Candidate Name: _____ Class | Adm No

H

millennia institute

2024 Preliminary Exams
Pre-University 3

ECONOMICS **9570/02**

Paper 2: Essays **16 September 2024**

Additional Materials: Answer Booklet **2 hours 30 minutes**

READ THESE INSTRUCTIONS FIRST

Write your name and class on all the work you hand in.
Write in dark blue or black pen on both sides of the paper.
You may use a soft pencil for any diagrams or graphs.
Do not use staples, paper clips, highlighters, glue or correction fluid.

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.

You are reminded of the need for clear presentation in your answers.

An answer booklet will be provided with this question paper. You should follow the instructions on the front cover of the answer booklet. If you need additional paper, ask the invigilator for a continuation booklet.

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

Answer **three** questions in total.

Section A

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

1 In 2021, in response to a large rise in residential property prices, the Singapore government raised the Additional Buyer's Stamp Duty (ABSD). This is a tax that buyers must pay for purchases of residential properties. The authorities also pledged to increase the supply of both public and private housing to meet demand.

Source: Monetary Authority of Singapore, December 2021

(a) Explain why there might be a large rise in residential property prices in Singapore. [10]

(b) Discuss the effectiveness of the above measures to ensure that the residential property prices remain stable in Singapore. [15]

2 Economists usually assume that the objective of firms is to maximise its profits. However, firms sometimes engage in pricing and non-pricing strategies that lead to lower profits.

(a) Explain why pricing and non-pricing strategies adopted by firms might lead to lower profits. [10]

(b) Discuss whether a firm's objective is the main determinant of its price and output decision. [15]

3 Health insurance helps pay for health care costs in the event of an injury, illness or disability. While some countries implement a compulsory health insurance scheme for all citizens, it is not considered a public good.

(a) Explain why health insurance is not considered a public good and why information failure might cause the market for health insurance to fail. [10]

(b) Discuss the measures that a government can implement to address the different market failures caused by information failure in the health insurance market. [15]

Section B

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

4 Governments have aims in relation to employment and the balance of trade.

(a) Explain the consequences of failing to achieve these aims. [10]

(b) Discuss whether failure to achieve these macroeconomic aims is more likely to be caused by internal or external factors. [15]

5 Singapore's standing as a trusted hub for business and a critical global supply chain node has helped to attract a record $22.5 billion in foreign direct investments (FDI) driven by the electronics sector.

(a) Using the circular flow of income model, explain how investments lead to a multiplied increase in national income. [10]

(b) Discuss the extent to which such FDI inflows would be beneficial to Singapore's standard of living. [15]

6 While Singapore has an extensive network of 27 implemented agreements with bilateral and regional free trade agreements (FTAs), the future of Singapore's economy will also depend heavily on its ability to use science, technology and innovation.

(a) Explain the benefits of international trade to consumers and producers. [10]

(b) Discuss whether the signing of FTAs is the best way to ensure that Singapore continues to benefit from international trade. [15]

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1 In 2021, in response to a large rise in residential property prices, the Singapore government raised the Additional Buyer's Stamp Duty (ABSD). This is a tax that buyers must pay for purchases of residential properties. The authorities also pledged to increase the supply of both public and private housing to meet demand.

Source: Monetary Authority of Singapore, December 2021

(a) Explain why there might be a large rise in residential property prices in Singapore. [10]

(b) Discuss the effectiveness of the above measures to ensure that the residential property prices remain stable in Singapore. [15]

Command word	Explain why – reasons
Concept	Large rise in prices – demand and supply factors, price elasticities of demand and supply
Context	Property prices in Singapore
R1: Explain how DD factor and PES leads to a large increase in prices of residential property in Singapore **R2:** Explain how SS factor and PED leads to a large increase in prices of residential property in Singapore	

Requirement	**Suggested answer**
Introduction	Given Singapore's land constraints, there is a limited amount of land that can be allocated residential properties. This coupled with aspirations of Singaporeans to own home as higher prices caused by an increase in demand and a limited supply.
R1: Explain how DD factor and PES lead to a large increase in prices of residential property in Singapore	• There has been an **increase in demand** for residential properties in Singapore. This can be due to any of the following factors: o There has been increase aspirations of the population to own their own homes, even from single children who prefer to live on their own away from their parents. This **change in taste and preference** towards buying a residential property has resulted in an increase in demand. o At the same time, as Singapore recovers from Covid-19 and the economy opens up, the incomes of households have increased. Given the residential properties are normal goods, where **a rise in income leads to a rise in demand** (i.e. Income elasticity of demand (YED) > 0), the demand for residential properties will rise in tandem with income. o With the economy opening up, **more foreigners are returning to Singapore to work and live**. This will drive up demand for residential properties, given that foreigners will need a place to stay while in Singapore. Even if foreigners are looking to rent a place over a shorter-term period of 6 months to 1 year, this will induce increase in demand for residential properties among locals who seek to purchase the properties to rent out as a form of investment. o With higher incomes and positive economic outlook, **consumers may have expectations of future increases in the price of residential**

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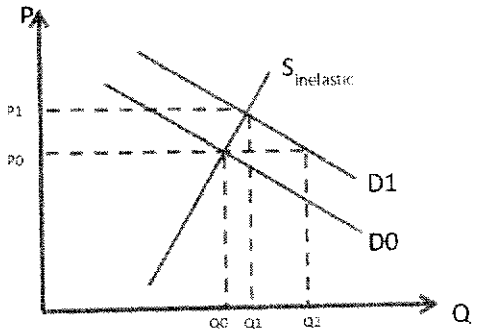
	properties. This coupled with a rise in demand for rental housing, due to the increase in number of foreigners in Singapore, will lead to a rise in demand for residential properties. • The **supply** of residential property in **price inelastic**, which contributes to a large rise in price when demand increases. Supply of residential property is price inelastic (i.e. PES < 1) due to the length and complexity of the production process, as well as the limited land, capital (machinery) and labour (construction workers) available, which makes it difficult for firms to increase the quantity supplied quickly in response to price changes. • Diagrammatic analysis o The original market equilibrium is at P0 and Q0 where demand (D0) intersects with supply. o The rise in demand for residential properties is represented by a rightward shift of the demand curve from D0 to D1. o This leads to a shortage of residential properties Q0Q2 at the original price, P0. o This will lead to an upward pressure on the market price. As price increases, quantity demanded falls and quantity supplied rises. This continues until a new equilibrium price and quantity is reached at P1 and Q1. o Given that supply is price inelastic, quantity supplied is not able to respond quickly when there is a change in price. As such, a rise in demand leads to large increase in price.  Figure 1.1: Rise in demand with inelastic supply
R2: Explain how SS factor and PED lead to a large increase in prices of residential property in Singapore	• There has been a **fall in supply** of residential properties in Singapore. Changes in supply can be a result of changes in price of raw material as well as the price and productivity of factors of production. This can be due to any of the following factors: o There has been a **rise in costs of raw material for construction**, such as sand and metals, due to supply chain disruptions and competing demand from other infrastructure works in Singapore. This can be attributed to permanent changes in global supply chain post-Covid 19, where countries diversify and reduce dependency on single sources of inputs, which result in higher costs, as well as recent wars in Russia-Ukraine and the Middle East, which can disrupt supply. o There has also been a **rise in costs of labour**, due to a shortage of foreign construction workers, given that those who left Singapore

earlier during the Covid-19 pandemic may not have returned in the immediate post-Covid period.

- The **demand** of residential property in **price inelastic**, which contributes to a large rise in price when supply decreases. Demand of residential property is price inelastic (i.e. PED < 1) due the high degree of necessity for the good and a lack of close substitutes, given that people need a place to stay and there are few alternatives of owning a residential property to stay at.
- Diagrammatic analysis
  - The original market equilibrium is at P0 and Q0 where demand intersects with supply (S0).
  - The fall in supply for residential properties is represented by a leftward shift of the supply curve from S0 to S1.
  - This leads to a shortage of residential properties Q1Q0 at the original price, P0.
  - This will lead to an upward pressure on the market price. As price increases, quantity demanded falls and quantity supplied rises. This continues until a new equilibrium price and quantity is reached at P1 and Q1.
  - Given that demand is price inelastic, quantity demanded is not able to respond quickly in response to a change in price. As such, a fall in supply leads to large increase in price.

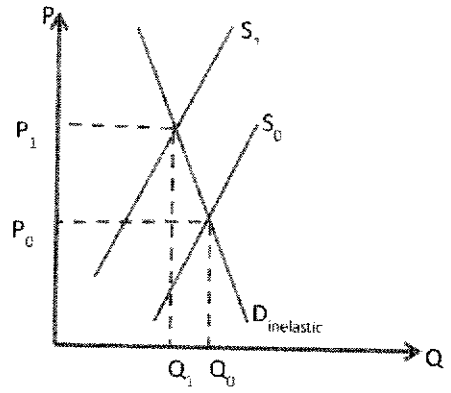


Figure 1.2: Fall in supply with inelastic demand

- (Alternative answer) Small increase in supply, together with a large increase in demand.
- Supply has been increasing slowly, due to the slow release of land parcels by the Singapore government, given the land constraints in Singapore. At the same time, foreign construction workers are only slowly starting to return after Covid-19, resulting in a limited increase in labour.
- Diagrammatic analysis
  - Simultaneous shifts showing a large increase in demand and a smaller increase in supply.
  - While an increase in supply leads to a fall in price, and a much larger increase in demand lead overrides the fall in price and creates a shortage at the original price P0.

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- This will lead to an upward pressure on the market price. As price increases, quantity demanded falls and quantity supplied rises. This continues until a new equilibrium price and quantity is reached at P1 and Q1.

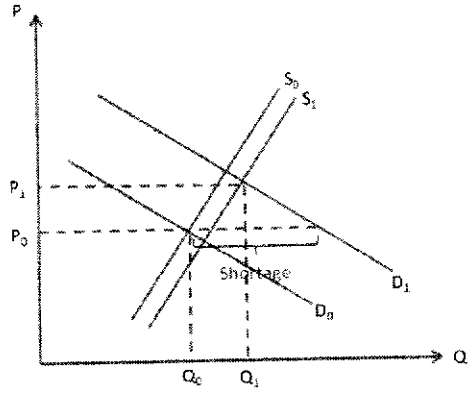

Figure 1.3: Market for residential property in Singapore

(b) Discuss the effectiveness of the above measures to ensure that the residential property prices remain stable in Singapore. **[15]**

Command word	Discuss – at least two measures with evaluation
Concept	Measures to maintain price stability
Context	Residential property market in Singapore

R1: Explain how increasing the Additional Buyer's Stamp Duty (ABSD) is effective in reducing prices residential property
R2: Explain how increasing supply of private and public housing helps to reduce residential property prices

Evaluative conclusion: Substantiated judgment on the effectiveness of both measures.

(b) Discuss the effectiveness of the above measures to ensure that the residential property prices remain stable in Singapore. **[15]**

Requirement	**Suggested answer**
Introduction	The raising of the Additional Buyers' Stamp Duty (ABSD) and increasing the supply of housing helps to reduce demand and increase supply of housing, ultimately helping to keep prices of residential property stable.
R1: Explain how increasing ABSD is effective in reducing prices residential property	• To address the large increase in demand, the government has raised the ABSD, which is a tax buyers must pay when buying a residential property. • Given that this is a direct tax on buyers, this will result in a fall in demand, given that buyers now have to take into account the additional costs of buying a residential property. • With reference to the diagram below, the fall in demand is represented by a leftward shift in the demand curve from D_0 to D_1. • The initial market equilibrium is represented by P_0 and Q_0. The fall in demand results in a surplus at original price P_0. This leads to a downward

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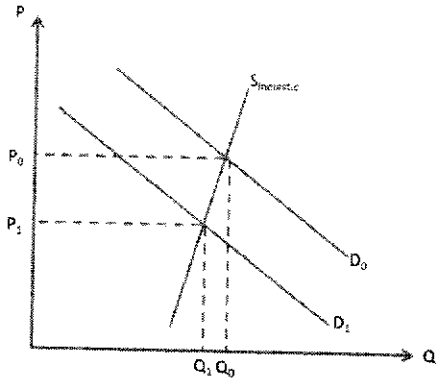
	pressure of prices, with quantity supply decreasing and quantity demanded increasing until the new equilibrium of P_1 and Q_1. • Given that supply of residential property is price inelastic, any fall in demand will likely be very effective in leading to a large fall in prices, and this would be an effective policy to keep prices stable.  Figure 1.4: Effect of raising ABSD on residential property market in Singapore
Evaluation of R1	• However, whether raising ABSD on its own can keep prices stable depends on root cause of the increase in prices. • ABSD will be effective on its own if prices have risen primarily due to an increase in demand, such as due to rising incomes or increase in foreign demand. • Nonetheless, if the rise in prices is primarily due to supply reasons, such as a rise in costs of raw material, raising ABSD on its own may be less effective to maintain stable prices, since it does not directly address the supply issues which can persist even after the ABSD is raised. • To prevent future increase in demand from raising prices to a large extent, it is also important to introduce measures to reduce the price elasticity of supply.

R2: Explain how increasing supply of private and public housing is effective in helping to reduce residential property prices	• As such, it is important to consider the alternative policy to increase the supply of private and public housing.
	• The government can do this by:
	  • releasing more land parcels to allow HDB and private property developers to build residential housing for sale,
	  • jointly develop housing with private developers to increase supply of residential properties,
	  • providing subsidies to private developers,
	  • allow more migration of foreign construction workers to lower labour costs, and
	  • maintaining stable and diversified sources of inputs of construction raw material such as sand and metals.
	• With reference to the diagram below, this would lead to an increase in supply, which is represented by a rightward shift in the supply curve from S_0 to S_1.
	• The initial market equilibrium is represented by P_0 and Q_0. The increase in supply results in a surplus at original price P_0. This leads to a downward

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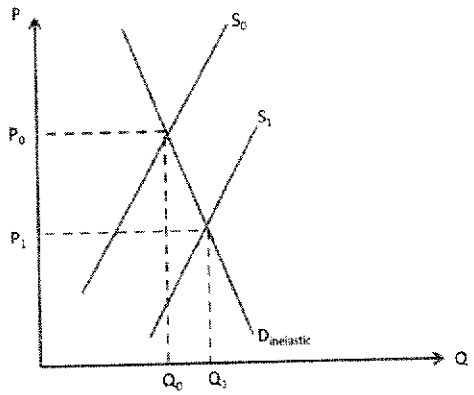
	pressure of prices, with quantity supply decreasing and quantity demanded increasing until the new equilibrium of P_1 and Q_1. • Given that demand of residential property is likely price inelastic, any increase in supply will likely be very effective in leading to a large fall in prices, and this would be an effective policy to keep prices stable.  Figure 1.5: Effect of increasing supply on residential property market in Singapore
Evaluation of R2	• Given the long time it takes to build new residential properties, it might take some time for an increase in supply of private and public housing to solve the high prices in the residential market in Singapore. • Encouraging construction of residential properties also mean that there will be delays in other infrastructure projects, such as roads, parks and recreational spaces. The government will need to weigh the trade-off to ensure that the needs of members of public other than homebuyers are catered for.
Evaluative conclusion	• Need both policies to address both demand and supply causes to have an effective overall policy. • The different policies address different root cause of the rise in price. • The policy to reduce demand addresses the short-term increase in prices, while the policy to increase supply addresses the longer-term issues of price stability in the residential market in Singapore.

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2 Economists usually assume that the objective of firms is to maximise its profits. However, firms sometimes engage in pricing and non-pricing strategies that lead to lower profits.

(a) Explain why pricing and non-pricing strategies adopted by firms might lead to lower profits. [10]

(b) Discuss whether a firm's objective is the main determinant of its price and output decision. [15]

Command word	Explain why – reasons
Concept	Pricing and non-pricing strategies; Profits (total revenue – total costs)
Context	Nil
R1: Explain why pricing strategy (e.g. predatory/limit pricing) can lead to lower profits, i.e. by pricing lower than profit maximising point. **R2:** Explain why non-pricing strategy (e.g. marketing, innovation) can lead to lower profits, due to the costs of marketing/innovation efforts.	

Command word	Explain why – reasons
Concept	Pricing and non-pricing strategies; Profits (total revenue – total costs)
Context	Nil
R1: Explain why pricing strategy (e.g. predatory/limit pricing) can lead to lower profits, i.e. by pricing lower than profit maximising point. **R2:** Explain why non-pricing strategy (e.g. marketing, innovation) can lead to lower profits, due to the costs of marketing/innovation efforts.	

Requirement	**Suggested answer**
Introduction	• The traditional objective of firms is to maximise profits, which is total revenue minus total costs. • Firms engage in pricing and non-pricing strategies to maximise profits in the long run. • However, such strategies can lead to lower profits due to lower revenue or higher costs in the short run.
R1: Explain why pricing strategy (e.g. predatory/ limit pricing) can lead to lower profits, i.e. by pricing lower than profit maximising point.	• One example of a pricing strategy is predatory pricing (or limit pricing) • **Predatory pricing** is when the firm sells a good below its average cost (AC) in order to drive its competitors out of the industry or prevent new entrants into the industry; only to increase prices after it has regained its dominant position. • The firm will be making **subnormal profits** while it is implementing predatory pricing, as it aims to recoup its losses subsequently as a monopoly making supernormal profits once it has secured market dominance.

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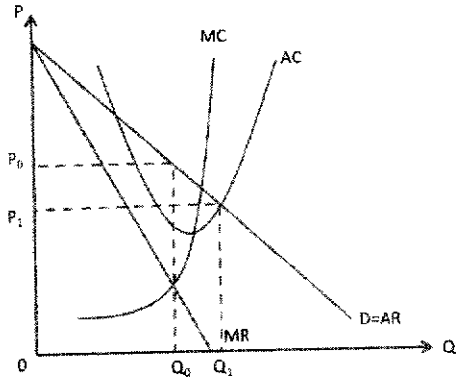
	• With reference to the diagram below, a firm operating in an imperfect market, such as a monopoly or oligopoly, has a downward sloping demand or average revenue (AR) curve. • Assuming that the firm is a profit-maximiser, it chooses to produce where marginal cost (MC) = marginal revenue (MR) at Q_0, and charges price P_0, as this is where profits are maximised. • A firm that is implementing predatory pricing will price its good **less than P_1=AC**, such that it is making subnormal profits. • This is because when P < AC, the total revenue (AR*Q) is less than the total cost (AC*Q), which results in subnormal profits. • This explains why pricing strategy can lead to lower profits than producing at the profit-maximising output level.  Figure 2.1: Pricing strategies of firms • (Alternative answer) **Limit pricing** is when the firm sets its prices at a level that is low enough to discourage new firms from entering the market, but high enough to still be profitable for the incumbent firm. • While the firm is not be producing at its profit maximising level, it can still be making supernormal profit where TR > TC. The firm sacrifices some profits in the short run to deter potential new entrants from entering the industry. • With reference to Figure 2.1, the firm will price its good **between P_0 and P_1**. This means that it will make less profit than the profit-maximising output of Q_0, but will make more than normal profit since it is pricing above P_1 = AC, which is the point where the firm is making normal profits.
R2: Explain why non-pricing strategy (e.g. marketing, innovation) can lead to lower profits, due to the costs of marketing/innovation efforts.	• One form of non-pricing strategy is **marketing**, which refers to efforts taken to promote its product. Examples include persuasive advertising where a firm aims to subjectively influence consumers about the quality or desirability of its product, or informative advertising, which aims to inform consumers on the prices and other tangible characteristics of its products. • Advertising that aims to increase perceived differences in the firm's product have the effect of increasing demand, or average revenue (AR) for the product, making the demand more price inelastic.

- However, this increase in AR does not take into account the costs of advertising, which can reduce profits of firms.
- As shown in Figure 2.2, the increase in fixed costs of advertising can be represented by an upward shift of the AC curve. Advertising costs are usually fixed because it does not vary by the number of goods that is produced.
- With an increase in AC, the level of profits falls from the larger blue shaded area to the smaller red shaded area.

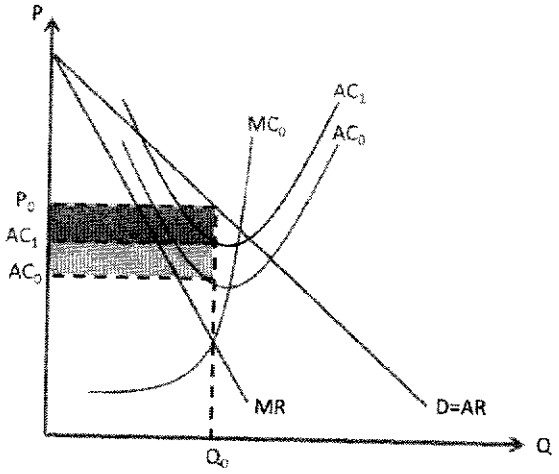


Figure 2.2: Increase AC for firm

- In addition, the benefits of advertising in raising revenue are likely to accrue only in the long term, as the product gains familiarity and builds brand loyalty among consumers, while the costs of advertising is incurred from the short term.
- This means that a firm is likely to face a lower profit in the short run and will only start benefiting from higher profits in the long run, even if advertising is successful at raising additional revenue.

(b) Discuss whether a firm's objective is the main determinant of its price and output decision. [15]

Command word	Discuss: 2-sided (more than 1 determinant) with evaluation
Concept	Determinants of price and output (e.g. objectives of firms, strategies, market power, government intervention, cost structure, business cycle, supply shock)
Context	Nil

R1: Explain why a firm's objective is a determinant of its price and output decisions

R2: Explain one alternative determinant of a firm's price and output decisions

Evaluative conclusion: Substantiated judgment on the main determinant of price and output decisions of a firm.

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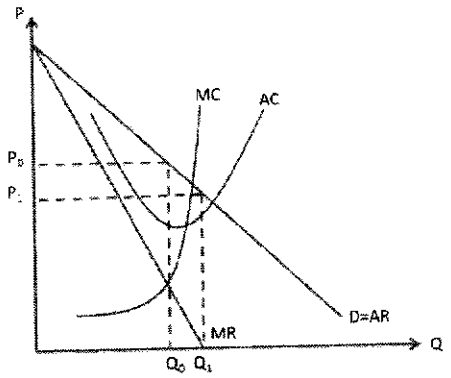
Requirement	Suggested Answer
Introduction	• There are different determinants that affect price and output decisions of a firm, which can be grouped by internal factors that a firm can control, and external factors which a firm cannot control.
R1: Explain why a firm's objective is a determinant of its price and output decisions	• The **traditional objective of firms is to maximise profits**, and this underpins the theoretical price and output decisions of firms. • Assuming the firm is a monopoly, since the monopolist is the only firm in the industry, the downward-sloping market demand curve is also the monopolist's demand curve. • A firm maximises profits when its marginal cost (MC) = marginal revenue (MR). This is a situation where there is no tendency for firm to change its output level. • To explain why MC=MR is the profit maximising output level, when MC < MR, producing an extra unit of output adds more to revenue than to cost and total profit will increase. • On the other hand, when MC > MR, producing an extra unit of output adds more to cost than to revenue and total profits will decrease. • With reference to Figure 2.3, profit is maximised when MC = MR at P_0 and Q_0. • However, firms may operate with objectives other than profits maximisation. **One alternative objective is revenue maximisation**. • While shareholders are rewarded by high profits, managers who are employees of the firms may be judged by their sales revenue. This may be because the incomes of managers and commission-based employees are largely dependent on the firm's total revenue, rather than profit which takes costs into account. • In such a scenario, revenue maximisation may become the firm's objective instead. Given that total revenue is maximised at the output where no additional revenue can be made from producing and selling an additional unit of output, the output where a firm maximises its revenue is at MR = 0. • This corresponds to the output level Q_1 in Figure 2.3, which is larger than the profit maximising output Q_0, and a lower price of P_1. • As such, a firm's objectives is a determinant of its price and output decisions.  Figure 2.3: Profit maximisation vs revenue maximisation

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	Also accept alternative answers for profit satisficing or market share dominance.
Evaluation of R1:	• The alternative objectives of a firm may be aligned to the profit-maximisation objective in the long run. • For example, firms that aim for market share dominance may be looking to drive out competitors to gain a larger market share, and hence higher profits in the long run. • Alternatively, firms that aim for profit satisficing due to environment/ social reasons may not be truly altruistic and are seeking to maximise their profits by marketing their goods to environmentally/ socially conscious consumers instead. • Firms that aim to be profit maximisers may therefore have the same price and output decisions as firms with alternative objectives in the short run.
R2: Explain one alternative determinant of a firm's price and output decisions	• There are other determinants of a firm's price and output decisions. • One key determinant of a firm's price and output decisions is the **market power of the firm**, which is affected by the market structure that a firm operates in. • While a firm in imperfect markets face a downward-sloping firm demand curve (or average revenue (AR) curve), as shown in Figure 2.3, a perfectly competitive (PC) firm faces a perfectly elastic demand curve. • This is because a PC firm operates in an industry with many small firms selling a homogeneous product. • The firm is a price-taker and it sets its price based on the market price. • This is because any increase in price above the market price would cause the firm's quantity demanded to fall to zero, while there is no incentive to set below the market price since the firm is a profit maximiser. • At the market price, a PC firm can sell as high a quantity as they want without any influence on the market price, given that they take up a very small proportion of the market. • With reference to Figure 2.4, the market price is determined at P_0 by the market demand and supply, with the PC firm setting its price at the same price P_0 and output at Q_0 where MC=MR. • At the equilibrium, P = AR = MR = MC. • This differs from a monopoly, who sets a price P_M > MC, given that a monopoly faces a downward sloping AR and MR curve. • As such, the market power of a firm determines a firm's price and output decisions.

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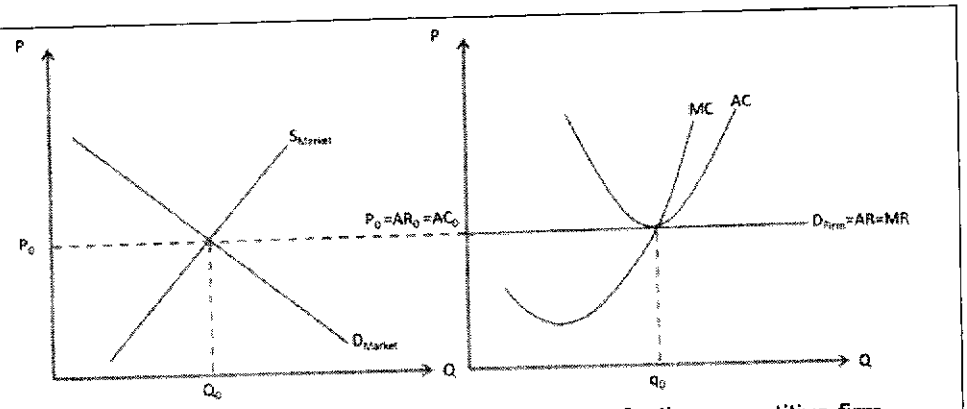

Figure 2.4: Price and output decision of a perfectly competitive firm

Accept other plausible determinants of a firms' price and output decisions, such as

- **Strategies** of firms (including pricing strategies, price discrimination, non-pricing strategies)
- **Government interventions** of firms, e.g. through price regulation (MC/AC pricing) or legislation (affects AR/MR or AC/MC)
- Size of firm leading to differences in costs of production due to **economies of scale** (AC/MC)
- Business cycles (**economic boom or recession**) affecting demand (AR/MR) of the firm
- **Supply shocks** affecting costs of production (AC/MC) of the firm

Evaluation of R2: Relevant evaluation depending on the chosen determinant	• Market power: For an oligopoly, price and output decisions can depend on whether it is a **competitive or collusive oligopoly**. A competitive oligopoly may compete on price and have regular price wars with its competitors, while a collusive oligopoly may have more stable prices as they behave like a single monopoly in the market or practise price leadership. • A competitive oligopolistic market may also see stable prices due to the due to a distinct pricing behaviour resulting from mutual interdependence that results in **price rigidity**, whereby a firm will not decrease prices as it expects its rivals to follow, while it will not raise prices as it expects no rivals will follow. *Evaluation of other plausible determinants* • Government intervention: governments may choose not to intervene in markets with market dominance and affect price and output decisions of firms if they subscribe to the **Theory of Contestable Markets** and try to keep barriers of entry and exit low instead. • Size of firm: A large firm may encounter **internal diseconomies of scale**, which may raise rather than reduce its costs of production • Business cycles: whether demand for the good increases or falls in an economic boom depends on the **income elasticity of demand** (i.e. whether it is a normal or inferior good) • Supply shocks: the extent of how the supply shock affects a firm's price and output depends on the **price elasticity of demand** for the good. For goods

	with inelastic PED, there would be a more than proportionate increase in price as compared to the fall in quantity when supply falls.
Evaluation conclusion	• External factors *(e.g. market structure of the industry, government intervention, global business cycles, supply shocks)* that a firm cannot control are likely more important than internal factors *(e.g. objectives of firms, firms' strategies)* that a firm can control in the price and output decisions that a firm makes. • When comparing firms of different market structures, perfectly competitive (PC) / monopolistically competitive (MC) firms do not have the ability to choose a different objective from profit maximisation, given that they make normal profit in the long run, as they will shut down if they do not try to maximise profit. As such, the market power of the firm is the main determinant of price and output decisions for PC and MC firms, as compared to monopolies and oligopolies.

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3 Health insurance helps pay for health care costs in the event of an injury, illness or disability. While some countries implement a compulsory health insurance scheme for all citizens, it is not considered a public good.

(a) Explain why health insurance is not considered a public good and why information failure might cause the market for health insurance to fail. [10]

(b) Discuss the measures that a government can implement to address the different market failures caused by information failure in the health insurance market. [15]

Command word	Explain why – reasons
Concept	Public good Information failure – misestimation of private benefits and costs, asymmetric information causing adverse selection and moral hazard
Context	Health insurance market
R1: Explain why health insurance is **not** a public good **R2:** Explain why the market for health insurance might fail due to **misestimation of private benefit and asymmetric information (either adverse selection or moral hazard)**	

Requirement	**Suggested answer**
Introduction	• Health insurance is not a public good as it does not fulfil the public good characteristics of being non-excludable and non-rivalrous in consumption. • The market of health insurance can fail due to information failure which includes the misestimation of private benefits and asymmetric information resulting in adverse selection or moral hazard.
R1: Explain why health insurance is **not** a public good	• Health insurance is not a public good as it is **excludable in consumption**. o Excludability refers to the ability of producers to prevent non-payers from consuming the good or service they produce. o For health insurance, sellers can easily prevent non-payers from claiming for insurance, given that sellers can check the claims for insurance against a registry of payers. o This is unlike a public good such as street lighting where it is not possible for sellers to exclude a non-payer from benefiting from lighting up a dimly lit space. • Health insurance is not a public good as it is **rivalrous in consumption**. o Rivalry in consumption means that the consumption of a good or service by one person reduces the amount or benefits available to others. o For health insurance, an insurance company that has set aside resources to pay for a buyer's healthcare costs cannot set aside the same resources to pay for the healthcare of another buyer. o This is unlike a public good such as national defence, where the protection of a citizen does not reduce the protection available to other citizens. • (Optional) Health insurance is not a public good as it is **rejectable in** consumption.

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- Rejectability refers to the ability of consumers to reject the consumption of the good.
- For health insurance, consumers can choose not to pay and therefore not be insured for healthcare costs.
- This is unlike a public good such as national defence, where the consumption of the good cannot be rejected by consumers since it is available collectively to all the people.

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<tr><td>R2: Explain why the market for health insurance might fail due to misestimation of private benefit <u>and</u> asymmetric information (<u>either</u> adverse selection <u>or</u> moral hazard)</td><td>

<u>Misestimation of private benefits</u>

- The market for health insurance may fail due to the **underestimation of private benefits**.
- Consumers may undervalue the benefits of consuming health insurance as they may underestimate their chances of consuming healthcare, or that the benefits of healthcare coverage are more likely to occur in the future when they are older and more prone to sickness.
- This causes their perceived marginal private benefit ($MPB_{perceived}$) to be lower than the actual marginal private benefit (MPB_{actual}).
- With reference to Figure 3.1, the market equilibrium quantity will be at Qe where $MPB_{PERCEIVED}$ = MPC.
- However, the socially optimal output where social welfare is maximised is at Qs where MSB = MSC.
- Since Qe is less than Qs, there is underconsumption of healthcare insurance.
- For the quantity in between Qe and Qs, MSB is more than MSC. This causes a deadweight loss of the shaded area as social welfare is not maximised. Hence, the market fails due to allocative inefficiency.

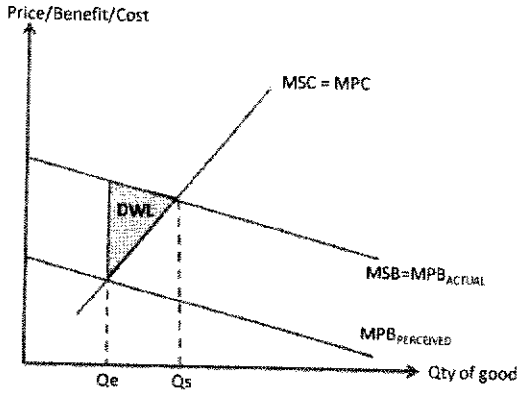

Figure 3.1: Market failure due to underestimating the MPB

<u>Asymmetric information</u>

- The market for health insurance may fail due to **asymmetric information resulting in adverse selection.**

Step 1: Explain who has more information and who has less information

- Consumers know whether they have a high risk of falling sick (e.g., if they tend to smoke and drink excessively) or a low risk of falling sick. However, as consumers might not divulge sufficient and accurate information to

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insurance companies, insurance companies have less information about the risk profile of consumers and cannot easily distinguish between high-risk and low-risk consumers.

Step 2: Explain how the agent with less information offers some 'average' price

- Since the insurance companies are unable to distinguish between high and low-risk consumers, they can only offer one type of insurance plan for all consumers based on averaging the risk. For example, an insurance firm might charge $150 a month to insure a high-risk consumer but only $50 a month to insure a low-risk consumer. However, because they cannot differentiate between the two, then it can only offer one plan where it collects $100 a month to insure any consumer.

Step 3: Explain how the agent with more information self-selects

- The problem with this is that high-risk consumers would find the plan more attractive than low-risk consumers since high-risk consumers have a higher likelihood of contracting diseases. However, low-risk consumers would not find it worthwhile to buy this plan. So, only high-risk consumers will buy the plan and low-risk consumers will leave the market (i.e., not buy any insurance).

Step 4: Explain the missing market

- The market fails because there is now a missing market for insurance for low-risk consumers and the social welfare that could have been generated from such a market are now forgone.
- Given that the low-risk consumers will leave the market, the market would be left with a larger proportion of high-risk consumers. As such, insurance firms would further increase the price they charge, and the cycle continues until the market for health insurance completely collapses.

(Alternative answer– asymmetric information resulting in **moral hazard**)

- The market for health insurance may fail due to asymmetric information resulting in moral hazard.
- Moral hazard is a situation in which economic agents take greater risks than they normally would because the costs that would result would not be borne by the economic agents themselves.
- In the case of health insurance, insurance companies do not know the risk that consumers might take that affects their healthcare spending after they purchased healthcare insurance.
- Consumers may take more risk with their health, such as engaging in risky behaviour such as high-risk sports or excessive consumption of unhealthy food, since consumers are not the ones paying for their healthcare costs after they have purchase health insurance
- As such, insurance companies will incur greater payouts, and would need to raise the insurance premiums charged to consumers to recoup these payments.
- In the extreme scenario, the excessive hefty insurance claims make it no longer profitable for an insurance firm to sell the insurance product.

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	Consumers who are willing and able to pay can no longer buy the product and the result is a "missing market". Hence, the market fails.

(b) Discuss the measures that a government can implement to address the different market failures caused by information failure in the health insurance market. [15]

Command word	Discuss: measures to address at least two market failures with evaluation
Concept	Government intervention to address at least two information failure: - misestimation of private benefits and costs - asymmetric information causing adverse selection - asymmetric information causing moral hazard
Context	Health insurance market
R1: Explain measures to address misestimation of private benefits **R2:** Explain measures to address adverse selection **Alternative R1/2**: Explain measures to address moral hazard **Evaluative conclusion:** Substantiated judgment on the different measures to address information failure	

Requirement	**Suggested answer**
Introduction	• A government may choose to implement a range of policies to increase the consumption of health insurance to the socially optimal output level in the case of the underestimation of private benefits. • In the case of asymmetric information, a government's objective is to correct the imbalance of information between consumers and producers to address adverse selection, or to change consumers' behaviour to take into account the costs of risky behaviour in the case of moral hazard. *Students may choose to explain measures to address **any two** market failures due to information failure* • *R1: Misestimation of private benefits* • *R2: Adverse selection* • *R3: Moral hazard*
R1: Explain measures to address misestimation of private benefits in the health insurance market	• One measure to address the **underestimation of private benefits** in the health insurance market is the use of subsidies. • Government can provide indirect subsidies, equal to the difference between actual and perceived benefits, to producers to lower the costs of the production of health insurance. • With reference to Figure 3.2, the original market equilibrium before subsidies was at Qe and the social optimum was at Qs. • With the subsidy causing MPC to shift rightwards to MPC + subsidy, the market equilibrium quantity increases from Qe to Qs. Since Qs is the social optimum, the original underconsumption is corrected. Deadweight loss (DWL) is avoided.

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	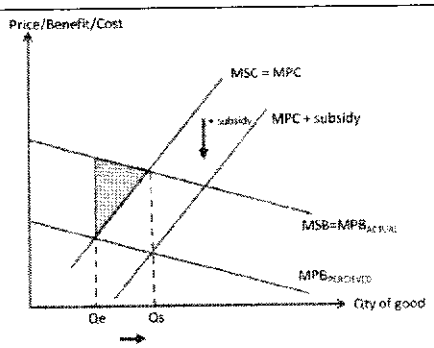 Figure 3.2 Subsidies correcting underestimated benefits *Accept alternative government interventions (e.g. legislation for compulsory consumption, education & campaigns to increase consumption) to achieve socially optimal output level.*
Evaluation of R1	• The government may not have information about the size of the deadweight loss and the socially optimal output level, and hence may not be able to provide the correct amount of subsidy to correct the market failure. Subsidies that are too high or too low will still result in market failure. • There may also be a case of government failure if subsidies are too large, such that it results in a DWL that is larger than the original DWL.
R2: Explain measures to address **adverse selection** in the health insurance market	• One measure to address **adverse selection** in the health insurance market is the implementation of a compulsory health insurance scheme, which is a **direct provision of health insurance** and a form of **compulsory risk-pooling** • For example, Singapore implements the MediShield Life, which is a national insurance scheme that is compulsory for all Singapore Citizens and Permanent Residents. • Compulsory health insurance schemes prevent adverse selection since consumers cannot choose not to purchase the good/service and leave the market. • Sellers of insurance will therefore not face a situation where there are different groups of high-risk and low-risk consumers who can self-select out of purchasing the product. • The direct provision of health insurance means that the government has direct control over the supply of the good or service and can fund losses made from providing such an insurance with tax revenue. • By controlling the supply of these goods and services, the government can control not just the quantity, but also its affordability and quality. In this case, the government can dictate the price of the plan and the amount of medical coverage to provide under the insurance plan. *Accept alternative government intervention to introduce legislation for mandatory information sharing.*

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Evaluation of R2	• An issue with compulsory health insurance schemes is the high administrative costs in terms of monitoring and enforcement to ensure compliance. • There are additional operational costs of administering the scheme, such as the processing of claims and the issuance of payments to healthcare providers. • Consumers who do not have the ability to pay for the premiums will also need to be subsidised by the government to implement a compulsory insurance scheme. • These additional costs incur opportunity costs that need to be weighed against the benefits of alternative uses of government resources.
Alternative R1/R2 R3: Explain measures to address **moral hazard** in the health insurance market	• One measure to address **moral hazard** is legislation to ensure **deductibles and co-payment** are incorporated into health insurance schemes. • A co-payment scheme requires insurance firms to require consumers to co-pay a share of the healthcare costs to reduce moral hazard from consumers of over consuming health insurance. Consumers will consider their share of the healthcare costs before engaging in risky behaviour that might result in higher costs. • A deductible scheme requires consumers to pay a fixed amount of their healthcare bill first before they are allowed to claim healthcare costs from the insurance firms. Similar to co-payment, this means that consumers will be less incentivised to engage in risky behaviour as they would have to foot part of the bill first. • For example, MediShield Life insurance legislated by the Singapore Government incorporates deductible and co-payment requirements. Under MediShield Life, claimants are required to pay a deductible of between $1,500 to $3,000 and a co-insurance of between 3 and 10 per cent of the cost of the treatment net of the deductible. • Since 2015, insurance firms in Singapore are not allowed to sell insurance plans that allow buyers to have no co-payments. This bill was passed as the government felt that the spiralling cost of Medishield premiums was due to the moral hazard problem.
Evaluation of R3	• The use of deductibles and co-payment may fail to change the behaviour of consumers, as the government may not know the correct level of deductibles or co-payment to reduce risky behaviour adequately. • Deductibles and co-payment that is set too high may discourage consumers from purchasing health insurance. This worsens market failure due to misestimation of private benefits. • There may be inequity issues as the use of deductibles and co-payment increases the payments from consumers and may result in lower-income consumers not being able to afford health insurance
Evaluative conclusion	• Given that most policies require government resourcing to implement, the government will need to weigh the extent of market failure in the health insurance market as compared to other goods to consider whether it should intervene.

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4 Governments have aims in relation to employment and the balance of trade.

(a) Explain the consequences of failing to achieve these aims. [10]

(b) Discuss whether failure to achieve these macroeconomic aims is more likely to be caused by internal or external factors. [15]

Question Analysis for part (a):

Command Word:
- "Explain" → Make clear the cause and effect relationships→ define, illustrate & elaborate with examples and economic concepts

Key Economic Concepts:
- "consequences of failing to achieve these aims in relation to employment and balance of trade"→ negative consequences of unemployment and persistently large BOT deficit/surplus on the economy

Context:
- None give → give own context where relevant

Requirement 1: Explain the negative consequences of unemployment on the economy
Requirement 2: Explain the negative consequences of persistently large BOT deficit/surplus on the economy

Requirement	Suggested answer
Introduction: - define key terms - give overview	Full employment and favourable balance of trade (BOT) are two of the four macroeconomic objectives that a government aims to achieve. Failing to achieve these aims, that is, situations of unemployment and persistently large BOT deficit or surplus may lead to adverse impacts on economic performance and standard of living.
Requirement 1: Explain the negative consequences of unemployment on the economy *(at least 1 well-explained negative impact)*	When a government fails to achieve full employment, this can prevent the economy from achieving sustained growth, thus leading to lower current and future standard of living (SOL). Unemployment can be defined as the number of people who are actively looking for work but are unable to find jobs. Society loses some potential output of goods and services when some of its productive labour resources remain idle. The economy is thus productively inefficient and producing within the production possibility curve, that is, operating below the maximum output it could achieve. This is illustrated in figure 1.

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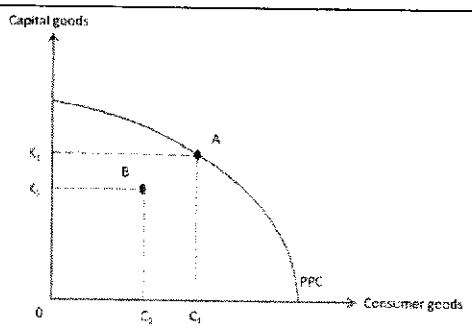

Fig. 1

At full employment, an economy would be able to produce at a point on the PPC, for example point A, where K1 capital goods and C1 consumer goods are produced. With unemployment, the economy may produce at point B where smaller quantities of both capital (K2) and consumer goods (C2) are produced. Potential output is lost, and this represents a serious wastage of resources as labour services of those unemployed cannot be stored up. The loss of potential output also includes the foregone production of capital goods which limits potential economic growth, leading to lower levels of consumption goods in the future and hence lower future standard of living.

High unemployment would put a strain on government budget which is the difference between tax revenue and government expenditure. With rising unemployment, the government loses tax revenue since the unemployed do not pay income tax. Additionally, the government also collects less consumption taxes given that the unemployed spend less and hence pay less expenditure taxes (e.g. GST). The government may also incur higher expenditures in the form of unemployment benefits and the provision of other welfare benefits to the unemployed. Both the fall in tax revenue and increase in government spending would impose a burden on the government budget. With less budget available for the government disposal, they would have to cut their spending. This would mean less fund available for other projects, such as public goods. This would further affect both material and non-material SOL and also hinder the government's ability to address inequity or achieve other macroeconomic objectives.

Furthermore, if the unemployment is severe and prolonged, there would be a loss of human capital, affecting both actual and potential growth. Many of these displaced workers experience deskilling when they start to lose the expertise they used to have and become structurally unemployed. They may become discouraged at repeatedly failing to secure a job and hence leaves the labour force altogether. As its labour force shrinks, the economy experiences lower productive capacity as the maximum level of output that it can produce is now lower with fewer labour to employ in the economy, shifting the LRAS curve to the left.

Even when these workers with deteriorating skills are re-employed into jobs, they may experience decreasing productivity with lower output produced per unit of labour input. This results in higher unit cost of production and lower

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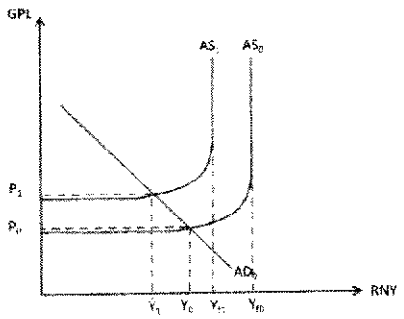
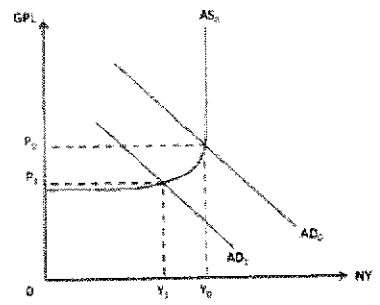
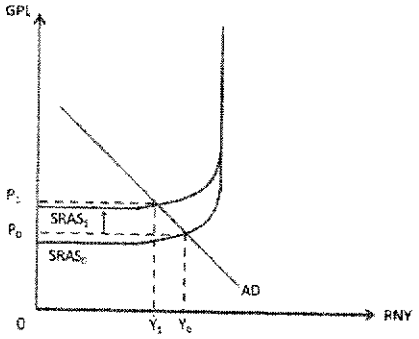
	productive capacity. This is represented by in upward and leftward shift of the AS curve from AS0 to AS1 as shown in figure 2.  Fig. 2 Thus the economy experiences lower actual growth as real national income falls from Y0 to Y1 and lower potential growth as productive capacity falls from Yf0 to Yf1.
Requirement 2: Explain the negative consequences of persistently large BOT deficit/surplus on the economy *(at least 1 well-explained negative impact)*	Failing to achieve a favourable BOT position could lead to other macroeconomic problems in the economy, which would adversely impact standard of living. The balance of trade is the difference between the export revenue (X) and import expenditure (M) on goods and services. A favourable BOT position is one where there is a small BOT surplus. If there is a BOT deficit instead, it means that the country is importing more than the value of its exports of goods and services. A large and persistent BOT deficit would lead to a fall in net exports (X-M) which is a component of AD, resulting in a more than proportionate fall in real national income via the reverse multiplier effect.  Fig. 3 Assuming the economy was originally at equilibrium with real national income at Yf and general price level at P1 as shown in figure 3. A fall in AD will shift the AD curve leftwards, causing an unplanned accumulation of stock which would put a downward pressure on the general price level. Firms will reduce production and require fewer factors of production. This decreases the real national output and income. Income-induced consumption decreases, and through the reverse multiplier process, the economy would

	experience a multiplied decrease in AD and real national income. Thus, the AD shifts from AD1 to AD2 and the economy moves to a new lower equilibrium, resulting in a fall in GPL from P1 to P2, and fall in real national income from Yf to Y2. As firms reduce their derived demand for labour, there is a rise in demand-deficient unemployment and hence lower SOL In addition, a persistent BOT deficit leads to a depreciation of the currency, as outflow of the domestic currency is greater than the inflow, causing a surplus of currency at the prevailing exchange rate. If the country is using a freely floating exchange rate system, its currency will depreciate. A depreciation of the country's currency increases the prices of imports in terms of domestic currency and leads to imported inflation. If the economy imports factors of production such as essential raw materials and intermediate goods, the average cost of production in the economy will rise, leading to a fall in SRAS from SRAS0 to SRAS1 in figure 4 as profit-maximising firms are less willing and able to produce at each GPL level.  Fig. 4 As seen in fig. 4, the economy will thus experience higher cost-push inflation as GPL rises from P0 to P1 and lower actual economic growth as real national income falls from Y0 to Y1. *[Students could also explain the case of persistently large BOT surplus. In this case, there would be an excess of demand for the domestic currency in the foreign exchange market, leading to an appreciation of the currency. This may hurt exports as they become less price-competitive in global markets, in turn adversely affect (X-M) if Marshall-Lerner condition holds. AD falls, resulting in lower actual economic growth.]*
Conclusion	In conclusion, failing to achieve the aims of full employment and favourable BOT may lead to adverse impacts on economic performance and standard of living.

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(b) Discuss whether failure to achieve these macroeconomic aims is more likely to be caused by internal or external factors. **[15]**

Question Analysis for part (b):
Command Word: • "Discuss" → Balanced answer with evaluation Key Economic Concepts: • "failure to achieve these macroeconomic aims is more likely to be caused by internal or external factors" → internal and external factors causing unemployment and BOT deficit Context: • None give → give own context where relevant
Requirement 1: Explain how unemployment and BOT deficit may be caused by external factors Requirement 2: Explain how unemployment and BOT deficit may be caused by internal factors Evaluation 1 & 2: Extent of impact Evaluative Conclusion: Make a judgement as to whether internal or external factors are the more likely cause of unemployment and BOT deficit

Requirement	**Suggested answer**
Introduction: - define key terms - give overview	Unemployment and balance of trade deficit are interconnected issues that may be caused by both internal and external factors. Internal factors are those originating within a country's own economic system. These include structural changes within the economy. External factors are influences that originate outside a country and affect its economy. These include global economic conditions and changes in comparative advantage. This essay will explore how these internal and external factors contribute to unemployment and balance of trade deficit.
Requirement 1: Explain how unemployment and BOT deficit may be caused by external factors	An external factor that could cause unemployment and BOT deficit is a recession in the economies of major trading partners. During global economic downturns, such as the 2008 financial crisis or the COVID-19 pandemic, national income and hence purchasing power fell worldwide. This would lead to a fall in the demand for goods and services. For economies like Singapore which is heavily reliant on exports, this drastic drop in external demand can lead to reduced export revenues, resulting in a large trade deficit assuming import expenditure was equal to export revenue initially. The fall in (X – M) leads to a fall in AD, resulting in a more than proportionate fall in real national income via the reverse multiplier effect as seen in fig. 3 in part (a). Actual economic growth falls and demand-deficient unemployment results as firms cut back on production and the derived demand for labour falls and firms lay off workers. Another external factor that could have led to unemployment and a BOT deficit could be the loss of comparative advantage due to other countries

	gaining competitiveness. A country has a comparative advantage over another in the production of a good if it can produce it at a lower opportunity cost, i.e. if it has to forgo less of other goods in order to produce it. Comparative advantage is dynamic. Countries can acquire comparative advantage in some goods if they were to invest sufficiently in physical capital, human capital and technology. Comparative advantage can also be acquired by allowing or promoting targeted inflows of foreign direct investments (FDI) and foreign labour. For example, China government's policy of providing subsidies for its EV manufacturers, innovation as well as proximity to the raw materials for batteries and the development of a domestic EV supply chain lowers the marginal cost of production for Chinese producers. This has led to countries such as the US losing their CA in car manufacturing. Chinese producers would then be willing to accept lower prices for their goods including those for exports; this lowers the price of imports from China into the US, leading to a rise in quantity demanded of Chinese goods as Americans switch away from the domestically produced substitutes to consume the relatively cheaper Chinese imports. Assuming that the Americans' demand for Chinese imports is price elastic given the many substitutes available, there will be a more than proportionate rise in quantity demanded of imports, leading to a substantial increase in import expenditure. At the same time, US exports within the same category would now be relatively less price competitive. EV exports from the USA, for example, would become relatively more expensive and the demand for US exports will fall. Export revenue will thus fall. Assuming that the initial export value equals import expenditure, this policy by the Chinese government will cause the USA to suffer a large trade deficit and hence AD falls leading to demand-deficient unemployment. *[Other possible external factors include appreciation of the exchange rate and protectionism]*
Evaluation 1: Extent of impact of external causes	Small and open economies like Singapore are particularly vulnerable to external shocks due to their reliance on external demand which makes up about 70% of GDP. These economies often experience pronounced effects from global economic fluctuations, trade policies, and geopolitical events. On the other hand, China's external demand is only 37% of GDP and its large domestic market provides a cushion against external demand shocks. Domestic consumption can help sustain economic activities even when global demand falters.
Requirement 2: Explain how unemployment and BOT deficit may be caused by internal factors	Loss in comparative advantage over time could also stem from internal factors, resulting in cyclical and structural unemployment and BOT deficit. For example, changes in factor endowment like the depletion of natural resources such as oil for some of the Middle East oil-exporting countries like Bahrain means that it can no longer produce crude oil as efficiently or cost-effectively as before. This leads to a decline in exports of crude oil, reducing export revenue of Bahrain. Assuming import expenditure remains the same, trade balance may result, especially if the country relies heavily on a major export. The fall in net exports will reduce AD and lead to a multiplied fall in real national income. Industries dependent on the depleted resource may shrink, leading to job losses and higher demand-deficient unemployment.

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	Structural unemployment may occur as the economy diversifies and undergoes structural changes. These changes result in certain industries and skills becoming obsolete while at the same time create demand for emerging industries and skills. Structural unemployment therefore arises due to a mismatch between the skills of the unemployed and those skills required by producers. For example, the oil miners may lack the skills to take on jobs in expanding sectors like the FINTECH industry and structural unemployment results. *[Other possible internal factors include cost-push inflation e.g. rising wages without corresponding increase in labour productivity]*
Evaluation 2: Extent of impact of internal causes	Many oil-dependent countries struggle to diversify their economies. Heavy reliance on oil can stifle the development of other sectors, making it difficult to build a more balanced and resilient economy. Most of the resources might be channelled to oil production and hence not much resources would be available for the development of other industries. For such countries, the macroeconomic problems tend to be likely caused by internal factors.
Evaluative Conclusion:	In conclusion, the failure to achieve the aims of full employment and favourable BOT may occur due to both internal and external factors. Whether the problems are more likely to be caused by external factors or internal factors will depend on the nature of the economy. Macro problems in the small and open economies are more likely caused by external factors while large economies, which may not be that agile due to structural rigidities and inflexible workforce, tend to be more affected by internal factors. Nonetheless, it should noted that the use of government policies like diversification, innovation and research, fiscal prudence and human capital investment can build economic resilience and make the economy less vulnerable to both internal and external shocks.

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5 Singapore's standing as a trusted hub for business and a critical global supply chain node has helped to attract a record $22.5 billion in foreign direct investments (FDI) driven by the electronics sector.

(a) Using the circular flow of income model, explain how investments lead to a multiplied increase in national income. [10]

(b) Discuss the extent to which such FDI inflows would be beneficial to Singapore's standard of living. [15]

Question Analysis for part (a):

Command Word:
- "Explain" → Make clear the cause and effect relationships→ define, illustrate & elaborate with examples and economic concepts

Key Economic Concepts:
- "circular flow of income"→ injections and withdrawals approach
- "how investments lead to a multiplied increase in national income" -> multiplier process

Context:
- None give → give own context where relevant

Requirement 1: Explain how the circular flow of income determine equilibrium level of national income
Requirement 2: Explain how investments lead to a multiplied increase in national income via the multiplier process

Requirement	Suggested answer
Introduction: - define key terms - give overview	The circular flow of income is a representation of how money is circulated in an economy as income and expenditure and it involves all 4 sectors of the economy, namely, households, firms, government and the foreigners.
Requirement 1: Explain how the circular flow of income determine equilibrium level of national income	In the factor market, firms purchase factors of production from households to produce goods and services. Subsequently, households will purchase the goods and services produced by firms in the goods market. As such, with reference to the figure below, the money received by these firms from selling their goods and services will in turn be paid to the households as factor payments in the form of wages, rent, interest and profit. In turn, with the income households will pay for consumption expenditure to firms when they consume goods and services produced by them. The rest of the income of households will be given to the financial intermediaries/banks, the government and the foreign sector.

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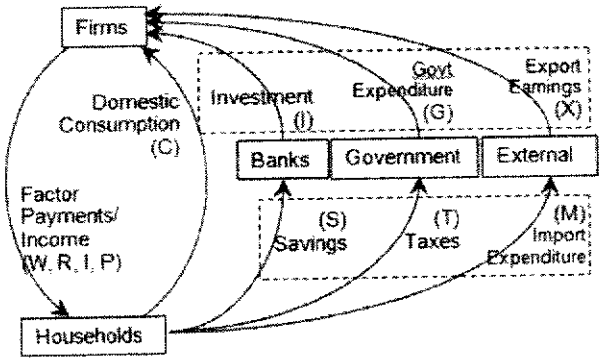
<td> 

Fig. 1
As seen from the diagram above, savings, taxes and import expenditure are known as withdrawals from the circular flow of income because they are not spent on goods and services produced by domestic producers. At the same time, there are also injections into the circular flow when money is injected through investments, government expenditure and export earnings.

The equilibrium level of national income is achieved when withdrawals are equal to injections.</td>
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<td>Requirement 2:
Explain how investments lead to a multiplied increase in national income via the multiplier process</td>
<td>Investment is a component of aggregate demand (AD) that refers to the spending by firms on capital goods such as machinery and factories. Since firms borrow money from banks to purchase capital goods from other firms, money is injected into the circular flow of income.

When investment expenditure increases, the economy will be in a state of disequilibrium. This will trigger a process that will bring the national income back to a state of equilibrium where injections are equal to withdrawals once again.

Consider the situation where the economy is at an initial state of equilibrium and the firm decides to increase its expenditure on goods and services. This is reflected by an increase in investment expenditure (I) by $100m and results in injections exceeding withdrawals. The economy will expand, i.e. the economy's GDP will rise.

When the injections are greater than withdrawals, this means that the total expenditure on goods and services is greater than the current output produced. Firms will then face depletion of their stocks by $100m. As such, firms will be encouraged to produce more output and employ more factors of production. They, in return, will pay out more wages, salaries, profits, rent and interest to households. Thus national income will rise by $100m with a corresponding increase in national output and employment of resources.

The rise in national income by $100m will trigger another round of spending as when households receive the additional factor payments, they will spend more on domestic goods and services. In this case, let us assume that the</td>
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	marginal propensity to consume (MPCd) is 0.6, which means that household will spend \$60m (0.6 x \$100m) on domestic goods and services while the remaining income is leaked out (ie. \$40m is withdrawn from the flow) as household will save some of this rise in income, make tax payments to the government and spend on imported goods from the foreign sector. This additional household spending of \$60m will cause another round of depletion of stocks which will boost the income of another group of households as firms once again expand output by hiring more factors of production to meet the rise in demand. This will lead to further rise in household spending by \$36m (0.6 x \$60 as MPCd=0.6) while \$24m is leaked away in the form of savings, tax payments and spending on imported goods. Therefore, each time there is spending by households, additional income is generated with the magnitude of each change in spending and income getting smaller due to withdrawals at the same time. This will continue until the total rise in withdrawal (W) equals to the initial rise in injection (J) (in this case, investment expenditure of \$100m). At this point, the national income will stop rising, and so will withdrawals. Equilibrium is reached when withdrawals equals to injections. An increase in injection into the circular flow (due to an increase in investment expenditure) has resulted in many subsequent rounds of increase in national income until the total withdrawals rise to the new level of injections in the economy. This illustrates the multiplied effect that any change in the economy (J or W) may have on the national income (or output) of the economy. This is called the multiplier process whereby a change in injections causes a multiplied change in the national income. The multiplier (k) measures the number of times that the change in income (ΔY) is greater than the initial injections (ΔJ). The value of multiplier is given by one divided by the marginal propensity to withdraw (MPW). In this case, MPW equals to 0.4 (i.e. 1 – MPCd = 1 – 0.6). Hence, the multiplier value is 2.5. Therefore, the increase in national income is \$250m which is greater than the initial increase of \$100m.
Conclusion	In conclusion, an initial increase in investment expenditure of \$100m will eventually lead to an increase in equilibrium level of national income that is greater than \$100m. The total rise in national income depends on the value of the multiplier (k). The larger is the value of the multiplier, the larger is the rise in national income.

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(b) Discuss the extent to which such FDI inflows would be beneficial to Singapore's standard of living. **[15]**

Question Analysis for part (b):
Command Word: • "Discuss" → Balanced answer with evaluation Key Economic Concepts: • "extent to which such FDI inflows would be beneficial to Singapore's SOL" → positive and negative impacts on material and non-material SOL Context: • Singapore economy
Requirement 1: Explain positive impact of FDI inflows on Singapore's material SOL Requirement 2: Explain positive impact of FDI inflows on Singapore's non-material SOL Evaluation 1 & 2: Explain possible negative impacts on material and non-material SOL Evaluative Conclusion: Make a judgement as to the extent to which FDI inflow is beneficial to Singapore's SOL

Requirement	**Suggested answer**
Introduction: - define key terms - give overview	Standard of living (SOL) refers to the well-being of an average person in a country. It includes material (quantitative) and non-material (qualitative) well-being. FDI usually involves the setting up of factories overseas by multinational corporations (MNCs). FDI is an important component of AD for Singapore. It leads to sustained growth, creation of jobs and transfer of technological knowledge. FDI is hence likely to improve the living standards of the citizens in terms of material and non-material SOL.
Requirement 1: Explain the positive impact of FDI inflows on Singapore's material SOL	FDI inflows would be beneficial to Singapore's material standard of living as it leads to actual and potential economic growth. The material SOL refers to the quantity of final goods and services available to an average person in the country. FDI inflow increases aggregate demand (AD) as it contributes to the investment component of AD. Assuming that the economy is initially producing with spare capacity at Y0, an increase in FDI will lead to multiplied increase in real national income via the multiplier process, as explained in (a). Referring to fig. 2, the increase in FDI leads to the initial rise in AD and the subsequent induced consumptions arising from increased labour demand and wages (via the multiplier effect) leads to an eventual rise in AD from AD0 to AD1 leading to a rise in RNY from Y0 to Yf0 and GPL from P0 to P1. Higher actual economic growth and lower unemployment level is achieved in the short run.

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	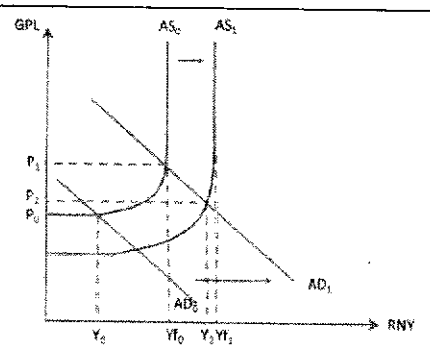 Fig. 2 Assuming Singapore's population increased more slowly than the increase in its real GDP, real GDP per capita would have increased. This implies that average incomes in Singapore has increased, causing average purchasing power to increase. This would mean that the Singapore residents would increase their consumption of goods and services, improving their material SOL. In addition, FDI inflow also contributes to capital accumulation (increases stock of capital) as foreign MNCs build up their production facilities and allows knowledge and technological transfer to take place. This increase in quantity and quality of an economy's resources increases the productive capacity of the economy as well as the productivity which reduces the unit cost of production. These supply-side effects would translate into a rightward shift of the LRAS and a downward shift of the SRAS respectively seen in Fig. 2 as an increase in AS from AS0 to AS1. The increase in LRAS generate potential growth from Yf0 to Yf1 and dampen possible inflationary pressures, bringing about sustained economic growth as national income increases further to Y2 and the general price level falls to P2. Hence FDI inflow also brings about higher material SOL in the long run. Furthermore, FDI may create better-paid jobs that require higher skills. That could elevate the skills level of the labour force in Singapore. As domestic workers gain more skills, their wages improves which increases their ability to purchase goods & services, improves material SOL
Evaluation 1: Explain possible negative impacts on material SOL	However, it must be noted that if the economy is close to full employment, the rise in AD will cause firms to bid higher prices for the factors of production, they will pass on the higher unit cost of production to the consumers as higher prices leading to demand-pull inflation. As the general price level rises, the real value of money will fall. Inflation will hit hard fixed salaried workers and pensioners as their income does not rise but with prices increasing, their real incomes would fall and the material SOL will fall. Furthermore, if the FDI inflow leads to more employment but such jobs go to foreign workers, the extent of the increase in material SOL of the Singapore citizens may not be as high as they do not enjoy the greater employment opportunities. If such big investments utilise technology that replaces workers, inordinately creating unemployment, material SOL may not rise.

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	Also, foreign firms are more likely to relocate and exit the country if the investment climate in Singapore deteriorates. As a result, Singapore will risk having massive layoffs, resulting in high unemployment if FDI that came in were to leave the country easily. High unemployment means unemployed workers will have no income and this will affect their purchasing power. Thus there could be negative impact on the material SOL.
Requirement 2: Explain positive impact of FDI inflows on Singapore's non-material SOL	The non-material aspect of SOL refers to the intangibles that affect welfare such as the quality of the environment, the level of stress, etc. With FDI stimulating economic growth, households' income and firms' profits would rise and government can collect more tax revenues in the form of both direct and indirect taxes. If the government uses the higher tax revenues in the areas of education, healthcare and infrastructure development, it can result in an improvement in non-material SOL as literacy rates and life expectancy increases. Another consideration of the extent of impact on non-material SOL is the extent such FDI enriches the welfare of all citizens or only certain groups like the foreign talents. If all are better off, non-material well-being of the country can also be increased as people's sense of job security and stable income is enhanced. The Gini coefficient which measures income inequality within a population can be used to provide insights into the impact on non-material SOL. High income equality, as indicated by a low Gini coefficient, can mean less social unrest and more social cohesion. This can be beneficial to the quality of life, as people may feel more secure and less divided. Greater income equality also often translates to more equal access to essential services such as education, healthcare, and housing. A lower Gini coefficient can indicate that a significant portion of the population is able to access to these services, resulting in higher life expectancy, and lower infant mortality rates, improving the non-material standard of living.
Evaluation 2: Explain possible negative impacts on non-material SOL	With higher FDI in Singapore, there will be more goods and services produced in the country for the domestic economy as well as for export markets. Hence, Singapore may experience a rise in the air, water and noise pollution. Air and water pollution generate higher negative externalities for the country. This will in turn affect the health of the citizens who will and incur higher medical cost. As a result, the non-material well-being of the citizens is negatively affected.
Conclusion	In conclusion, as seen in the past decades, such FDI inflows have been the key driver behind Singapore's economic success. Singapore has become a first-world economy and the general population has become richer and better educated. So in terms of material and non-material SOL, it can be seen that such FDI inflow is beneficial to Singapore's standard of living. However, it must be noted that it is not such FDI inflow alone is not sufficient to guarantee that the SOL improves. The ability to manage and ensure that economic growth does not come with inflation, employment is keeping pace with technological progress and there is adequate government spending on

	public and merit goods is also crucial in ensuring that SOL will improve with such FDI inflow. It is also important for Singapore to create an environment that fosters the transfer of FDI benefits into the domestic economy. Appropriate policies like policies to deal with pollution, policies to de-conflict domestic interest, must be implemented to regulate and attract the right type of investment that can create jobs for the domestic workers and help to generate sustained economic growth. Hence, Singapore would be able to embrace the full benefits of FDI inflow if the government is able to mitigate the negative impacts of FDI inflow as much as possible.

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6 While Singapore has an extensive network of 27 implemented agreements with bilateral and regional free trade agreements (FTAs), the future of Singapore's economy will also depend heavily on its ability to use science, technology and innovation.

(a) Explain the benefits of international trade to consumers and producers. [10]

(b) Discuss whether the signing of FTAs is the best way to ensure that Singapore continues to benefit from international trade. [15]

Question Analysis for part (a): Command Word: • "Explain" → Make clear the cause and effect relationships→ define, illustrate & elaborate with examples and economic concepts Key Economic Concepts: • "benefits of international trade to consumers and producers"→ positive impact of trade on consumer welfare and producers' profits Context: • None give → give own context where relevant
Requirement 1: Explain the benefits of international trade to consumers Requirement 2: Explain the benefits of international trade to producers

Requirement	Suggested answer
Introduction: - define key terms - give overview	International trade refers to the exchange of goods and services between countries. To explain the benefits of international trade, we assume that there is free trade between countries without any artificial restrictions.
Requirement 1: Explain the benefits of international trade to consumers	Free trade can lead to an improvement in consumer welfare in terms of higher consumption possibilities. With free trade, countries need not be self-sufficient. They can afford to specialise in exporting goods in which they are able to produce at lower opportunity costs and import goods in which they do not have a comparative advantage. According to the theory of comparative advantage, when countries specialise in producing the goods in which they have a comparative advantage in (i.e., lower opportunity cost incurred in producing them) and trade, all countries can mutually benefit. Gains from specialisation and trade allow an increase in global efficiency which can lead to an increase in world production and hence, world consumption. This will in turn enable individual countries to consume beyond their PPC and enjoy higher material welfare. For example, due to the abundance of skilled labour and high-tech capital in Singapore, Singapore has a comparative advantage in producing computer chips compared to China. On the other hand, due to its large pool of unskilled

and semi-skilled labour, China has a comparative advantage in producing labour-intensive goods like shirts. Referring to Figure 3, the different comparative advantages can be seen from Singapore's PPC (PPCSG) having a steeper slope than China's (PPCChina) as Singapore needs to give up fewer shirts per unit of computer chips produced while China needs to give up fewer computer chips per shirt produced.

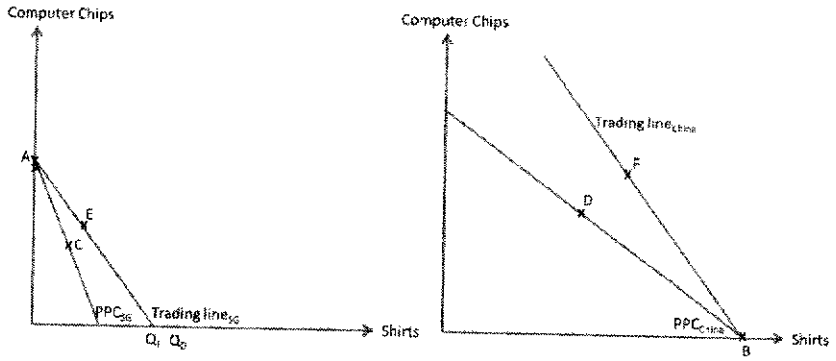

Fig. 1: after Specialisation and Trade

As such, Singapore would specialise in producing computer chips by directing all its resources into producing computer chips. It would produce at point A on its PPC while China would specialise in producing shirts by producing on point B of its PPC. Singapore would then export computer chips to China and import shirts from China. For China, it would be the opposite. The terms of trade would have to be beneficial for both Singapore and China. Each computer chip Singapore exports should allow it to import more shirts than if it were to produce shirts itself. The same applies to China. As such, the trading line would be gentler than Singapore's PPC while being steeper than China's PPC.

Both countries mutually benefit as both countries can now consume on the trading line (or CPC) which lies outside the original PPC. Without specialisation and trade, Singapore would have to consume along its PPC such as on point C. With specialisation and trade, Singapore can consume on point E. China also benefits by being able to consume on point F instead of point D.

Even if two countries have the same factor endowments and the same levels of factor productivity, consumers can still gain in terms of lower prices. If the consumption pattern is different, then the prices of the same goods will be different in the two countries. Ceteris paribus, the price of the good will be lower in the country with a lower demand for the good, but higher in the country with the higher demand for the good. Trade would benefit the consumers in the trading countries as they are able to obtain the goods that they want at lower prices.

International trade provides greater variety of goods and services choices for consumers as they are able to purchase goods and services which their own

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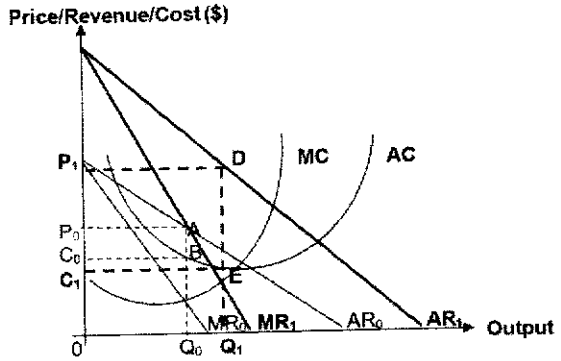
	countries do not produce. This enhances consumer welfare. E.g. Singapore can enjoy French wine and apples from China and Australia.
Requirement 2: Explain the benefits of international trade to producers	Trade benefit firms in terms of higher profits. With trade, firms now have increased access to export markets which increases the consumer base and hence demand for their products. Trade also means that firms can now tap into markets which are expanding quickly from economic growth, leading to an increase in demand for their products (assuming YED is positive), increasing total revenue and hence profits. By expanding the exports markets, demand for firms' products will increase, leading to an increase in AR from AR0 to AR1, as shown in fig. 2. This will lead to an increase in price from P0 to P1, an increase in quantity from Q0 to Q1, and an increase in profits for producers from P0ABC0 to P1DEC1.  Fig. 2 Furthermore, firms can reduce cost of production through trade. As a country specialises in the production of a particular good and produces for the large world market, the increase in the scale of production enables the firms in the country to enjoy economies of scale and reduce their average cost of production. For example, as scale of production increases, firms can buy factor inputs in bulk. It is cheaper to buy factor inputs in bulk and so average cost of production decreases. As such, trade benefits countries by allowing firms within the countries to expand their production and reap internal economies of scale and lower their average cost. This could be not achieved without trading since the domestic market may be too small for efficient production. Singapore is a classic case as it has a small domestic market but, through exports, its firms can reap internal economies of scale and sufficiently lower costs and sell their products abroad at competitive prices. Free trade also allows firms to source for cheaper foreign inputs, leading to a fall in unit cost of production. Firms are able to engage in outsourcing / off-shoring, whereby parts of their production processes are conducted in other countries where it can be done cheaper thus lowering their unit costs of production. As shown in fig. 3, this will lead to a fall in MC from MC0 to MC1 and AC from AC0 to AC1. There will be a fall in price from P0 to P1, an

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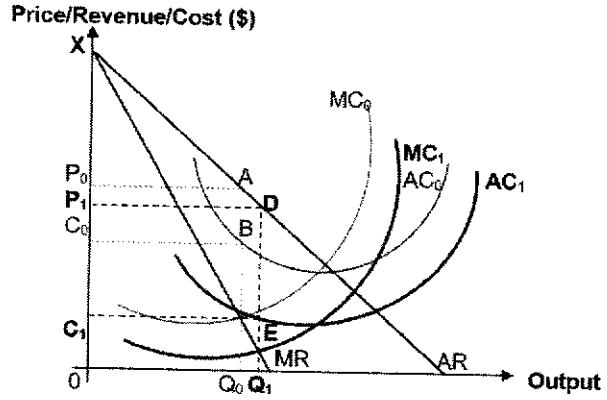
	increase in quantity from Q0 to Q1, and an increase in profits for producers from P0ABC0 to P1DEC1.  Fig. 3
Conclusion	Hence, international trade can lead to an improvement in consumer welfare and producer profits.

(b) Discuss whether the signing of FTAs is the best way to ensure that Singapore continues to benefit from international trade. **[15]**

Question Analysis for part (b):

Command Word:
- "Discuss" → Balanced answer with evaluation

Key Economic Concepts:
- "whether the signing of FTAs is the best way to ensure that Singapore continues to benefit from international trade" → FTAs and another policy which is supply-side policy as mentioned in preamble (Singapore economy depends heavily on its ability to use science, technology and innovation)

Context:
- Singapore economy

Requirement 1: Explain how the signing of FTAs ensures that Singapore continues to benefit from international trade
Requirement 2: Explain how supply-side policy like R&D ensures that Singapore continues to benefit from international trade
Evaluation 1 & 2: Explain limitations of each policy
Evaluative Conclusion: Make a judgement as to which policy is the best in ensuring that Singapore continues to benefit from international trade

Requirement	Suggested answer

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Introduction: - State characteristics of Singapore economy - give overview	Singapore is a small and open economy with no natural resources and is known to commit to free trade as trade has inevitably become the main engine of growth for the country. Singapore can take several strategic measures to ensure its competitiveness of its exports, in both price and non-price aspects even in the face of protectionism. Singapore's active participation in FTAs is crucial for improving her export competitiveness in order to maintain economic growth. Singapore should also explore other measures such as supply-side policies to have a more lasting impact on her competitiveness to achieve economic growth.
Requirement 1: Explain how the signing of FTAs ensures that Singapore continues to benefit from international trade	A free trade agreement (FTA) is a legally binding agreement between 2 or more countries to reduce or eliminate barriers to trade and investment. FTA would enlarge and secure the necessary markets for Singapore to make up for its lack of a large domestic market. Not surprising, Singapore is a participant to a number of free trade agreements with the different countries. These FTAs are vital in ensuring easier entry into export markets and business stability. FTA would result in greater trade as well as greater investment flows. FTAs allow for freer flow of goods by giving economies involved in the agreement preferred access to each other's markets due to reduction in trade barriers. This will lead to greater price competitiveness of exports as price of Singapore exports to its export markets are relatively lower, increasing in the quantity demanded more than proportionately as demand is price elastic and therefore increase export revenue. The increased accessibility to other economies via FTA will also attract more FDI as the lower trade barriers will mean higher revenue for the exporting firms. Therefore this helps to Singapore to maintain its competitiveness attracting FDI. Assuming that X>M and FDI inflows > FDI outflows, AD will increase since (X-M) and I are both components of AD. AD curve rightwards from AD0 to AD1. Assuming spare capacity, the increase in C and (X-M) will trigger the multiplier effect and lead to multiple rounds of increases in income-induced consumption, causing a larger increase in AD from AD2 to AD3.and real GDP will increase by a multiple amount.

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	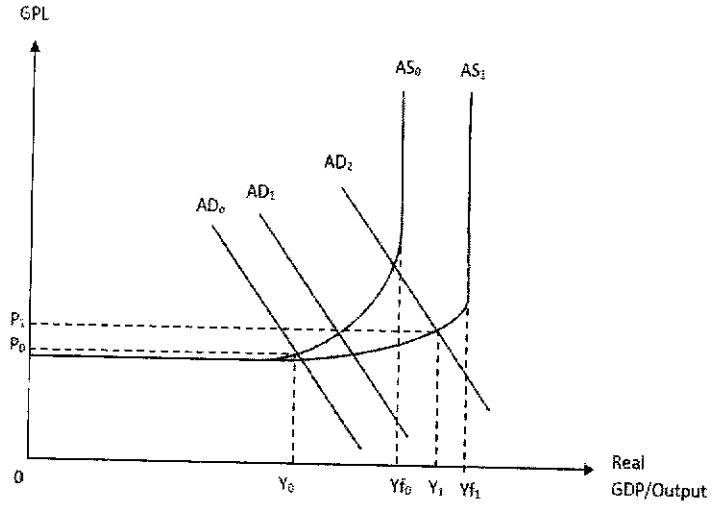 Fig. 4 As seen in fig. 4, real output increases by a multiplied amount from Y0 to Y1 leading to actual economic growth. In addition, the increase in I would increase the quantity of capital goods in the economy. Increasing FDI would also possibly enable the country to gain access to foreign production methods, allowing for technological transfers. This would lead to an increase in productivity. As such, the increase in quantity of capital goods and productivity should lead to an increase in LRAS and LRAS shift rightwards from AS0 to AS1, achieving potential growth. Since AD and AS increase in tandem, there is sustained growth. Signing of FTAs will also result in prices of imported inputs and hence unit cost of production falling, leading to an increase in SRAS (draw AD/AS diagram). Real GDP will increase while GPL will fall.
Evaluation 1: Explain limitations of signing of FTAs	However, with the signing of FTAs with other countries, it would also open up the Singapore's economy and subject the domestic firms to greater foreign competition. If the domestic firms are not competitive, it may drive out domestic firms, increasing the country's reliance on foreign firms for its economic growth. Also, M might increase more than X, i.e. M>X, and FDI outflows might be more than FDI inflows, leading to fall in AD instead. Hence, there might be slower economic growth and higher demand-deficient unemployment. As such, to complement the signing of FTA, it is necessary that the government also adopt policies (such as supply side policies) to increase the productivity and ensure that goods and services exported from Singapore stay relevant to cater to the changing taste and preferences of the foreign market, thus ensuring competitiveness of domestic firms.
Requirement 2: Explain how supply-side policy like R&D	As stated by the theory of comparative advantage, each country should specialize in the production of goods and services in which it has a comparative advantage and consequently to enable a greater production and consumption of goods and services via trade.

ensures that Singapore continues to benefit from international trade	But comparative advantage is a dynamic and revolving concept. With the opening up of countries such as China and Vietnam for trade, Singapore has lost its comparative advantage in the production of low value products to these countries. As such, Singapore needs to continually develop new comparative advantage in order to benefit from trade and one way to achieve this is via the adoption of supply side policies. By engaging in more research and development (R&D), the quality of capital can be improved, enabling it to be more productive. R&D can also lead firms to develop more efficient methods of production through the adoption of new technology, e.g. with more automation that cuts down on the use of labour and therefore wage costs. This lowers firms' unit cost of production enabling the price of exports to be lower and increase quantity demanded of Singapore's exports more than proportionately as PEDx > 1. This will increase export revenue and improves the BOT position, leading to an increase in AD and hence real national income via the multiplier process. Furthermore, the development of new or better quality products through R&D can also help Singapore firms to meet the changing taste and preferences of the international market which then increases the demand for Singapore's exports and make the demand more price inelastic. This makes it possible for firms to charge higher prices and earn higher revenue, leading to faster rate of economic growth. Hence, promotion of R&D helps Singapore to improve on its export price and non-price competitiveness.
Evaluation 2: Explain limitations of R&D	However, innovation involves huge costs and there is no guarantee of success. Proper incentives have to be in place for more R&D to take place. Technology without the proper intellectual property rights in place is largely non-excludable as a firm's rivals cannot be prevented from copying and using the technology and innovation that it has developed if left to the free market. Hence, Singapore government needs to establish and enforce strong patent laws. In addition, as the external benefits derived from R&D is not taken into account by firms, there is a need for the Singapore government to provide more incentives to firms to increase the level of R&D by giving more grants and subsidies. R&D requires not only fiscal incentives but also the development of physical infrastructure and human capital. Singapore government has built technology parks (e.g. Science Park) so that the synergies derived from the proximity between various R&D personnel from different firms and institutions can be reaped. But developing local researchers as well as policies to develop the right type of labour to work with the new technologies, particularly those in the newly emerging technology-based industries, are just as crucial.

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Conclusion	In conclusion, the signing of FTAs is the best measure for Singapore to continue to benefit from international trade because of global economic situation and the nature of the economy. In an era of rising protectionism, Singapore should prioritize signing more free trade agreements (FTAs) to enhance its competitiveness. While protectionist policies can disrupt global trade, FTAs counteract this trend by promoting open markets among participating nations. Additionally, the diversification offered by bilateral and regional trade agreements can help mitigate the negative impacts of global protectionism. FTAs deliver numerous economic benefits, making Singapore an attractive destination for foreign investors, which in turn brings in new technology and knowledge. Given its status as a small and open economy with limited domestic resources, Singapore must embrace globalization; thus, expanding its network of FTAs is crucial for accessing broader export markets. However, being small makes Singapore susceptible to changes in her trading partners' economic situations and instead of depending on FTAs to create jobs, Singapore would also need to depend on supply-side policies to sustain her economic growth. In the long run, product and process innovation are the best measures for Singapore to improve the quality and reduce the prices of her exports respectively to ensure sustained competitiveness so that she can continue to benefit from international trade.