow firm's π does not \uparrow. For e.g. Samsung's growth maximisation strategy in pursuit of more π did not work out after 2013, as there were entry of many smartphone companies producing similar Android smartphones. ➤ EV: a more effective way to \uparrow π could be to innovate and produce goods up the higher value chain to be able to mark-up price to earn higher π • <E & L> For outsourcing to \downarrow costs, there is a need to consider relocation costs and training costs of workers in the lower-cost producing countries, which may end up \downarrow firm's π if the cost-benefit assessment of outsourcing is not properly conducted. Outsourcing is also a short-term strategy as a low-cost producing country gradually transits to become a higher cost producing country over time, e.g. China where its labour costs rise due to massive offshoring and outsourcing to China ➤ EV: a more effective way could be the development of cost-saving technology, streamlining of production processes or use of automation instead of labour to boost productivity \rightarrow \downarrow AC \rightarrow \uparrow π • <E & L> Product differentiation \uparrow firm's AC and if it is unsuccessful \rightarrow \uparrow AC $>$ \uparrow AR \rightarrow \downarrow firm's π
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Evaluation → to consider the following:

- Nature of firms → as explained earlier, firms that are in direct competition may choose not to cooperate due to lack of distrust and commitment in terms of R&D information sharing. However, firms that are not in direct competition may see more mutual benefits in terms of cost reduction via cooperation, e.g. partnerships like the deal between Chinese carmaker Geely's Swedish subsidiary Volvo Car Group's deal to develop autonomous cars with Uber Technologies, and General Motor's partnership with Uber's rival Lyft
- Size of firms → small firms may be more inclined to cooperate than to compete as they:
 - ❖ lack iEOS compared to large firms that usually gain iEOS → small firms are less able to compete via lower prices as successfully as large firms
 - ❖ may enjoy lower π compared to large firms, hence less able to adopt non-price competitive strategy to $\uparrow \pi$

However, when small-and-medium-sized enterprises (SMEs) are in cooperative relationships with major partners, there are cases where the small firm becomes dependent on a dominating partner, which may lead to a power imbalance. For e.g. between the cooperation of Fujitsu Services and Microsoft, Fujitsu was forced to comply with the dominating partner's (Microsoft) directions, and may need to give full access to product data and share core competence in order to obtain guaranteed orders. Such a cooperative relationship may not necessarily $\uparrow \pi$ and may weaken over time. A higher risk is that when the dominating partner gains access to the smaller firm's core competence, it becomes easier to replace the small company with a low-cost producer.⁵

- Changes in external environment / conditions may incite firms to engage in cooperative strategies to $\uparrow \pi$ → technological developments / improvements in
 - ❖ shale oil may have led to the collapse of crude oil prices, prompting oil rivals to save costs by developing standard production equipment⁸
 - ❖ autonomous driving systems or even driverless cars in the future that prompt cooperation between car manufacturing rivals to share R&D information so as to speed up product innovation and save costs
- Contestability of the market → incumbent firms are likely to engage in price and non-price competition or cooperate with each other in terms of resource sharing, information sharing in a highly contestable market rather than to collude → maintain their attractiveness to consumers, e.g. telecommunication firms in Singapore engaging in price wars ahead of the entry of the 4th telco
- Govt intervention / anti-trust legislation → collusion is an anti-competitive behaviour → govt is likely to prohibit such behaviour and be stricter in monitoring firms' behaviour → firms may avoid such a strategy to minimise risks of being fined but instead choose to cooperate
- SR vs. LR aims / alternative aims of firms → firms may choose to maximise profits in the LR rather than SR, which thus affects the strategies adopted by firms; if it is a family-owned business, the firm may deviate from profit-maximising aim

⁸ <http://www.reuters.com/article/us-oil-projects/oil-rivals-cooperate-to-slash-equipment-costs-shell-idUSKCN0XW10N>

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2 (a) Explain the cost savings that may arise from the expansion of firms and industries. [10]

(b) A report by a German magazine claimed that car-makers had colluded for decades on prices to the detriment of foreign rivals. Some German car-makers however commented that it is more common for them to compete, although the smaller ones may cooperate in areas such as sourcing to negotiate better contracts with suppliers.

Discuss whether cooperation, collusion or competition is the best strategy to increase a firm's profits. [15]

Part (a)

Level	Descriptor	Marks
1	<ul style="list-style-type: none"> - Merely lists the different types of internal and external EOS without much elaboration and/or largely not addressing the question in terms of cost savings. - Many / serious conceptual errors. 	1 – 4
2	<ul style="list-style-type: none"> - Under-developed answer on the different types of internal and external EOS. - Some ability at graphs but incomplete explanation. - Some real-world exemplification but may not be consistently applied to all the EOS - May contain some minor conceptual errors. - Max 6M: No EEOS with at least 2 well-written IEOS. Exemplification need not be the same industry/car. Requires a graph. - Max 7M if EEOS and IEOS is attempted but weakly addressed 	5 – 7
3	<ul style="list-style-type: none"> - Well-developed answer that has rigour in explaining the different types of internal and external EOS, with application to real world exemplification, accompanied with well-labelled and well-explained graphs. - Max 8M: if IEOS lack scope (scope requires a plant and firm) and has EEOS. 	8 – 10

Part (b)

Level	Descriptor	Marks
1	<ul style="list-style-type: none"> - Shows some knowledge of the 3 different strategies and/or may not fully address the question in terms of a firm's profits - Many / serious conceptual errors. 	1 – 4
2	<ul style="list-style-type: none"> - A 1-sided but well-developed explanation on how the strategies (x3) help to boost a firm's profits OR - A 2-sided but under-developed discussion on the appropriateness and inappropriateness of the 3 strategies in boosting a firm's profits. OR - A 2-sided and well-developed discussion on the appropriateness and inappropriateness of only 2 strategies in boosting a firm's profits. - Some real-world exemplification with some application to the preamble. Real-world exemplification may not be consistently applied to all the strategies. - May contain some minor conceptual errors. - Max 5M: 2 one-sided; 1 two-sided but well developed, 2 two-sided + under-developed. 	5 – 7
3	<ul style="list-style-type: none"> - A well-developed and 2-sided discussion on the appropriateness and inappropriateness of the 3 strategies in boosting a firm's profits. - Real-world exemplification (at least one is related to cars) that is consistently applied to all the strategies with application to the preamble. 	8 – 10
E1	Unexplained evaluative statement.	1
E2	<ul style="list-style-type: none"> - Some attempt at evaluation, but are mostly summative conclusion. - Evaluation is relevant to the question but does not fully explain the judgment or does not base it on relevant analysis. 	2 – 3
E3	Able to provide a reasoned judgement via a clear explanation on the factors / conditions / circumstances in determining which is the best strategy to boost a firm's profits, e.g. (1) the nature and size of firms, (2) market contestability, (3) govt. intervention, (4) firm's aim etc.	4 – 5

Suggested Answers for H2 Economics (9757) Paper 2

3 (a) With reference to examples, explain why rational decision-making by consumers might not be aligned to the government. [10]

(b) Discuss the extent that knowing the root cause of the misalignment is sufficient in determining the policy measure to adopt. [15]

Introduction:

Explain what is meant by rational decision-making by consumers and the government.

State that rational economic agents make decision that maximise their welfare

- Consumers maximise private welfare, i.e. utility
- Government maximise social welfare

Explain the condition for the respective goals to be attained based on the marginalist principle

- Rational and incentive-driven consumers, with the aim to maximise their private welfare, will consume a good / service at the private optimum pt where $MPC = MPB$, i.e. the last unit of the good / service consumed adds as much to the consumers' benefit as it does to consumers' cost. Any variation in consumption will reduce their utility level.
- Government, with the aim to maximise social welfare, will want the society to consume a good/service at the social optimum pt where $MSC = MSB$, i.e. the last unit of the good / service consumed add as much to the society' benefit as it does to society's cost. Any variation in consumption will reduce the social welfare level.

Development:

Explain why rational decision-making by the consumers and the government may not be aligned [ie. to explain why the private optimum pt is not the same as the social optimum point. In essence, it is because the conditions of a perfect market are not met, e.g. there are imperfect information (be it asymmetric, incomplete or inaccurate), generation of positive and negative externalities in consumption and existence of public goods i.e. due to the various causes of market failure.]

i) Due to existence of public goods

- Using the example of a public good, e.g national defence, explain how public goods exhibit the characteristics of non-excludability and non-rivalry in consumption.
- Explain how as a result of these two characteristics, the ability to free-ride arises. Non-payers are able to enjoy the benefits of a good that payers have paid for due to non-excludability. The non-rivalry nature of the good also implies that non-payers can continue to free-ride on payers because the good does not get used up.
- Explain how rational consumers with the aim to maximise their private welfare will not be willing to pay for public good - a good that they can free-ride on. There will be no expression of demand for the good. In such an instance, the rational decision for firms is not to even enter the market to supply the good. There is hence a missing market for public goods as the private optimum point = Zero
- Explain how the government, with the aim to maximise social welfare, will want the society to consume public goods at the social optimum point where $MSC = MSB$ as public goods like street lighting and defence are essential services to the economy and yield valuable benefits to society.
- Hence conclude that rational decision-making by consumers and government are not aligned in the allocation of resources for public goods, there is a divergence in resource allocation.

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ii) Due to generation of positive/negative externalities in the consumption of the good

- Using the example of good that incurs negative externalities in consumption, eg. driving.
- Explain what constitute MPC and MPB of driving to drivers
- Explain how rational consumers will consume at the private optimum level where $MPC = MPB$. Draw a diagram and illustrate that the private optimum point will be at Q_p .
- Explain how driving \rightarrow traffic congestion and pollution \rightarrow reduce overall productivity for firms located at the congested areas and increase healthcare cost for pedestrians along the road.
- Explain how these negative externalities \rightarrow additional cost incurred by the society but consumers will not take this external cost into consideration (i.e they will ignore external cost)
- Explain how the Government will need to take into account this external cost when deciding on the consumption level at society level. They will want to allocate resources to produce the good up to the social optimum level where $MSC = MSB$ where $MSC = MPC + MEC$ and $MSB = MPB + MEB$. (Assuming $MEB = 0$) Illustrate in the same diagram how $MSC = MSB$ is at Q_s which is less than Q_p
- Explain how incurrence of MEC will imply that $MPC < MSC$, rational decision-making will led consumers to allocate more resources to the consumption of the good than the level that the government deems socially desirable.
- Hence conclude that rational decision-making by consumers and government are not aligned when the consumption of the good generates externalities, be it positive or negative \rightarrow divergence in resource allocation.

iii) Due to imperfect information

- Explain how consumers consume goods and services based on their perceived cost and benefits. For example, in the consumption of healthcare or education, they will consume up to the point when $MPB_{perceived} = MPC_{perceived}$. Draw a diagram to illustrate.
- Explain how the government will allocate resources to produce the good at the social optimum level where $MSC = MSB$.
- Explain how imperfect information on benefits of consuming a good $\rightarrow MPB_{perceived} < MSB \rightarrow$ rational decision-making by consumers will lead them to allocate less resources to the consumption of the good than the level that the government deems socially desirable. or
- Explain how imperfect information on cost of consuming a good $\rightarrow MPC_{perceived} > MSC \rightarrow$ rational decision-making will lead consumers to allocate more resources to the consumption of the good than the level that the government deems socially desirable.
- Make reference to the earlier diagram to explain the divergence in the MSB and $MPB_{perceived}$ curve or the divergence between the MSC and $MPC_{perceived}$ curves.
- Hence conclude that rational decision-making by consumers and the government are not aligned when there is imperfection information \rightarrow divergence in resource allocation.

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Level	Descriptors
L1 (1-4)	L1 Knowledge/ Recognise (Description)
	<ul style="list-style-type: none"> • Answers are descriptive statements and largely irrelevant. • Concepts are descriptive and explained with many errors • Weak or inappropriate applications of the concepts. <ul style="list-style-type: none"> ○ Merely state the conditions for rational decision-making by consumers and the government but not able to explain them. ○ Merely state that there is a divergence between the decisions made by them but not able to explain why • Poor use of examples or no examples
L2 (5-7)	L2 Consolidate (Add some detail – application)
	<ul style="list-style-type: none"> • Attempt to explain what is meant by rational decision-making by consumers and the government and how it is attained by using the marginalist principle and why they diverge • Insufficient scope and depth • Adequate attempt at exemplification – at least two examples but may not be effectively applied • Treated the question as one on Market Failure and did not address the question directly.
L3 (8-10)	L3 Elaborate (Extend to include analysis)
	<ul style="list-style-type: none"> • Clear economic explanation of what is meant by rational decision-making by consumers and the government and how it is attained based on the marginalist principle • Clear economic explanation of why rational decision-making -> divergence between Govt and consumers in resource allocation by examining at least two reasons (public goods, tve/-ve externalities, imperfect information) • Excellent exemplification that draw out the reasons for the divergence between the consumers and the Govt's decision in resource allocation (at least 2 examples)

b) Discuss the extent that knowing the root cause of the misalignment is sufficient in determining the policy measure to adopt. [15]

Thesis:

Explain with examples why knowing the root cause is necessary in determining the policy measure to adopt to ensure appropriateness

For example,

- if the cause of market failure is due characteristics of **non-rivalry and non-excludability** of good (i.e. public good) which leads to missing market due to free-ridership problem - > Govt will have to **provide the good** and fund it through tax-payers-> appropriate and effective in resolving the market failure. Using the example of street lamps, police protection or national defence, exemplify how knowing the root cause determines the Govt's decision to provide and fund using tax-payers' money to resolve the free-riders' problem
- if the cause of market failure is due to **generation of positive/negative externalities** which are not considered by producers/ consumers , then **granting of indirect subsidies to support R&D efforts / imposing indirect taxes** -> internalisation of positive/negative externalities -> rise in production/consumption - > appropriate in resolving the market failure.
- However, if the cause of the market failure is due to **incomplete information of consumers**, then **public education through campaigns and publicity** -> increase awareness -> reduce divergence between actual and perceived benefits/costs -> rise /

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fall in consumption - > appropriate in resolving the market failure. Using the examples of education / smoking etc, exemplify how there is a need to subsidise/tax due to the externalities as well as a need to provide public education due to imperfect information.

- If the cause of market failure is due to asymmetric information -> Govt will **impose rules and regulations** on producers -> protect the consumers from being misinformed by producers and perceiving marginal benefits to be higher than actual and hence consuming beyond the social optimum point. Using the example of used cars, explain how Govt implemented the lemon law to protect consumers from retailers who sell defective goods. If a defect surfaces within 6 months of purchase, it is assumed that the defect existed at the time of sale, unless the retailer can prove otherwise.

Anti-thesis

Explain how beyond looking at the root cause, there are other factors that need to be considered when deciding on the policy options. For example

- **Sufficiency of funds to ensure feasibility / Time horizon for it to work to ensure effectiveness within a reasonable time frame:** For example, giving grants to industries in support of their R&D efforts to develop green technology may be deemed most appropriate as the change in production method will reduce emission and resolve the root cause of the problem. However, it is a strain on the gov't's budget and may not be feasible if the Govt is already accumulating fiscal debts. In addition, there is uncertainty of outcome and long gestation period. Hence Govt may choose to impose indirect taxes or issue tradable permits to control the amount of emission permitted instead, which is solve the root cause of the problem, is more immediate and helps generate tax revenue for the Govt. Hence knowing the root cause is not sufficient in determining the policy measure to take.
- **Conditions to ensure effectiveness must be met / Consequences cannot offset the intended effects:** For example, imposing indirect taxes on consumption of cigarettes may be deemed appropriate due to the negative externalities generated. However, if demand for smoking is price inelastic, then indirect taxes may not be effective in reducing consumption level to socially optimal level ($MSB = MSC$). Raising taxes too high a level to reduce consumption to socially optimal level may lead to consequences (i.e increase COL, political unrest etc) that offset the intended benefits. The Govt may choose to impose rules and regulations. Although it may not be political favourable as well, it is more effective as it does not depend on consumers' responses.
- **Conditions to ensure efficiency must be met.** For example, although in theory, public goods are best provided by the Govt due to its characteristics of non-rivalry and non-excludability, State-owned enterprises (SOEs) tend to be inefficient given the absence profit and competition -> higher cost. Knowing its inherent inefficiency, the gov't should set up public-private partnership and involve the private sector to deliver public services to introduce profit motives and discipline of the market with the aim to increase efficiency and lower cost. Hence knowing the root cause is not sufficient. Need to adopt policies to ensure efficiency as well.

Evaluation:

- Knowing the root cause of the misalignment of resource allocation between the gov't and consumers is necessary as it determines the appropriateness and effectiveness of the policy choice. However, it may not be sufficient as there other criteria to meet when deciding on the best policy option to resolve the problem.
- The extent that knowing the root cause is sufficient depends on the gov't's assessment on which criterion to prioritise. This may differ across and within countries depending on characteristics, economic conditions and constraints.

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- If the govt has high budget deficit and forced to adopt austerity measures, knowing the root cause of a problem will not be sufficient in deciding on the policy to adopt. If the policy is not feasible due to financial constraint, it cannot be implemented even if it can resolve the root cause of the problem. **If there is no constraint**, then knowing the root cause will probably be sufficient in making a policy option
- If the govt's assessment is such that the costs of a policy will exceed its benefits, it is not worth implementing it even if it resolves the root cause of the problem as the issues created may lead to bigger problems. Hence the govt may have to choose alternatives even if it does not solve the root cause of the problem. For example, a root cause of morning traffic congestion may be the usage of the road at the same time which is in turn due to the inflexible school and working hours. But such system and structure can only be changed over a long period of time (time frame) as it requires a change in mind set (feasibility) and may disrupt business operations (consequences). Hence setting ERP rates may be the next best option as it diverts commuters to take public transport but it will only lead to overcrowded trains and buses at peak hours.
- There is often more than one option that can resolve the root cause of problem. Hence, there is a need to choose the most effective and feasible option with least consequences and can work within the time constraint.
- Note that the govt may not even know the root cause. In this case it may be at best guesswork when choosing a policy

Level	Descriptors
L1 (1-4)	L1 Knowledge/ Recognise (Description)
	<ul style="list-style-type: none"> ● Answers are descriptive and largely irrelevant. For example, instead of discussing the factors affecting policy options, student discuss the effectiveness of policies adopted to correct market failure ● Concepts are descriptive or explained with many errors ● Poor use of examples or no examples ● Weak or inappropriate applications of the concepts
L2 (5-7)	L2 Consolidate (Add some detail – application)
	<ul style="list-style-type: none"> ● Imbalanced approach of whether knowing the root cause is or is not sufficient to decide on the policy option ● Lacks scope and depth of analysis - Only one other factor discussed besides 'root cause' (Max 7) ● Attempt at exemplification
L3 (8-10)	L3 Elaborate (Extend to include analysis)
	<ul style="list-style-type: none"> ● Balanced approach on the extent that knowing the root cause is sufficient to decide on the policy option ● Excellent use of examples to exemplify why knowing the root cause of a problem is not sufficient by examining the instances where other factors are necessary.
Evaluation	
E1 (1)	<ul style="list-style-type: none"> ● Random evaluation or generic limitations of knowing the root cause in deciding on the policy option but did not address the question.
E2 (2-3)	<ul style="list-style-type: none"> ● Able to make a judgement on the extent that knowing the root cause is sufficient to decision on the policy although the reasoning may not be clear.
E3 (4-5)	<ul style="list-style-type: none"> ● Able to make a judgement on the extent that knowing the root cause is sufficient to decision on the policy to use <u>by weighing the importance</u> of the various factors, <u>by stating the conditions</u> for one factor to be more important than the others.

Suggested Answers for H2 Economics (9757) Paper 2

- 4 (a) Using the circular flow of income, explain how a fall in exports might impact unemployment in an economy. [10]
- (b) Discuss whether the size of multiplier is the main factor in determining the choice of macroeconomic policies to reduce unemployment in Singapore. [15]

Part (a)

Introduction

Define circular flow

Explain the four sector economy and how the four sectors interact to achieve equilibrium.

The 4 sectors are: households, firms, government and foreign/external sector.

Households provide factor services to firms and, in exchange, will receive factor incomes for their services to the firms. With the income earned, households will in turn use it to purchase goods and services to satisfy wants and needs. But households do not spend all their incomes on the goods and services produced by domestic firms. They also save part of their incomes, pay some of it as taxes, and purchase imports from foreign producers. Known as withdrawals, S, T and M diminish the circular flow, siphoning off spending and income.

Just as domestic households do not spend all their incomes on the goods and services produced by domestic firms, domestic firms do not produce only to sell to domestic consumers. They also sell to and earn revenues from the government, other firms and foreigners. Known as injections, government expenditure (G_d), investment (I_d), and export (X_d), these add on to the circular flow, creating additional spending and income.

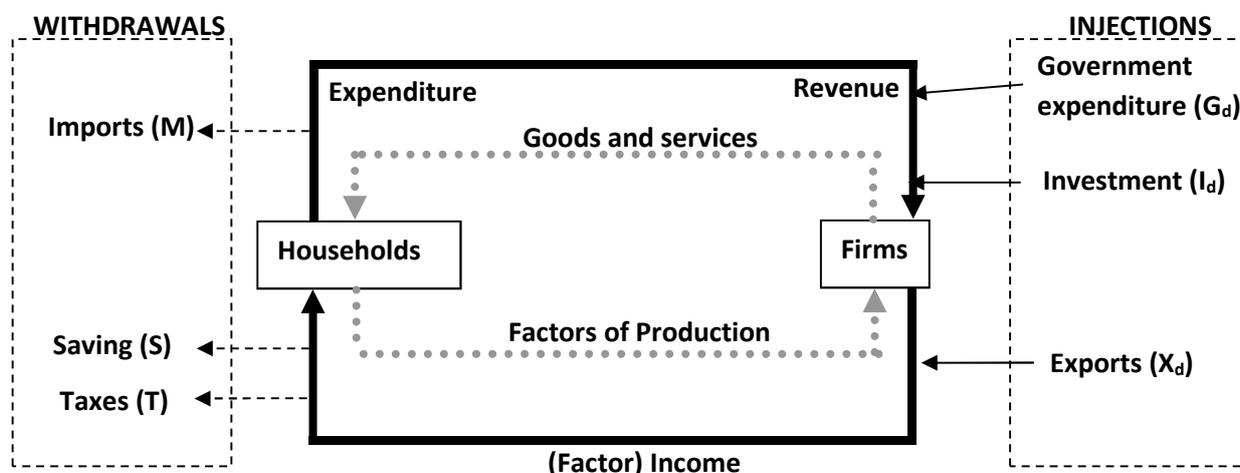


Figure 1: The circular Flow of Income in a 4-sector economy

Body

Assume that the economy is in equilibrium initially.

A fall in X will lead to decrease in injections. The imbalance between injections and leakages will set off a series of changes in the circular flow as national income adjusts to new equilibrium. The fall in X results firms experiencing unplanned investments. They receive signals to reduce production in the next time period. The fall in production will reduce the demand for FOP, including labour; assuming supply unchanged, there will be a fall in number of people employed, leading to increase in unemployment. The fall in factor income paid to households will lead to fall in induced consumption, resulting in firms experiencing yet another round of unplanned investments. The production of firms will fall again in the next time period, creating yet another round of increase in unemployment. However, the fall in production is less in this round due to some of the fall in income being directed as fall in

Suggested Answers for H2 Economics (9757) Paper 2

imports purchased, fall in savings and fall in tax paid to government. This cycle will continue by multiple times, until the fall in injections = total summation of fall in leakages. There will be multiple rounds of increase in unemployment (demand-deficient).

[Explanation of reverse multiplier effect with clear reference to the diagram of circular flow of income → best with numbered arrows on diagram]

[Link] At each round when national income falls, the fall in corresponding production of goods and services will lead to fall in demand for FOPs, resulting in less employment of labour, i.e. increase in unemployment.

Level	Descriptor	Marks
1	A splatter of points where answer shows some knowledge of circular flow of income but unable to give reasonable explanation of the multiplier effect – incomplete or inaccurate depiction of circular flow Use AD/AS diagram instead (max. 4m)	1 – 4
2	Adequate knowledge of circular flow of income; explanation accompanied with diagram. Explained the multiplier effect (at least two rounds, numerical example is optional) with some inaccuracies or does not link to unemployment. No mention/link to unemployment – only explained effect on NY using circular flow (max. 5m) Implicit link to unemployment (max. 7m) No draw, correct explanation with link to unemployment, no example (max. 7m)	5 – 7
3	Clear explanation of circular of income with diagram and examples; written analysis is referenced to diagram. Explanation of multiplier effect is complete and well linked to unemployment. Cap at 9m without examples (suggestions of the type of X that fall) Draw, link to diagram with example (10m) Draw, link to diagram no example (9m) Draw, no link to diagram, no example (8m)	8 – 10

Part (b)

Introduction

Macroeconomic policies – can be both demand-management or supply-side policies

Context: Singapore

Intent: reduce unemployment

Body

Thesis: Size of multiplier is a factor that determines the choice of macroeconomic policies to reduce unemployment in Singapore

Referring to Singapore context, the size of multiplier is small, due to presence of high leakages from high MPM and high MPS.

Singapore has high MPM due to Singapore being a small economy and is highly reliant on imported raw materials and goods to fulfil the production of domestically consumed goods and exports.

The presence of CPF system in Singapore is a major reason to why Singaporeans have high savings rate; in addition, the fact that Singapore government does not support a welfare system for old age means that Singaporeans will have to depend on savings to support their retired lives. These contributed to high MPS.

Together, the resultant k size is small.

Suggested Answers for H2 Economics (9757) Paper 2

The presence of a small multiplier will affect the extent of unemployment being reduced should Singapore government implement any demand-management policy.

Use expansionary fiscal policy as an example, increase in G will increase the AD and kick start the multiplier process. [No need to repeat the multiplier process] The increase in NY is more subdued as compared to a country which has a higher k size. [Students are encouraged to show numerical examples or diagram on the outcome of NY when k size differs.]

Smaller multiplier (SG context) \rightarrow smaller reduction in unemployment should expansionary demand-management policies be implemented.

Outcome:

Singapore government may support the reduction of unemployment with cost-reduction supply-side policies since the demand-management policies may not reduce unemployment to the intended rate. [Explain some cost-cutting measures]

Antithesis: There are other factors will determine the choice of macroeconomic policies to reduce unemployment in Singapore

(i) Type/Cause of unemployment

With reference to part (a), the nature of unemployment in Singapore could be demand-deficient (cyclical) if it is due to a fall in X . Singapore is small and very open economy, thus a fall in X will likely lead to a significant fall in AD, resulting in significant demand-deficient unemployment. In this case, if the cause of unemployment is due to a lack of AD, Singapore government should implement demand-management policies to raise the AD; specifically policies that can raise X .

Note: G is a smaller component relative to other components of AD in Singapore; it will be good for demand management policies to target the root cause of fall in X rather than try to offset the fall in X with increase in G .

Elaborate: Singapore government may consider depreciating/zero appreciation SGD in order to raise the X -price competitiveness of Singapore exports.

If the unemployment is structural in nature, supply-side policies should be utilised. [To elaborate]

(ii) Presence of trade-offs when pursuing policies to reduce unemployment

Increase in AD to reduce unemployment will lead to inflation; the extent of increase in AD may not be often well estimated due to (i) inaccuracy of information, (ii) presence of other components increasing given dynamic economic conditions, thus there may be demand-pull inflation as Singapore recovers and reaches vertical portion of AS

Assuming that the reduction in unemployment came from expansionary demand-management policies that did not increase X , the increase in NY as more people have jobs will lead to increase in TE_m , thus worsening the current account of BOP.

Evaluation

Size of multiplier affects the extent of reduction in demand-deficient unemployment but it does not change the choice of policies that government has to pursue if the unemployment is due to lack of AD. It does however suggest for Singapore government to increase the initial boost to AD so that the large increase in injections will make up for the smaller increases in AD at each round (k effect).

Suggested Answers for H2 Economics (9757) Paper 2

Type of unemployment is strongly related to addressing the root cause of unemployment and it helps the government make a clear choice between supply-side or demand-management policies.

The trade-offs may or may not happen, depends on how other components of BOP change (for example, as unemployment reduces, investor confidence returns, and financial account improves).

Ultimately, the root cause of unemployment may be the most important, while size of multiplier is not as significant in choice of macroeconomic policies.

Level	Descriptor	Marks
1	Where the answer is mostly irrelevant and only contains a few valid points made incidentally in an irrelevant context. The answer shows some knowledge of how size of multiplier affects the extent of unemployment reduced when employing demand management policies. However, the answer lacks development and has theoretical errors and gaps and has no reference to SG.	1 – 4
2	Expect an accurate although undeveloped explanation of the different factors that affect the choice of policies to reduce unemployment but no reference to SG (max. 6m). Well written one-sided analysis on how the size of multiplier affected government's choice of policies (max. 6m). Answer has balance and application to Singapore context is present, though the analysis can be improved.	5 – 7
3	Expect a good knowledge of the factors that can affect the choice of policies SG government uses to reduce unemployment Only two factors discussed (max. 9m) At least three factors are discussed. Expect a thorough knowledge of the policies with an excellent ability to describe and explain this in a precise, logical, reasoned manner. Given the time constraint, the answer's demonstration of knowledge, understanding, application and analysis could not be improved significantly.	8 – 10
E1	For an answer that gives an unsupported evaluative statement on whether the size of multiplier is the most important factor.	1
E2	For an answer that makes some attempt at evaluation or a conclusion that answers the question but does not explain the judgment or base it on analysis.	2 – 3
E3	For an answer that (so far required by question) builds on appropriate analysis to evaluate critically alternative theoretical explanations, contemporary issues, perspectives and policy choices, that recognises unstated assumptions and evaluates their relevance, and that synthesises economic arguments to arrive at well-reasoned judgments and decisions.	4 – 5

Suggested Answers for H2 Economics (9757) Paper 2

5. With the economy much closer to full employment now and a strong likelihood of a fiscal stimulus next year... we expect the US Federal Reserve to accelerate the pace of interest rate hikes next year.

Paul Ashworth, Chief U.S. Economist, Capital Economics
Source: <http://money.cnn.com>, 15 Dec 2016

- (a) Explain the need for the US Federal Reserve to accelerate the pace of interest rates hikes. [10]
- (b) Discuss the view that price stability should always take priority over other macroeconomic objectives. [15]

Part (a)

Introduction

Accelerate the pace of interest rate hikes – contractionary MP

Intent: contractionary MP is used to manage inflation

The US government is likely to be concerned with inflationary pressures arising from

- (i) Economy closer to full employment
- (ii) Strong fiscal stimulus

Body

[Explain how inflation arises]

The fiscal stimulus will increase AD via G, and cause the US economy to be in disequilibrium. The presence of unplanned disinvestment will signal the firms to increase production, thereby causing increase in DD for FOPs, c.p.. This will subsequently increase the price of factor inputs. Firms will pass on the increase in the cost of production in the form of higher prices to HHs. This will result in increase in GPL across G&S.

The increase in GPL is exacerbated by the fact that US is operating very close/at full employment level, where the economy is operating at the vertical portion of AS.

Show on AD-AS diagram how there will be demand-pull inflation due to increase in G (fiscal stimulus) and the subsequent multiple increases in AD from the multiplier effect (focus is not on k effect, but rather the multiple increases in AD that makes demand-pull inflation)

[Explain how the contractionary MP works]

The increase in interest rate will lead to domestic and external effects.

Domestic: increase in interest rate will increase the cost of borrowing, reducing the expected rate of return of I to firms (movement along the MEI), leading to decrease in I. This will also raise the cost of financing big ticket items for HHs, hence Cd will decrease.

There is increase in opportunity cost of C as HHs will forgo higher interest earnings from S if they choose to spend. This will encourage more S and less C.

Overall, I and Cd will fall. The extent of which depends on interest elasticity and other factors such as consumer/investor confidence in the economic performance of US.

External: US has free capital flows – increase in interest rates will increase hot money inflows as short term investors deposit money in US for the relative higher interest rate earnings in US short term capital markets (less hot money outflows too). This will mean US dollar appreciates against other currencies. The appreciated USD will result in increase in Px in foreign currencies and decrease in Pm in USD. Qdx will fall as Px increases, the extent of fall depending on the PEDx. The increase in Qdm will mean switch from domestic goods to import substitutes, the extent of rise depending on XED between imports and domestic goods. The result will be decrease in X and Cd.

Show on diagram how the policy works.

Suggested Answers for H2 Economics (9757) Paper 2

Level	Descriptor	Marks
1	A splatter of points where answer shows some knowledge of factors leading to inflation and use of interest rate to curb inflation.	1 – 4
2	Adequate knowledge of the causes of inflation and the causes are well explained. Explanation of how monetary policy works to reduce inflation in US. Some inaccuracies or no use of diagram. No context OR no reference to preamble (max. 5m) Why there is a need to quell inflation (link)	5 – 7
3	Clear explanation of causes of inflation and how monetary policy works. Detailed explanation of both domestic and external effects with the use of an appropriate diagram. Application to US context.	8 – 10

Part (b)

Introduction

Present the four macroeconomic objectives: price stability, full employment, sustainable EG and healthy BOP

Body

Thesis: Price stability should be prioritised

Any government desires for its country to achieve price stability because of the associated benefits.

<P> Price stability preserves the purchasing power of money and therefore encourages savings. (benefit to households)

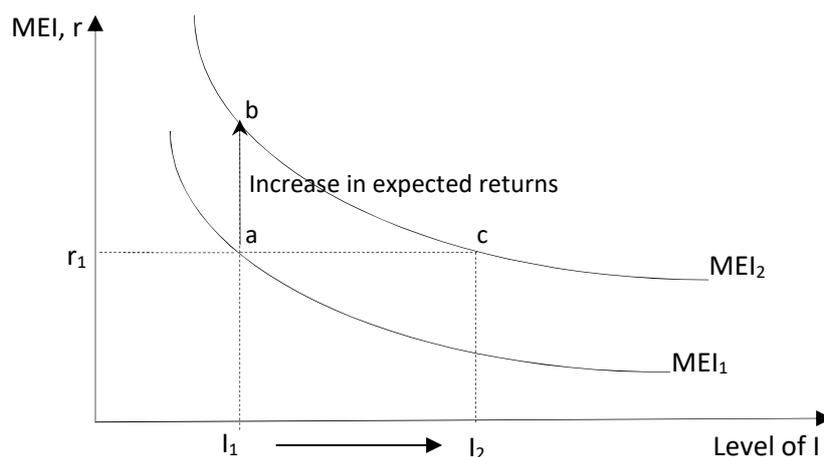
<E> People are more willing to save part of their current income when price is stable because interest earnings are likely to help retain the purchasing power of savings over time given positive real interest rate. People will be better able to apportion their current income between current consumption (C) and future consumption (S); their real income and standard of living is maintained over time.

<Exemplify> For example, in Singapore where the citizens have to save 20% of their monthly income in their CPF account, price stability will ensure that the purchasing power of the savings is preserved which will significantly improve the standard of living all her people.

<P> Price stability promotes Investment and Economic Growth (benefit to firms and economy)

<E> Likewise, firms are able to make better projections of their costs and revenue where prices are stable. This allows them to gauge their returns to investment with more confidence and certainty. This will shift the MEI curve upwards as illustrated in the following diagram. Hence, holding interest rate unchanged at r_1 , each additional unit of investment between I_1 and I_2 , the returns from investment (as illustrated by point on MEI_2) exceed the interest rate r_1 and the area abc shows the expected net return for investment between I_1 and I_2 . By the marginalist principle, firms will increase investment up till I_2 whereby the rate of return (cl_2) is equal to the interest rate r_1 . Thus, an increase in investor's confidence will not only lead to increase in domestic investment but also attract Foreign Direct Investment (FDI) in the country.

Suggested Answers for H2 Economics (9757) Paper 2



This increase in I , causes AD to increase from AD_0 to AD_1 . This results in increase in real NY from Y_0 to Y_1 , which will increase the derived demand for labour and thus lowers unemployment. Over time, potential growth may also be observed in the economy as AS increases from AS_0 to AS_1 . This will ensure that the economy achieves a non-inflationary economic growth, as depicted in the following diagram. Real NY increases further from Y_1 to Y_2 , however, due to increase in productive capacity there is a drop in the GPL from P_1 to P_2 .

<Exemplify> For small and open economies, like Singapore FDI is a main driver to ensure a sustained economic growth. Hence, for economies who leverages on FDI for economic growth and hence low unemployment, should prioritise price stability over other macro goals.

<P> Price stability will also improve the BOP account of an economy.

<E> Price stability means that price of exports will increase gradually over time. This helps to maintain the export competitiveness of a country, especially if inflation rate is lower than that of her trading competitors. Likewise, the stable prices at home will reduce the tendency for households to switch to import substitutes because domestic goods and services remain price competitive. This helps to maintain C_d and X and possibly these two components of AD would increase over time if prices of goods and services in other countries remain relatively higher.

<Exemplify> For small and open economies like Singapore, export is the key driver of economic growth. Exports accounts for over 200% of her GDP. Hence, ensuring export competitiveness through price stability should be the priority of the government. Increase in both C_d and X will boost AD and stimulate EG and employment of labour, assuming country is below full employment.

The increase in export competitiveness will help to improve export revenue, while import expenditure will not be growing excessively given stable domestic prices. There will be an improvement to the current account. Given that price stability encourages investment, foreign investors may be attracted to invest as well. This will instil positive impact on the financial and capital account. Both improvements in current, capital and financial account will result in improvement in BOP.

Referring to the benefits of price stability, it is apparent that price stability will allow the country to achieve other macroeconomic objectives, such as promoting a sustainable economic growth, reducing cyclical unemployment and improving BOP.

Suggested Answers for H2 Economics (9757) Paper 2

Antithesis: However, a government may also pursue the other macroeconomic objectives, such as a sustained economic growth, or low unemployment or a healthy BOP account.

Although there are many benefits associated with price stability, a government need not prioritise price stability over other macroeconomic goals. This is because other macroeconomic objectives are also desirable to an economy.

<P> High economic growth will reduce cyclical unemployment and rise the standard of living.

<E> An increase in national output production will require more factors of production (FOP), including labour to be employed. Therefore, high economic growth will ensure that sufficient new jobs are created for the labour force, even as the labour force expands over time. Material standard of living refers to the amount of goods and services available for consumption and this is directly related to national output. Sustained economic growth will allow material standard of living of individuals to increase over time, as well as to maintain the material standard of living of each individual as population increases (where rate of increase in national output \geq population growth).

<Exemplify> This is especially relevant in developing economies like China, where the government actively pursues economic growth by maintaining a persistent undervalued currency as discussed in part (a), even at the expense of rising inflation.

<P> Fall in unemployment will lead to increase in national output and hence ensure actual economic growth. It will also improve government's budget position.

<E> A decrease in unemployment means that more FOPs are employed, hence pushing the economy from a point within PPC to a point on the PPC. This helps to increase the national output and hence contribute to economic growth. The increase in national output will in turn increase the material standard of individuals in the economy. Furthermore, when unemployment is low, a government will spend less on unemployment benefits or other costs incurred due to unemployment (e.g. social costs incurred from higher crime rates or frequent riots committed by the unemployed). The government can better divert these resources to other uses such as to provide public or merit goods, which will improve the standard of living of its people. The government can collect more tax revenue as more people are now employed. This will lead to an improvement in the government budget.

<P> Maintaining a healthy BOP will also ensure economic growth and an improvement in material standard of living.

<E> Aggregate demand rises through increase in exports (in the case of current account surplus) and/or fixed capital formation (in the case of capital account surplus). Through adjusting to unplanned disinvestment and reinforced by the multiplier effect, real national income and employment both increase. A current account surplus increases the availability of goods and services to the country's residents, allowing for satisfaction of more wants and needs and conferring higher level of utility, thereby raising the current material standard of living. Furthermore, an improvement in capital and financial account will lead to a net inflow of capital from other countries. This country is said to be a 'net importer of capital'. This will increase the pace of capital accumulation and thus further expand the productive capacity of the country. An increase in the economy's ability to produce goods and services to satisfy wants and needs will lead to improvement in future SOL.

<P> Maintaining a healthy BOP will also ensure exchange rate stability.

<E> A sustained current/capital account surplus implies there is a prolonged net inflow of the country's currency. This, results in excess demand of the country's currency in the foreign exchange market. This exerts an upward pressure on the country's currency to appreciate. With sufficient reserves the central bank will be able to intervene in the forex market to maintain exchange rate stability. A stable exchange rate will reduce imported inflation and lower the risk of speculative attacks. Further, a stable exchange rate will boost investor's confidence which will result in inflow of FDI, thus ensuring potential economic growth.

Suggested Answers for H2 Economics (9757) Paper 2

Evaluation: Whether a government view price stability as the most important macroeconomic objective or not depends on: (choose any two)

<P> Present Economic Conditions

A country may also be suffering from other macroeconomic problems, such as high unemployment or fall in national output.

<Exemplify> During the global financial crisis, USA suffered economic consequences such as fall in national output and high unemployment. It was also apparent that USA continued to experience inflation and large trade deficits during this period, simply because Federal Reserve kept lowering the inflation rate to boost economic growth. The US government was more concerned with raising output and to reduce the near ten percent unemployment rate than to deal with inflation. Hence, during an economic recession the fall in national output and increase in unemployment could be very severe, rendering the increase in prices less important a consideration to the government.

<P> Economic Characteristics

Small and open economies may have to prioritise price stability over other macroeconomic objectives because price stability is important for such economies to maintain their price competitiveness of exports over time and to sustain their export-driven economic growth.

<Exemplify> This is seen in the case of Singapore, where her government views price stability as the intermediate goal to attain other macroeconomic goals in the long run. This is because price stability will create conducive environment for continuing investment in Singapore and investment will eventually contribute to sustained economic growth.

On the other hand, price stability for large and less open economies may not be as pressing an objective compared to the small and open economies. This is because a large economy does not need to target inflation as an intermediate goal to achieve economic growth and low unemployment.

<P> Stage of Economic Development

The government of a developed country will be more concerned with maintaining price stability, given the high level of accumulated savings and assets households generally possess from previously produced national output. When inflation is high, households will lose the purchasing power of their savings and assets, causing a rapid fall in material standard of living. In the event that inflation and economic growth are conflicting, it is more acceptable for the government to preserve the purchasing power of household savings and assets as economic growth is likely to be a small percentage from the already high absolute level of national output. The average inflation rate for Euro Area stands at 2.46% (end 2011).

<Exemplify> In the case of Singapore, households tend to have a significant amount of savings locked in their CPF accounts with limited options to invest for higher returns. High inflation will erode the real value of savings in the CPF accounts of Singaporeans, and this would affect their ability to pay for their housing and retirement.

The government of a developing country on the other hand may prefer to prioritise economic growth over inflation, since she requires the rapid economic growth of output to improve the material standard of living of households, and to create employment for her largely unutilized labour force. Although increase in prices may result in fall in purchasing power, households in developing countries tend to have little savings and assets; hence the impact of price increases is not as significant on developing countries. The average inflation rate for the BRIC countries stands at 4.8% (Mar 2012).

Suggested Answers for H2 Economics (9757) Paper 2

<P> Short Term Goals vs. Long Term Goals

A government may prefer economic growth and job creation over price stability. In the short run, a government may be willing to relinquish price stability in order to achieve high economic growth to increase the standard of living of her people rapidly.

<Exemplify> For instance, it is not uncommon to observe near two or two digit inflation rate in India in recent years. However, the economic growth registered often surpasses that of her inflation. The Indian government was willing to tolerate inflation in return for rapid increase in national output. This leads to rapid improvement in the average material welfare of Indians.

Level	Descriptor	Marks
1	For an undeveloped answer that merely shows knowledge of price stability, and some references to other macroeconomic goals Answer contains severe misconceptions.	1 – 4
2	For an under-developed answer on the benefits of achieving price stability and other macroeconomic objectives. Does not make reference to any economies Indirect link (max. 7m)	5 – 7
3	For a well-developed answer on the benefits of achieving price stability and other macroeconomic aims. Answer that applies to real world context. Contains only minor misconceptions.	8 – 10
E1	For an answer that gives an unsupported evaluative statement on whether the size of multiplier is the most important factor.	1
E2	For an answer that makes some attempt at evaluation or a conclusion that answers the question but does not explain the judgment or base it on analysis.	2 – 3
E3	Economic judgment with justification on why price stability is most important relative to other macroeconomic objectives using clear economic framework. Students need to present their own opinion backed up by: <ul style="list-style-type: none"> • Present economic conditions • Economics characteristics of country • Stage of economic development • Short-term vs. long term goals 	4 – 5

Suggested Answers for H2 Economics (9757) Paper 2

6 (a) Using examples, explain why comparative advantage of a country might change over time. [10]

(b) To what extent should changing comparative advantage be used as a justification for protectionism? [15]

- Explain how a country can have a CA over another country in the production of a good if it incurs a lower opportunity cost than that country in producing the good.
- Explain that changes in CA can be due to changes in the quantity and quality of its factor endowment or rate of change in technological advancement.
 - Using the same or another illustration, explain how depletion of unskilled labour -> increase in their wages -> increase in unit COP of producing labour intensive manufactured goods -> i.e. need to incur a higher opportunity cost in terms of another good forgone. The opportunity cost may then become higher compared to its competitors, ceteris paribus -> lost its CA. Highlight how exhaustion of quantity of resources (labour, land and natural resources) -> erosion of CA for the country
 - Using the same or another illustration, explain how new CA can be developed through R&D -> higher rate of technological advancement than its competitors -> gain CA in higher-valued added goods. For example, explain how emergence of new competitors (from emerging countries) with advanced technology -> greater efficiency in producing a good -> fall in unit cost -> will be able to produce more of a good with the same resource cost. Assuming ceteris paribus -> fall in opportunity cost of producing the good in terms of alternatives forgone. If opportunity cost becomes lower than its competitors -> country gained CA in the production of the good

Level	Descriptors
L1 (1-4)	<p>L1 Knowledge/ Recognise (Description)</p> <ul style="list-style-type: none"> • Answers are descriptive and largely irrelevant • Concepts are descriptive or explained with many errors • Poor use of examples • Weak or inappropriate applications of the concepts. <ul style="list-style-type: none"> ○ Merely state the theory of CA but did not explain why it might change. ○ No economic framework
L2 (5-7)	<p>L2 Consolidate (Add some detail – application)</p> <ul style="list-style-type: none"> • Attempt to explain the theory of CA and why it might change overtime but insufficient in scope and depth. • Attempt at exemplification
L3 (8-10)	<p>L3 Elaborate (Extend to include analysis)</p> <ul style="list-style-type: none"> • Clear economic explanation of what is meant by CA and why it might change overtime due to changes in quantity or quality of factor endowments and rate of advancement in technology • Sufficient scope and depth • Excellent exemplification that draw out the impact of changing factor endowments / rate of advancement in technology on opportunity cost -> change in CA.

Suggested Answers for H2 Economics (9757) Paper 2

- b) To what extent should changing comparative advantage be used as a justification for protectionism?

Introduction

- Identify that infant industry and declining industry arguments for protectionism are based on the concept of changing comparative advantage, i.e. dynamic CA.

Development: Explain the arguments for and against protectionism based on these two arguments

Thesis

Explain how protectionism based on infant industry and declining industry arising from changing CA can help the economy achieve its macroeconomic goals (Eg. promote economic growth, increase employment, improve C/A) or how without protectionism will have implications on macro goals (c/a deficit, EG, retrenchment -> structural unemployment)

Thesis 1: Infant Industry Argument – For sustained economic growth

An infant or newly established industry needs help in its initial stages because heavy initial costs are likely to be incurred and these costs cannot be completely covered by the initial small output. Time is needed to develop skilled management, reputation and exploit efficient technologies.

Because such industries have potential comparative advantage, a guaranteed home market will enable them to gain EOS and gain experience in production. Once they have achieved comparative advantage, the protection will be removed. They will be able to compete in the world markets as their prices are now comparable to similar exports from other countries.

Thus despite the inefficiency that restricting imports cause, government will justify the use of these protectionist methods if the long term benefits of growing the infant industries outweigh the short term deadweight losses to society.

Thesis2: Declining Industry Argument - Avoiding Structural Unemployment

Structural change occurs due to the loss of comparative advantage due to, say, the emergence of a low cost country. Given occupational or geographical immobility of labour, the structural change will lead to structural unemployment. Hence protectionism is sometimes adopted as a way to avoid the unemployment.

Workers in developed countries have claimed that their standard of living was undermined by the import of cheaper goods. Without protection, the local industries will be edged out and have to close down, resulting in the fall in employment and standard of living. To protect their jobs, they hence press for higher tariffs and other means to keep out the goods. This argument has been used in the US to protect the automobile, steel and textile industries.

Antithesis

Explain how such reasons should not be used given the welfare loss due to higher domestic prices and lower output -> Protecting domestic industries at the expense of consumers [graph to show welfare loss from tariff]. Breed inefficiency given the fall in competition. Beggar thy neighbour -> retaliation -> Protecting domestic industries at the expense of export industries

Antithesis 1: The infant industry argument should not be used as a justification because it did not consider the consequences -

Suggested Answers for H2 Economics (9757) Paper 2

- It may lead to wastage of resources and welfare loss if the potential CA is not realized - It is difficult to identify with certainty industries that are presently unprofitable but which may acquire comparative advantage in the long run. The government may incorrectly choose those industries without any potential comparative advantage. This leads to wastage of resources as government incur opportunity costs from subsidies given to these industries, and domestic consumers do not get to maximize their welfare due to higher domestic price compared to imports. If investments were made in other areas, the rate of economic growth and employment creation could be faster.
- It may breed inefficiency due to the lack of competition. It is difficult to decide when the industry is fully and sufficiently established and hence able to do without protection. Some may remain as 'perpetual infants', requiring continual protection for survival and may continue to be inefficient and backward for a long time. This is because they are not subjected to the 'discipline of the free market' and hence suffer from X-inefficiency to lower unit cost of production sufficiently to become internationally competitive on their own.
- It is difficult to remove protection once it is given due to vested interest and political pressures, especially if the government receives political funding from firms in such industries. Many governments may not give an "expiry date" on the protection given to infant industries.

Anti-thesis 2: The declining industry argument should not be used as a justification because it did not consider the consequences

- Such protection may unnecessarily slow down the restructuring process, depriving the other thriving industries of valuable resources
- The problem is often a lack of willingness to restructure when a country loses its comparative advantage over time.
- Tariff protection against low-cost producing countries will safeguard workers in the protected high wage industries but at the expense of firms, which use these products as factor inputs. Consumers will also be denied the opportunity to buy from the cheaper source of supply. Therefore, benefits from trade will be lost.

Evaluation

- **Can be deemed as a valid justification due to factor immobility.** Need time to develop new industries that it is gaining CA in and shut down declining industries which it is losing CA in. At most a short term solution. Need to establish a fixed time period and need to complement with SS-side policies such as retraining of workers
- But changing CA affects all countries and imperfect factor mobility is a reality– if used as a justification -> all countries can adopt protectionism -> fall in world trade and rise in self-sufficiency -> fall in world output and increase in global prices
- Instead, decision to adopt protectionistic measures can be due to other more valid reasons - unfair trade but hard to find evidence.

Level	Descriptors
L1 (1-4)	<p>L1 Knowledge/ Recognise (Description)</p> <ul style="list-style-type: none"> • Answers are descriptive and largely irrelevant. Students merely regurgitate the pros and cons of protectionism without applying to context of changing CA. • Concepts are descriptive or explained with many errors • Poor use of examples • Weak or inappropriate applications of the concepts • Explain other reasons for protectionism instead when the question is on 'changing CA'. Did not address the problem
L2	L2 Consolidate (Add some detail – application)

Suggested Answers for H2 Economics (9757) Paper 2

(5-7)	<ul style="list-style-type: none"> • Imbalanced approach of whether protectionism is justified or is not justified when CA changes. I.e. only explained why changing CA should or should not be used as justification for protection. If a balanced argument is given, it is probably limited in depth • Lacks scope and depth • Attempt at exemplification
L3 (8-10)	<p>L3 Elaborate (Extend to include analysis)</p> <ul style="list-style-type: none"> • Balanced approach on the extent that changing CA is a valid justification for country to adopt protectionism by examining all the benefits and costs of protectionism given the context of changing CA. • Excellent use of examples to exemplify the above
Evaluation	
E1 (1)	<ul style="list-style-type: none"> • Random evaluation or generic limitations on protectionism without context
E2 (2-3)	<ul style="list-style-type: none"> • Able to make a judgement on the extent that changing CA is a valid reason for protectionism although the reasoning may not be clear.
E3 (4-5)	<ul style="list-style-type: none"> • Able to make a judgement on the extent that changing CA is a valid reason for protectionism <u>by setting the conditions</u> for it to be valid