JC2 2017 Prelim Examination

H2 Economics (9757)

Suggested Answers

(Essays)

Meridian Junior College
H2 Economics 9757 Prelim (Essays)

Essay 1

While mass produced chocolate from manufacturers such as Hershey's and Mars can contain as little as 10% cocoa, artisan craft chocolate from small scale makers can contain more than 70% cocoa. The increase in price of cocoa, a key ingredient in chocolate, has forced all chocolate producers to either increase its price or shrink its packaging.

a)   Explain the factors affecting the price elasticity and cross elasticity of demand for chocolate. (10)

b)   Discuss the factors that determine the significance of rising cocoa prices on the change in prices for different types of chocolate. (15)

Part (a)

Intro:
- Price elasticity of demand (PED) for chocolate refers to the degree of responsiveness of quantity demanded of chocolate given a change in price, ceteris paribus.
- Cross elasticity of demand (XED) of chocolate with respect to the price of another good measures the degree of responsiveness of demand of chocolates to a change in the price of the other good, ceteris paribus.
- Various factors affect the PED and XED of chocolate drinks which in turn affects the equilibrium price and quantity of chocolate drinks.
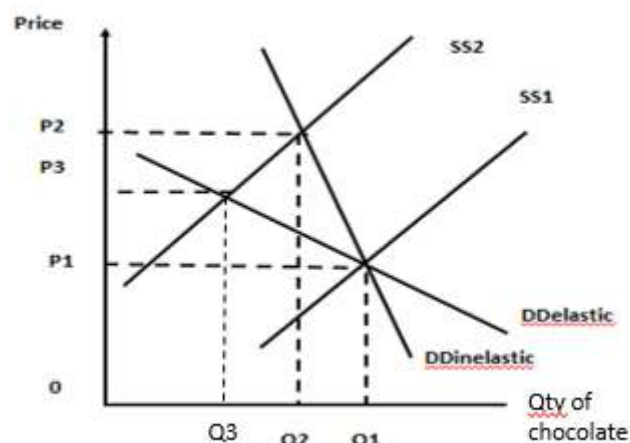
Devt 1: Explain concept of PED + Factors
- **Formula**: % change in quantity demanded / % change in price of the good.
- **Sign**: Negative- due to inverse relationship between price and qty dd, as stated by Law of Demand
- **Magnitude**:
  - ○ PED>1: Demand for good is price elastic→ a given increase in price of good leads to a more than proportionate increase in qty dd
  - ○ PED<1: Demand for good is price inelastic → a given increase in price of good leads to a less than proportionate increase in qty dd.
- Useful in explaining the extent of changes in price and qty due to shifts in supply.

Factors affecting PED of chocolate include:
- **Availability and closeness of substitutes to chocolate :**
  - ○ The greater the availability of substitutes and the closer the substitutes for chocolates, the greater will be its PED.
  - ○ Demand for chocolate drinks is likely to be price elastic (PED>1) due to the availability of other close substitutes that satisfy the same needs e.g. candies, toffees and other sweets
  - ○ An increase in price of chocolate will result in a more than proportionate fall in qty dd for chocolate as consumers can switch to other available substitutes easily.
  - ○ EV: Demand for artisan craft chocolate could relative more price inelastic as some consumers may find the taste of such chocolate to be a cut above the mass produced chocolates and cannot be easily substituted. As such, an increase in price will only prompt a small number of consumers to turn to other available substitutes and result in a less than proportionate fall in quantity demanded.
- **Proportion of income spent on Chocolate :**
  - ○ The smaller the proportion of income spent of chocolate relative to other junk food, the greater its PED. For example, mass produced chocolate which can contain as little as 10% cocoa is likely to take up a small proportion of one's income compared to other types of food

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- o Reason: Increases in price of mass produced chocolate, should it take up a small proportion of consumers' income, can be easily ignored without sacrificing other alternative goods that could be purchased for satisfying needs and wants.
- o Therefore, an increase in price of mass produced chocolates is not likely to induce consumers to sacrifice such junk food for other types of junk food, resulting in a less than proportionate fall in the qty dd for chocolate, making its demand price inelastic
- o **EV**: Mass-produced chocolate is mostly consumed by students whose taste and preference for junk food is probably much higher than compared to consumers from other age-groups. As students generally do not earn a steady stream of income, relying most on their parents' pocket money for their day to day expenses, expenditure on mass-produced chocolates may take up a relatively large proportion of their limited budget. Hence the demand for mass-produced chocolates will be relatively price elastic.
- o **EV**: proportion of income spent on artisan craft chocolate is much larger. As such, an increase in price of artisan mass produced is likely to change the consumption habits of consumers, resulting in a more than proportional fall in qty dded for chocolates. Hence making the demand for artisan craft chocolate price elastic.

- • **Degree of necessity**
  Chocolates may be viewed as a luxury good as it is non-essential, especially for artisan craft chocolates. A higher price for chocolates may cause a significant number of people to forgo consumption of chocolates and opt instead to consume other types of junk food. Hence its demand is likely to be relatively price elastic.

- • **Ranking of factors:** (Weighing the factors that could influence the PED for chocolate) Demand for chocolate is likely to be relatively more price elastic due to the huge availability of substitutes and the relatively large proportion of income that students spent on chocolate. Artisan craft chocolate caters to a very niche and specific group of consumers who are not likely to make up a huge proportion of the overall market for chocolates.
- • Hence, given an increase in price from P1 to P3 due to a fall in supply, qty dd decreases less than proportionately from Q1 to Q3. (Fig 1)

Figure 1

Devt 2: Explain concept of XED + Factors
Formula: = $\dfrac{\%\triangle \text{ in demand of a good A}}{\%\triangle \text{ in the price of good B}}$

- • **Sign**:
  - o Positive: substitutes
  - o Negative: complements

- **Magnitude**:
  - The magnitude of the value of the cross elasticity of demand indicates the extent of the relationship.
  - If the magnitude of the cross elasticity of demand is a small positive value, the two goods are described as very weak substitutes such as Chocolates and toffees.
  - On the other hand, if the magnitude of cross elasticity of demand is a small negative value, the two goods are described as very weak complements e.g. chocolates and ice-cream.

Factors affecting XED of chocolate include:
- **Closeness of substitute or complement**. The smaller it is, the smaller will be the effect on the quantity for chocolate of a change in the price of substitute or complement, and hence the smaller the cross elasticity – either positive or negative. While the nature of the relationship between 2 goods determines the sign of the value of XED, the closeness of that relationship determines the magnitude of the XED.
  - Substitutes: The XED of chocolates will depend to some extent on the taste and preference of the consumer. For consumers who patronise largely the mass produced chocolates, the XED of chocolates is likely to be positive and large. Such consumers can easily satisfy their needs and wants with other substitutes such as candies and toffees. Hence an increase in the price of candies is likely to turn consumers to other junk food such as chocolates, resulting in a more than proportionate change in demand for chocolates.
  - On the other hand, the XED of artisan craft chocolates is likely to be positive but small. Consumers of artisan craft chocolate may find the taste of such fine chocolate to be extremely unique and cannot be easily replaced with other types of junk food. As such, a given fall in price of a substitute such as toffees is likely to result in a less than proportionate fall in demand for chocolates.
  - Complements: There are hardly any strong complements for chocolates. Hence the XED is likely to be negative and small. For example, chocolate and ice-cream. Complements refer to goods that are jointly consumed to fulfil a similar level of utility. Although there are consumers who might consume ice-cream with hot chocolate, most consumers will be happy with ice-cream in its own, making these two goods weak complements of one another. As such, a given fall in price of ice-cream is likely to result in a less than proportionate increase in demand for chocolate.

Conclusion:
Several factors affect the PED and XED values of chocolates. However in reality, it may be difficult to determine PED and PES of chocolate because of inaccuracies in data collection due to bias or sampling error. Also, data collected prior to the event may be outdated and not reflective of current economic conditions.

Level	Knowledge, Comprehension, Analysis and Application	Marks
L3	An answer that fully addresses the requirements of the question, explaining the factors affecting PED and XED, giving equal treatment to both concepts, with the use of real-world examples.	8 - 10
L2	Mainly theoretical answers that explain the factors that determine PED and XED, with limited use of examples, OR explanations lack elaboration to reflect good comprehension of both concepts.	5 - 7

| L1 | Incomplete answers that fail to recognise the factors that may determine the price elasticity of demand or supply. Answers may reflect weak understanding of the concept by only listing the factors. | 1 - 4 |

b)   Discuss the factors that determine the significance of rising cocoa prices on the change in prices for different types of chocolate. (15)
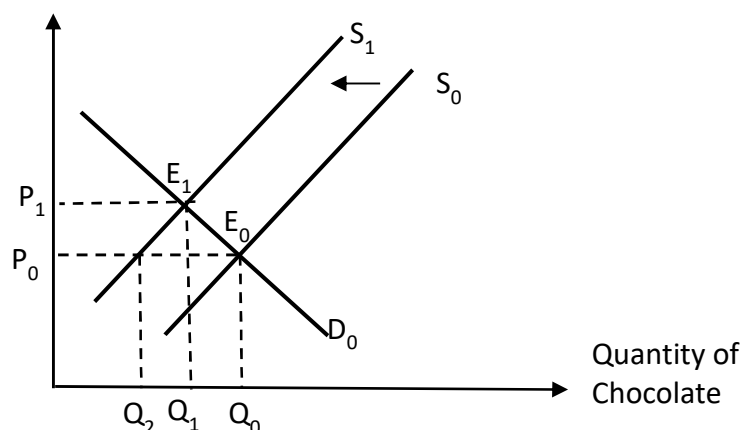
Introduction:
Cocoa is a key ingredient necessary in the production of all types of chocolates. An increase in cocoa prices will definitely increase the cost of production for all types of chocolate producers. While the price of chocolates is set to increase, the extent of increase in the price of chocolates will depend on several factors such as the percentage of cocoa content used in the manufacturing of each bar of chocolate, its price elasticity of demand and above all, the extent of the increase in the price of cocoa.

Body:
1.   Utilise MAP to explain increase in **price of chocolate as price of cocoa increase**

Price of Chocolate

Quantity of Chocolate

- o   Market is at initial equilibrium E0, with initial equilibrium price P0 and initial equilibrium quantity Q0.
- o   ↑ price of cocoa → ↑COP → leftward shift in SS curve
- o   At original price, there is a shortage of Q2Q0. This results in an upward pressure on price.
- o   As price increases, quantity demanded decreases, resulting in a movement along the demand curve.
- o   In addition, as price increases, quantity supplied increases, resulting in a movement along the supply curve.
- o   Market reaches new equilibrium E1. Equilibrium price increases from P0 to P1 and equilibrium quantity increases from Q0 to Q1.
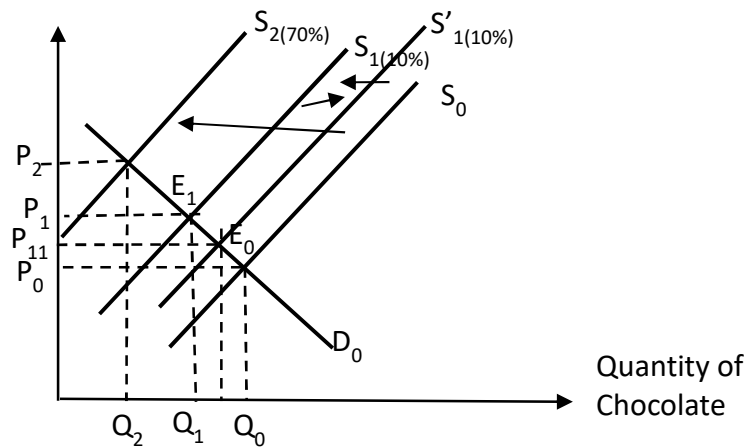
2.   **Extent of increase in price will depend on the following**
   a)   **Extent of increase in COP which depends on the cocoa content in the chocolate**
      - o   Mass produced chocolate: smaller cocoa content as little as 10%
      - o   Craft chocolate: larger cocoa content, as much as 70%
      - o   The greater the cocoa content → greater increase in COP→ sharper leftward shift in SS curve→larger shortage → greater upward pressure in price → greater increase in price of chocolate

- o Greater increase in price of artisan craft chocolate from P0 to P2, compared to mass produced chocolate from P0 to P1.
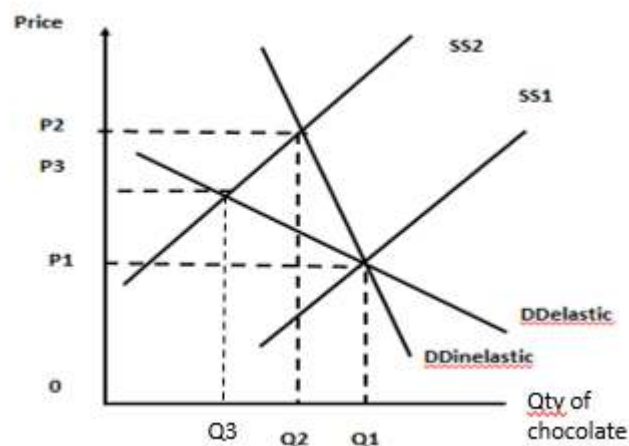
Price of Chocolate

EV: extent of price increase might be lesser if other ingredients are cheaper or if cocoa can be substituted by vegetable oil

- o Given that the demand for mass produced chocolate is likely to be highly price elastic given the available substitutes, an increase in price is likely to result in a more than proportionate fall in qty demanded for chocolate, resulting in lower revenues and profits, ceteris paribus. To prevent a sharp fall in profits, producers might decide to use vegetable oil as a substitute for cocoa. The greater the substitute, the smaller the increase in COP, the smaller the extent in leftward shift of SS curve, the smaller the increase in price of chocolate.

b) PED of chocolate

- ▪ Lower PED for artisan craft chocolate due to the lack of substitutes, as explained in part (a)→ Consumers who desire so much for artisan craft chocolates (not substitutable→ something that such consumers view as necessities and they cannot do without) must be prepared to pay a higher price when price of cocoa increases→higher increase in price
  EV: PED may start to increase as the number of substitutes increase due to more and more artisan craft chocolate makers entering the market. This is possible as chocolate makers notice the changes in

taste and preference of consumers, increasing the profitability of this market which would entice more players into the market.

- ▪ Higher PED for mass produced chocolates which are highly substitutable due to the wide availability of such chocolates found easily in the shelves of the supermarkets→high PED→ increase in price → more than proportionate fall in qty demanded → fall in revenue and profits, ceteris paribus. To avoid the loss in customers and the subsequent revenue as consumers have the easy option of switching to other alternatives, prices cannot increase significantly → smaller increase in price. (Instead, profit driven producers might choose instead to reduce its packaging to reduce the increase in COP, thereby maintaining its profit margin.)

  EV: mass chocolate producer can introduce with a new product and market it at a higher price to reflect the increase in COP—price of cocoa. Being a 'new' product', there will be relatively fewer substitutes resulting in a lower PED, enabling the producer to reflect true increase in COP through much higher prices.

c) **External factors** that determine the **extent of rise in price of cocoa**.

E.g., change in income or taste & preference from fast emerging economies→ significant ↑DD for cocoa related products → huge shortage→significant increase in price of cocoa, especially since supply for cocoa is price inelastic as it takes time for a cocoa plant to mature and bear fruits. OR poor weather conditions due to climate changes resulting in huge fall in SS of cocoa → huge shortage→ large increase in price of cocoa

- • The greater the increase in price of cocoa→ higher ↑COP → ↑prices for all types of chocolate producers
- • **EV**: Prior contractual agreements with supplier can mitigate the increase in price of cocoa in the SR and hence mitigate the extent in increase in price for the chocolate producers

o Conclusion: Ranking of factors with a reason

- ☐ The most significant factor that determines the extent of increase in price of chocolates due to an increase in price of cocoa would be the extent of the increase in price of cocoa which chocolate producers have little control over, even with the best supply management tools. Production of primary products like cocoa is very dependent on weather conditions which is very difficult to predict and above all, alter. On the other hand, high cocoa content required in the recipes of the artisan craft chocolates can be managed with continued R&D to redesign artisan chocolate that retains the original taste and texture. Similarly, while mass chocolate producers who face high PED find it difficult to pass on the increase in COP to consumers, this can be easily avoided through clever marketing techniques by introducing a new product that reflects the increase in COP.

Knowledge, Application, understanding and Analysis		
L3	For answers that shows Excellent depth and scope in analysis	8 – 10
L2	For answers that shows good depth and scope in analysis:	5 – 7
L1	For answers that shows: • Insufficient depth and scope in analysis • Descriptive analysis	1-- 4
Evaluation		
Level	*Descriptors*	*Marks*
E3	Critically evaluates the different factors that affects the extent of increase in price of cocoa	4-5
E2	Some attempt at evaluation	2-3
E1	Judgments are made, but they remain largely unsubstantiated.	1

Essay 2

Free education will help give every child the chance in life they deserve, building a stronger economy and a fairer more inclusive society.

Assess whether providing free education is the most appropriate policy to achieve an efficient and equitable allocation of an economy's scarce resources. (25)

Introduction
- Education is considered to be a **merit good** as it is deemed desirable by the government and is often under-consumed if left to the market resulting in market failure. This may prompt governments to intervene by providing education free for all.
- Whether or not education should be provided free will depend on the degree of the existence of positive externalities, the extent of the existence of imperfect information, as well as the magnitude of the concerns regarding equity issues.
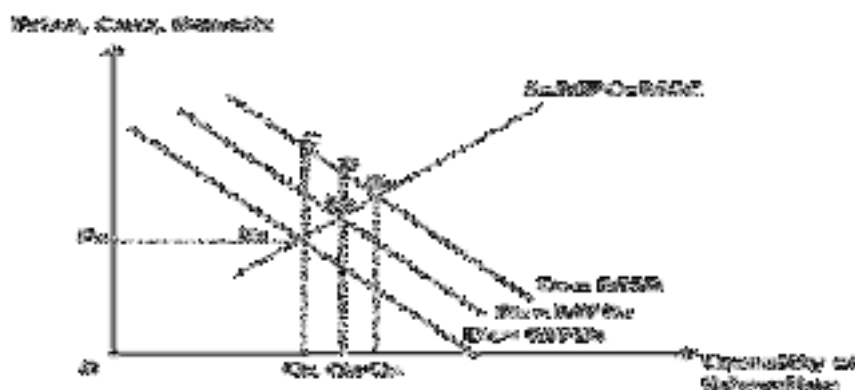
Body
Thesis: Explain why free education is an appropriate policy
    a) **Explain why govt intervention is necessary in the market for education**
    1. **Existence of positive externalities**
- The government is likely to intervene because it may consider education to be under-consumed when there are significant positive externalities. Positive externalities are benefits to third parties not directly involved in the production or consumption of the good. It is not reflected in the price of the good.
- Private individuals only take into account of private costs and private benefits, because they pursue only their self-interest and failed to internalize the external benefits of consuming education
  - Private cost: school fees, cost of uniform and books, foregone earnings.
  - Private benefits: Education allows an individual to enjoy better job prospects (higher future earnings and career progression) which translates to a higher material standard of living.
- **Positive externalities** from the consumption of education include equipping children with basic literacy and numeracy; possibly increase in future employment and growth rates. This helps to build a stronger economy by driving the economic competitiveness of the economy as it spurs innovation and entrepreneurial abilities. In the case of Singapore, by inculcating national values and social instincts via education, it also promotes peace and stability in the nation which are necessary in order to attract foreign direct investment from foreign MNC, thereby creating more opportunities of employment for the society as a whole. *(Need to emphasize how it affects 3rd parties who are not involved directly in the consumption/production of education and how it occurs without compensation)*
  - Thus, from the society's point of view, as consumers only take into account private costs and benefits ignore the external benefits from the consumption of education there is a divergence between social and private benefits so that MSB is higher than MPB (MSB = MPB + MEB)
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Figure 1: Positive Externality generated in the education market

- Figure 1 illustrates the situation when the consumption of education leads to positive externalities. The marginal private benefit (MPB2) to an individual would be a better physical and mental health state for each additional unit of education consumed. On the other hand, the marginal private cost (MPC) would be his education costs incurred in visiting the doctor or medication fees for each additional unit of education consumed.
- **Marginal social benefit (MSB)** is the additional social benefit from the last unit of a good produced and consumed. MSB = MPB2 + MEB where MEB is the marginal external benefits.
- Due to the presence of positive externality, which is shown by the **marginal external benefit (MEB)** at a particular level of output, marginal social benefit (MSB) will be **greater** than marginal private benefit (MPB), i.e. **MSB>MPB2**. There is a **divergence of MPB2 and MSB**. This means that the benefits of consumption to society include not just the benefits to the consumer but also the benefits to others enjoying the positive spillover effects, shown as MEB.
- Assuming that MPC = MSC. Since consumers will only consider their private benefit and cost while ignoring the benefits to third parties, they will consume at the level **OQ2** where **MPB2=MPC.** However, the **socially optimal level** of output occurs at **OQ3** where **MSC = MSB.**
- Since Q2 is **less** than Q3, it means that the price mechanism on its own cannot achieve an optimal allocation of resources. The government will consider that there is **under-consumption** of the good. Between Q2 and Q3, the social benefit of an additional unit of education consumed is higher than the social cost, resulting in **welfare loss** equivalent to BE2E3.
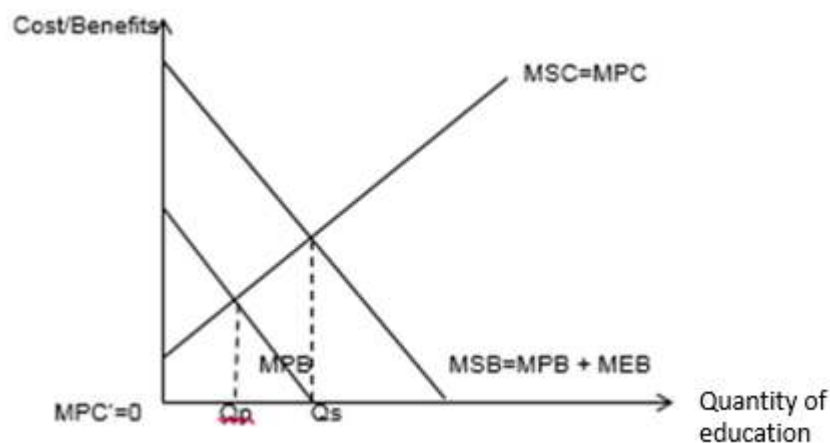
2. Imperfect information

- Besides, positive externalities, consumers might under-consume education due to **imperfect information**. Individuals may not be able to value their private benefits and costs correctly, especially when they undervalue long term private benefits of consuming education. If this is the case, the extent of under-consumption without government intervention will be more serious.
- Individuals may not be able to value their private benefits and costs correctly. In particular, individuals may not be fully aware of the long term private benefits of consuming education. For instance, individuals may lack information of the full benefits of consumption of education as these benefits such as future earnings are often difficult to estimate. Hence they have lower perceived benefits of education to self.
- If this is the case, MPB1 would be even lower at MPB2, and the level of consumption would only be at Q_1 resulting in an even larger deadweight loss of CE1E3. Hence, the government would consider the extent of under-consumption to be even more serious.
- EV: extent of imperfect information will be greater in remote regions in developing countries than developed countries due to parental ignorance. Due to the lack of access of information, these parents may not be aware of economic/ job opportunities in the cities

and how increased literacy standards might help their children source for a higher paying jobs and enable the family to break out of their poverty cycles. The deadweight loss in such remote regions might thus be larger than other regions.

3) Equity concerns
- Since the market responds to the "dollar votes" or demand cast by the consumers, resources may be allocated mainly to the production of goods and services demanded by the rich who have more dollar votes than the poor.
- If left to the free market, those who are unable to afford the high cost of private education may not get a chance to attend school. Thus, the total welfare of the community may not be maximised.
- Thus government intervention is advocated to address the issue of income inequality via subsidies or direct provision to ensure poor but talented children get a chance to attend school and help students from low income families to break the poverty cycle and narrow the gap between the rich and the poor. This will thus help to give every child the chance in life they deserve, building a stronger economy and a fairer more inclusive society.

b) Explain how Free Education works to address the sources of market failure found in the market for education
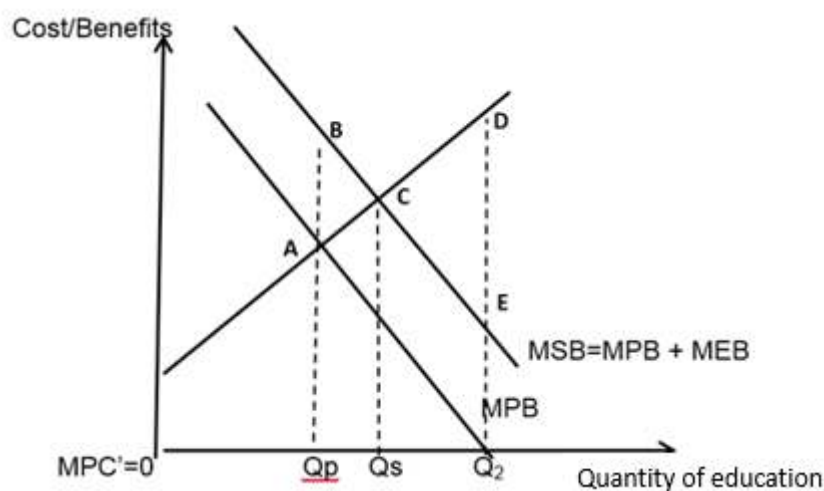

Figure 2: Government provision of free education

- Government provision of education is necessary as a means of correcting the under-consumption problem due to positive externalities and imperfect information, as explained above.
- With reference to Figure 2, in the absence of government intervention, consumers only consider their MPB and MPC of education, and consume at Qp (MPC=MPB).
- However, the socially optimal consumption should be at Qs where MSC=MSB.
- In this case, when the government provides education for free, the MPC to consumers is reduced to zero, as the price that they pay for education is zero. MPC shifts to MPC'=0.
- Intervention is necessary and results in allocative efficiency as consumers will thus consume at Qs, where MPC'=MPB, thus achieving an **efficient** allocation of resources.

In addition, government provision of free education is necessary as it could help to resolve **equity** issues, as the poor would be able to have access to education regardless of their ability to pay

Anti-thesis: Free education is NOT an appropriate policy and/or it might not result in allocative efficiency.
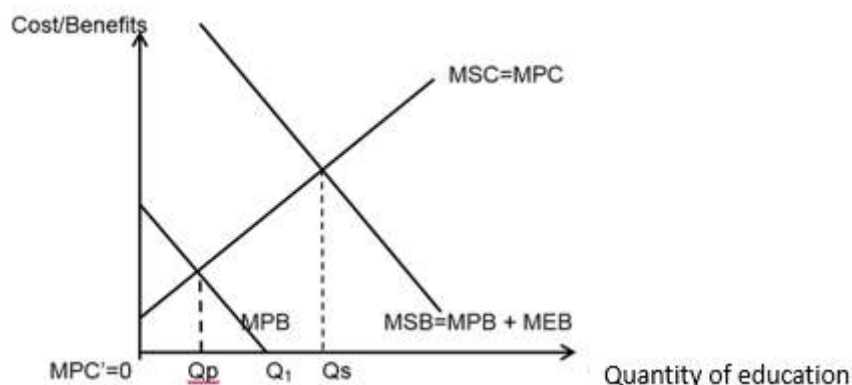- Government provision of free education **might not be efficient due to government failure**. A government might not be as cost effective as a profit-maximizing producer in producing education, and bureaucracy and red tape could lead to a wastage of resources.

- Government provision of free education might also not be efficient if the **extent of positive externalities is small**. Positive externalities could be limited in certain countries, especially developed countries, where the extent of positive externalities could be **small if the population is generally well-educated with most of them having received tertiary education**. While it is essential to improve literacy rates, bulk of the external benefits is found in primary education rather than tertiary education. Hence while it might be appropriate to provide free primary education in developing countries whose literacy rates is very low, it not be appropriate to provide free tertiary education where bulk of the benefits are private benefits that contribute to an individual's earnings rather than external benefits.
- As such, the free provision of education by the government is likely to be very inefficient when the MEB is small. Free provision will lead to the opposite problem of over-consumption of education. As seen in Figure 2, providing the good for free will actually lead to overconsumption of the good, as consumers will consume at Q_2 where MPC'=MPB, which is higher than Qs.

Figure 2: Overconsumption of education when provided for free

- Between Qs and Q_2, the additional cost to society of another unit of education is higher than the additional benefit to society, leading to welfare loss area of CDE, compared to the original welfare loss area of ABC when consumption was as Qp.
- This causes **greater inefficient allocation of an economy's resources**, resulting in a worse outcome than before.
- Moreover, government provision of free education will be inefficient if it does not target the **root cause of the problem**. For instance, in developing countries, the root cause of under-consumption might be due to ignorance about the benefits of consuming education. The perceived MPB could actually be very low. In these countries, parents are ignorant and would at times prefer to send their children to work rather than to attend school, not knowing that an educated individual can command higher wages compared to someone who is not literate. In this instance, referring to Figure 3, providing education for free only increases their consumption to Q_1 where MPC'=MPB.
- Instead the government should correct the imperfect information held by these ignorant parents via **public education**, thereby shifting the demand for education from MPB to MSB.
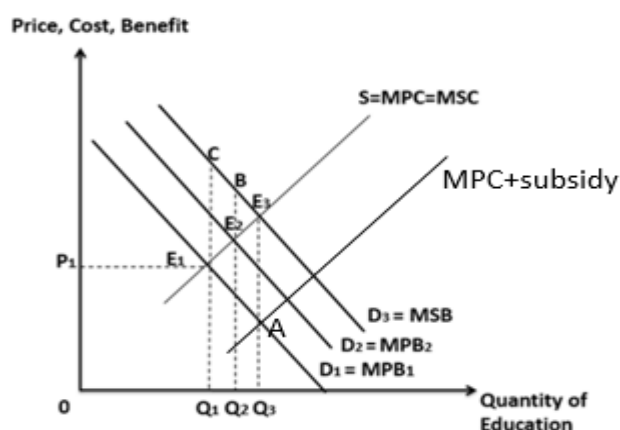
Figure 3: Under-consumption even when education is free

- EV: However, the socially optional level of consumption is at Qs where MSC=MSB. Hence, providing education for free only moves Qp closer to Qs. There is still underconsumption of education. In such a case, the government needs to increase the MPB of the consumer through policies like public education to convince consumers of the benefits of education services, in order to further increase their consumption.
- Furthermore, the limitations of free provision to resolve the externalities also depend on how the increased **government expenditure** can be financed. The **opportunity cost** of subsidising education might be very high if government has to limited funds for all its competing uses. There is always opportunity cost incurred in government spending on education. Something has to be given up in order for more funding to be made available for subsidising education. Hence, a reliable cost-benefit analysis should be carried out to ensure that the precious tax payers' are put to effective use in maximising society's welfare.
- If a government faces high government debt, subsidising education may worsen their debt burden. This could either result in **disincentive effects** on work and investment or reduction in **credit ratings** which weakens inflow of foreign direct investment if tax rates need to be increase or when government debt rises.

Mean-tested subsidies
- Hence government provision of free education is **not appropriate** as there are **other means of achieving the social optimum**. For example, cash grants, Skillsfuture grants, serve to increase the marginal private benefit of consuming education without affecting the price actually paid for it. When the cash grant is equivalent to AE3 at Q3, the MPC shifts to MPC+subsidy, and Q1 increases to Q3, hence achieving the social optimum level of consumption without making education free.

- In addition, education is not a public good as it is rivalrous and excludable

- Rivalrous: Additional people who consume education depletes the benefits available for others to enjoy
    → Marginal cost is <u>not</u> zero, i.e. there is opportunity cost involved in providing education to an additional student, if it is free then the price is lower than the opportunity cost of providing the last unit of the good)
    → Hence, education should not be free provision. There should a fee charged for education

Conclusion and evaluation
Stand and justification
- Governments should give careful consideration to the **extent of market failure** when deciding whether to provide it for free. It is not necessary for merit goods such as education as the free market will provide the good. In addition, government provision of any good might not be efficient due to government failure.
- Governments should also give careful consideration to **other issues such as their budget** when deciding on their policies. For education, free provision is likely to lead to severe wastage of resources as the government would be spending on education for the rich, who could actually afford to pay. In addition, there are possible abuses of the system especially if these handouts are given to the individuals directly rather than via the education centre. Handouts to the individuals may end up being part of the family's grocery expenditure rather than to pay for the school fees of their children. As such, policies like cash grants to the poor paid directly to the education centers should be used instead in order to increase the consumption of education in a more targeted manner, without burdening the government budget, in order to achieve an efficient and equitable allocation of an economy's scarce resources.

Knowledge, Understanding, Application and Analysis		
Level	*Descriptors*	*Marks*

L3	• Explains the critical ideas as to why education is an example of market failure
	    ◦ Merit good
	    ◦ inequity
	• Accurate and clear economic analysis explaining how direct provision could help to tackle the market failure in education
	• Critical evaluation of the limitations on the use of direct provision
	• Compares alternative measures
		15– 20

L2	• Briefly explains why education is an example of market failure • Lack of economic analysis in explaining how direct provision could help to tackle the problem of worsening traffic congestion • The limitations of the use of direct provision are mostly stated rather than explained	10 – 14
L1	• Answer is irrelevant in most parts • Answer is largely descriptive and lacks economic analysis	1 – 9
Evaluation		
Level	*Descriptors*	*Marks*
E3	• Critically evaluates the appropriateness of the use of direct provision in addressing the market failure found in the market for education • Evaluates relevance of unstated assumptions • Synthesises economic arguments	4-5
E2	Some attempt at evaluation	2-3
E1	Judgments are made, but they remain largely unsubstantiated.	1

Essay 3

'Contestable markets are imperfectly competitive markets in which firms face potential competition - pool of potential entrants in a market with no barriers to entry.'

a) Explain, using examples, how barriers to entry influence a firm's price and output decision. (10)

<u>**Introduction**</u>
- Barriers to entry (BTE) are obstacles that hinder the entry of new firms into an industry and limit the amount of competition faced by existing firms.
- BTE can be artificially created (e.g. government licenses, regulation--contestability) or natural (e.g. high capital outlay required). There are generally high barriers to entry in the market structures of monopoly and oligopoly.
- On the other hand, low barriers to entry exist in monopolistic competition and there are no barriers to entry or freedom of entry and exit in perfect competition.
- The degree of BTE is an important determinant in the amount of monopoly power enjoyed by firms because it affects the number of firms in the industry. The amount of monopoly power a firm has in term determines the ability of the firm sets its prices or output.

<u>**Body 1: Elaborate on 1 example of BTEs**</u>
* students should continue their analysis (for the rest of the qn), based on the example of BTE which they have explained (in this part of the answer)

a) Ownership of essential resources
If one firm owns the resources needed to produce a particular good, it is possible for the firm to keep other firms from entering the industry. For **example**, Aluminium Company of America (ALCOA) controls almost every source of bauxite, therefore it monopolises the production of aluminium in America till World War II; Debeers which monopolises the world's production of diamonds either owns most of the world's diamond mines or has effective control of them.

Other examples: Economies of scale, capital requirements, licenses, patents and copyrights.

<u>**Body 2: Explain the effects of BTEs on firms' price and output decision**</u>

1. <u>**Market structure with high BTE: Monopoly/Oligopoly**</u>
- The existence of **high BTE gives rise to monopoly power**.
- Monopoly is a market structure in which a single firm dominates the market and produces a product which has no close substitutes. For a firm to maintain this monopoly position, there must be high barriers to entry e.g. legislation by government, patent rights and copyrights, secrecy, economies of scale, high transport costs or tariffs, control of essential resources, network effects etc.
- The degree of monopoly power depends on the ability of these BTE in preventing new firms from entering the industry. Monopoly power implies that the demand curve of the firm is downward sloping and relatively price inelastic due to a lack of close substitutes, and the firm has the **ability to set a relatively higher price to increase revenue and thus profits.**
- Referring to figure 1, equilibrium output of a monopolist is attained at profit-maximising output OQ1 where MR = MC. The monopolist is able to restrict output at OQ1 and charge price OP1 above marginal costs.
- If the firm aims to maximises profits, the firm will produce at a level where the extra revenue earned from selling the last unit is just equal to the extra cost of producing that last unit, i.e. where MR = MC.

- Reason: When MR>MC, an additional unit produced adds more to the revenue than to the cost and hence profits can still increase by producing the extra unit. When MR<MC, an additional unit produced adds more to the cost than to the revenue, hence reducing the firm's profit and thus the firm will not produce the extra unit. Hence a firm maximises profit when it produces at the level of output where MR=MC.
- With prices charged being above average costs, the monopolist earns supernormal profit of area CP_1AB (total revenue of O P_1AQ_1 and total cost of $OCBQ_1$). The monopolist can restrict output at OQ1 to maintain the relatively high price of its goods at OP_1 above average costs to earn supernormal profits in both the short and long run – this is because it does not fear the entry of new firms to compete away these supernormal profits in the long run given the **high BTE.**
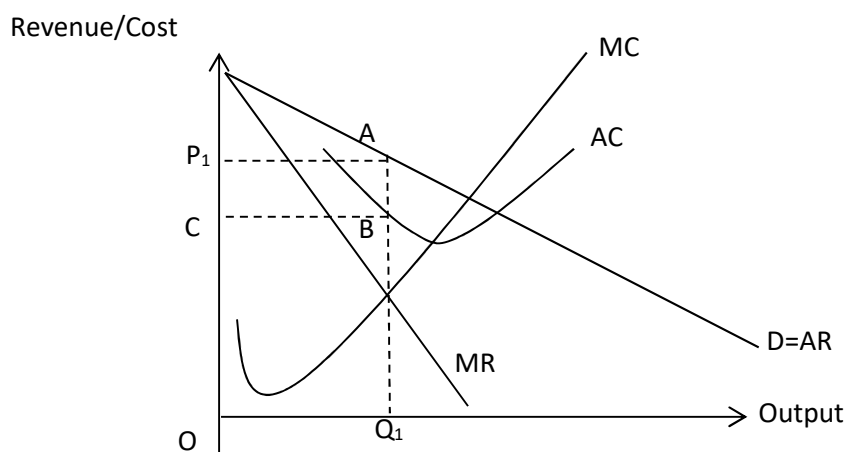

Figure 1

2a) Market structure with low BTE: Monopolistic Competition

- Monopolistic competitive (MPC) firms represent firms facing **low BTE**, resulting in the presence of many small but similar firms.
- Monopolistic competition is a market structure in which many small firms sell slightly differentiated products that are **close substitutes** of each other. As a result, a firm that raises its price will not lose all its sales and firms have some market power. Thus, each firm has some control over price and faces a downward sloping demand curve. However the firm's demand curve is relatively price elastic as each firm faces competition from a large number of close substitutes. A relatively small increase in the price of that product will lead many consumers to switch to one of the many close substitutes.
- Referring to figure 2, the MPC firm faces a demand curve D_1, and is maximising profit by producing at output OQ_1 where $MR_1 = MC$, and uses its market power to set price at OP_1 above marginal costs. The price OP_1 is higher than average costs OA and thus, the firm earns supernormal profits represented by the area E_1P_1AB.
- In the long run, new firms will be attracted to enter the industry with low barriers to entry. As more firms enter, the existing firm will have more competitors, so demand for its products decreases and becomes more price elastic due to the greater availability of substitute products. This process continues until the demand falls to D_2 and the firm maximises profit by producing at Q_e where $MC = MR_2$ and the lower price OP_e is just sufficient to cover average cost. Consequently, the MPC firm earns only normal profits in the long run.
- Hence, although MPC firms can set prices, lower market power compared to a monopolist due to the presence of substitutes ensures that the extent to which prices are above marginal costs is smaller. Also, low BTE ensures that **price charged is equal to the firm's average costs in the long run** – short run demand that is

consistent with higher prices will lead to other firms entering the industry and the firm's demand to fall, leading to a fall in price (from P_1 to P_e here) and a fall in output (from Q_1 to Q_e here).
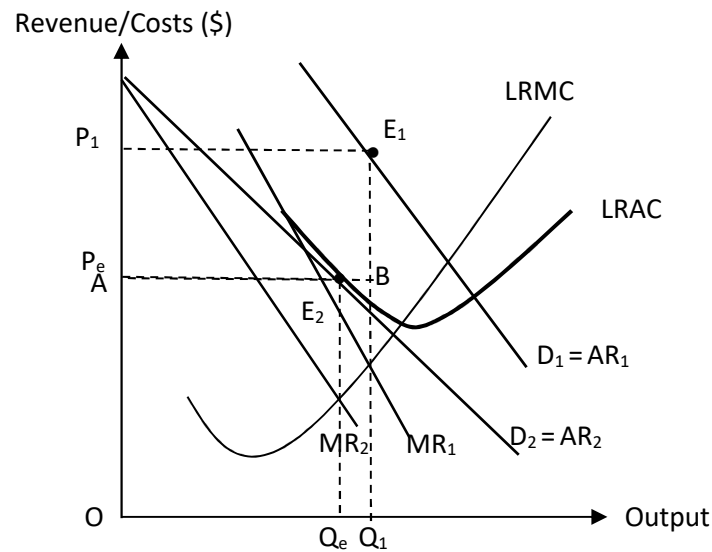
Revenue/Costs ($)

Figure 2

OR

2b) Market structure with no BTE: Perfect Competition

- Perfectly competitive (PC) firms represent firms in industries with no BTE.
- With the absence of BTE is likely to lead to a situation where there are many firms in the industry. In addition, PC markets have homogeneous products, existence of perfect knowledge and perfect factor mobility. As a result, each seller produces a very insignificant amount of the entire market supply and thus **act as price takers** in the market.
- Referring to figure 3b, the market demand and market supply curve in a PC market determine the market price OP_1 initially. Each profit-maximising PC firm will take this market price as given, producing output at MR=MC e.g. at Oq_1 and earn supernormal profit as shown by area CP_1AB in the short run, illustrated by figure 3a.
- In the long run, due to the absence of BTE, new firms will be attracted to join the industry as the supernormal profit indicates that the returns from this industry are higher than other industries. Existing firms will also expand output but they can use bigger plants in the long run.
- As long as PC firms make supernormal profits, more firms will enter the industry and the market supply curve will keep increasing, shifting to the right. This causes market price to keep falling, reducing the supernormal profits earned by firms. Eventually, when the market supply curve shifts from S_1 to S_2, reducing the market price to OP_2, all existing firms earn only normal profits and produce at minimum efficient scale of production (figures 3a & 3b). Thus, each profit maximizing PC firm will price its goods such that price equals marginal costs and average costs, earning only normal profits in the long run due to the absence of BTE. At this price, they can choose to sell the quantity they desire, e.g. Oq_2 as determined by MC=MR in figure 3a.
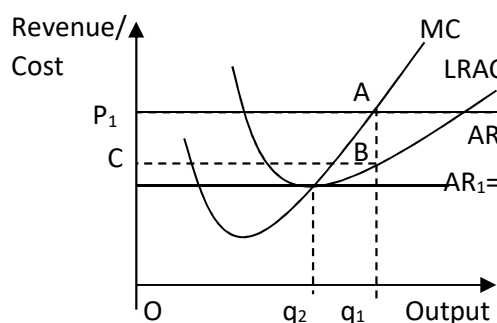
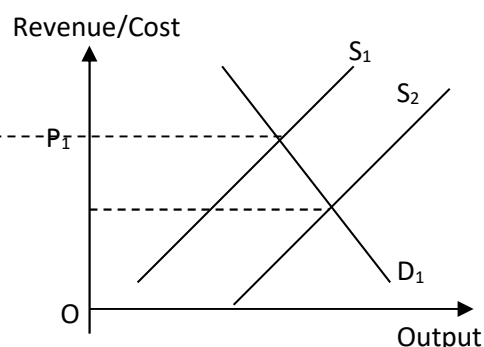Figure 3a   Figure 3b

Conclusion

- Thus BTE is an important factor affecting a firm's pricing and output decision in different market structures.
- For industries with high and low BTE, firms have the ability to set prices above marginal costs (though the extent of this varies with the level of BTE, e.g. MPC only being able to set prices equal AC in the long run). For industries with no BTE, firms are price takers and are unable to set prices above marginal and average costs in the long run.

Knowledge, Application, understanding and Analysis		
L3	Clear and well developed explanation of how the presence of both high and low BTEs help firms to determine the price and output that includes	8 – 10
L2	Under-developed explanation of how BTEs affect price and output decision of firms.	5 – 7
L1	For an answer that shows a descriptive knowledge of barriers to entry and some knowledge of the decision making process of the firms in price and output.	1-- 4

b) **Discuss the extent to which the efficiency of firms depends on the threat of potential competition that it faces. (15)**

Introduction

- Efficiency of firms would include **allocative efficiency, productive efficiency and dynamic efficiency**
- Allocative efficiency is concerned with the way resources are allocated among competing uses so that **the right goods are produced in the right amount.** This occurs when the price the consumer pays is equal to the cost of producing the last unit of output, that is, price of the good is equal to the marginal cost. Price reflects the value consumers place on extra units of the goods while MC reflects the additional costs of producing these units.
- Productive efficiency is achieved when the firms in an economy are producing the **maximum output for the given amount of inputs**, or producing a given output with the least cost combination of inputs. All profit-driven firms will be productively efficient.
- Dynamic efficiency, refers to situations whereby firms are **technologically progressive that result in the efficient use of resources over a period of time**.

   i)   **Thesis: behaviour of firm depends more on the threat of competition**

A **contestable market** is one in which there is free entry to and exit from the industry and hence there is **threat of potential competition** (rather than actual) which is crucial in determining the behaviour of firms in an industry.

There are three main conditions for pure market contestability arising from the lack of barriers to entry leading to the free entry and exit from the industry:

(i)   Perfect information and the ability and/or the right of all suppliers to make use of the best available production technology in the market

(ii)   The freedom to market / advertise and enter a market with a competing product

(iii)   The absence of sunk costs – this reduces the risks of coming into a market
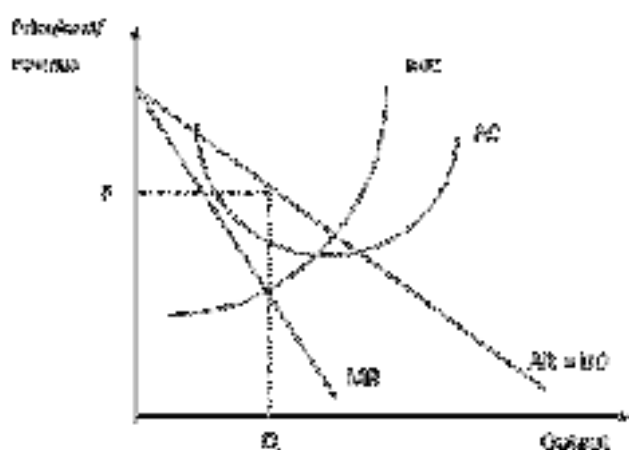
In practise few markets are perfectly contestable, however there are degrees of contestability. With lower barriers to entry and exit, the market will be more contestable. Firms in contestable markets are more likely to exhibit competitive prices, low profitability and possibly experiencing smaller degrees of allocative inefficiency.

The freedom to entry means that there is always the potential for new firms to enter. **The theory of contestability argues that the threat of potential competition will force the existing firms to be more efficient and to behave more competitively than they would in order to keep out the potential competitors.**

This threat of competition helps to keep prices low. If firms set prices too high, the supernormal profits will attract new firms to enter the market. The low prices observed in contestable markets help to reduce the size of allocative inefficiency because prices will be closer to marginal cost as opposed to what could be observed in markets that are non-contestable.

(Elaborate on 2 ways on HOW the efficiency of firms will be affected by the presence of contestability)

a)   lowered prices and lesser allocative inefficiency

Previously, given the firms' initial degree of market power → assuming that they practise profit-maximisation, MC = MR → price charged is at P, qty produced at Q → price charged was above marginal cost → the value to which the consumers placed on the last unit of output is greater than the opportunity cost incurred in producing the last unit → **allocatively inefficient** → underproduction → society's welfare is not maximised

With greater contestability → cause the existing firms to charge lower prices **to deter the entry of the potential entrant** → the extent to which P>MC becomes smaller → more units of output to be produced → closer to socially optimum quantity → therefore, there will be **lesser allocative inefficiency**

b) increased variety & quality of services & greater dynamic efficiency

Large firms are able to retain supernormal profits in the long run due to the presence of high BTE and are able to engage in R&D. However, they are often less willing to do so due to the lack of incentive.

Now, with this potential of new firms enter, firms currently enjoying tremendous amount of market share and supernormal profits would be more inclined to channel the supernormal earned towards product and process R&D rather than to distribute dividends to shareholders which worsens income inequality and inequity. **Hence the contestable market is more likely to be dynamic efficient as compared to non-contestable markets which could also be enjoying supernormal profits but lack the incentive to innovate.**

Therefore, with **greater contestability**, in order not to lose existing customers to the new incumbents, existing firms will be **more willing** engage in product development → make the demand more price inelastic/ increase in firm's demand and hence total revenue → consumers get to enjoy better quality products & also greater variety of services in terms of various added-services → greater **dynamic efficiency** in the society

Evaluate: Extent of threat of potential competitor

- If the potential firm is not likely to be able to generate supernormal profits in the market → existing firms may therefore perceive the **threat** of the potential firm to be **insignificant** → less incentivized to engage in product development → consumers might not be enjoying the above benefits

OR

- If these existing firms focus too much on lowering of prices → squeeze profit margins of existing firms → may affect ability of such firms' to invest in newer technological developments → end up reducing dynamic efficiency → lesser innovations to be seen in the future

C) effects of contestability on process R&D and hence productive efficiency

As firms in contestable markets carry out process R&D or any cost-cutting competition religiously, they are also likely to be experiencing lower average costs which makes them not just productively efficient but producing at a level of output that is closer to the minimum efficient scale too.

   ii)   <u>**Anti-thesis 1: efficiency of firms depends more on the actions of their competitors—actual competition rather than potential competition**</u>
      Explain characteristics of oligopolist firms:
- In oligopolistic competition, there are **few large firms** due to **high BTEs** which can be both natural of artificial. E.g. due to high start-up cost found in telecommunication firms.
- In oligopolistic competition, the firms sell **similar but differentiated product**. Due to the nature of the product and the existence of a few dominant firms, the firms in the industry will be very conscious with the prices changes—**mutually interdependent**.

If the firm increases its price, other firms do not follow so demand is price elastic but if the firm decreases the price, other firms will follow so demand is price inelastic. This explains the **price rigidity** in oligopolistic competition.

o The **mutual interdependence** between oligopolists will either lead the firms to **compete** to gain a larger share of industry profits for themselves in their pricing and output decisions or to **collude** to maximize industry profits

a) **Effects of mutual interdependence on allocative efficiency**
   o Given the high BTEs enjoyed by oligopolistic firms, assuming that they choose to profit maximize, the pricing and output decision is likely to be one which is allocatively inefficient where P>MC.
   EV: the extent of the allocative inefficiency may be reduced when competitive oligopolistic firms decide to engage in a price war. This is likely to happen when demand falls drastically, such as during a recession. Due to the mutual interdependence among oligopolistic firms, if an oligopolist lowers its **productively efficient** price, its rivals will also follow and lower their prices so as not to lose customers to the first firm which lowered prices. As prices fall, output increases based on the law of demand. As output increases, MC rises due to the law of diminishing marginal returns. Hence the **extent of allocative inefficiency is reduced**.

b) **Effects of mutual interdependence on dynamic efficiency**
   o High BTEs→ oligopolistic firms are likely to make supernormal profits → mutual interdependence → fear of losing customers to their <u>existing</u> competitors, firms will be **more willing** engage in product & process research & development → consumers get to enjoy better quality products & greater variety of services at possibly lower prices→ greater **dynamic efficiency** in the society
   EV: extent of dynamic efficiency can be very much reduced if firms are collusive. Eg. OPEC or if the firms are complacent with little incentive to compete against one another. Instead these supernormal profits may go to the pockets of the shareholders and worsen income inequality.

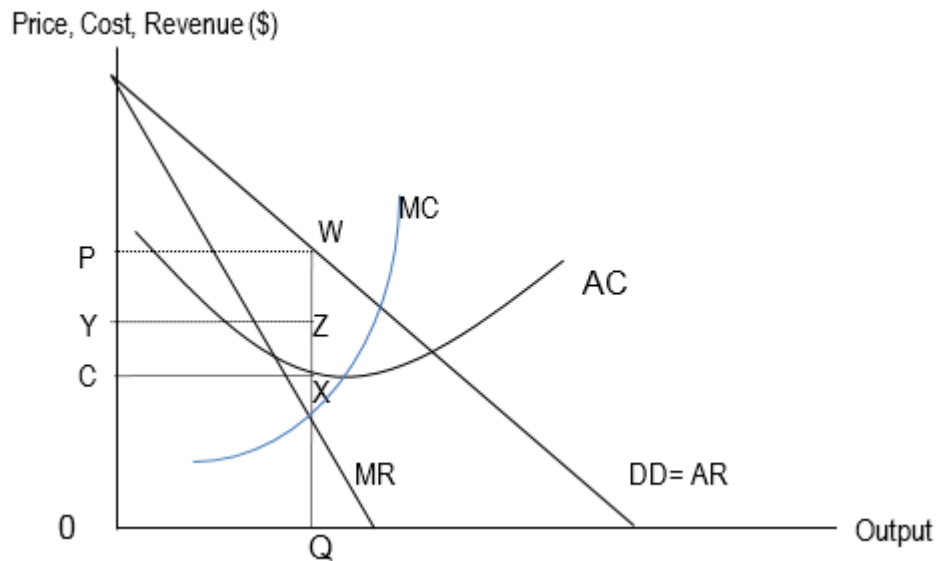c) **Effects of mutual independence on productive efficiency**
   o As long as oligopolies are profit driven, both competitive and collusive oligopolists will be productively efficient. When it is profit driven, it will be producing the maximum output for a given amount of inputs, or producing a given output at the least cost. Since it is producing on the LRAC curve, the oligopolist is using the least cost combination of their resources for that output level. Hence both types of oligopolistic firms are.

Anti-thesis 2: efficiency of firms depends more on govt intervention

   i. **Govt Intervention**
   o Elaborate on how allocative and dynamic efficiency of firms will manifest depending on the type of govt intervention
      □ High BTEs→ firms tend to produce at a level that is allocatively inefficient → underproduction → misallocation of resources → society's welfare is not maximize →calls for govt intervention
      □ Govt intervention such as **Profit tax** which is progressive in nature such that more profitable firms will be taxed more → To avoid paying more taxes, profit driven firms may be forced to be **less allocatively inefficient** and produce at a level of output where price is closer to its marginal cost

    □ They will also have more incentive to divert their supernormal profits into produce and process R&D and hence be **more dynamically efficient**.
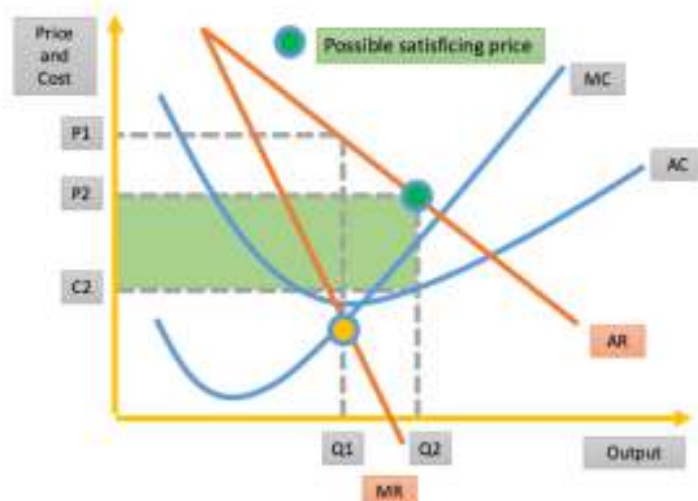

    □ A profit tax is a tax on profit and will not affect the monopolist's costs. As such, equilibrium price and output remains unchanged at OP and OQ as seen below. A profit tax of area PWZY would simply reduce the profits from area PWXC to area YZXC

Anti-thesis 3: efficiency of firms depends more on objectives of firms

ii. Objectives of firms

o Elaborate on how allocative efficiency of firms will manifest depending on the objective of the firms

    □ Profit-satisficing goals: Rather than trying to maximize profits, managers aim for a profit level that will keep certain stake-holders from workers, consumers, suppliers, the local community to environmentalists, happy. For example, sustainable initiatives carried by firms have been found to have impressed consumers. This has prompted many firms to carry out their respective corporate social responsibilities. For example, some have pushed themselves harder to highlight their greater focus on enhanced sustainable design, manufacturing and supply chain management.

☐ As such, rather than to profit maximize by producing at Q1 and setting the price of P1, firms may choose to produce at Q2 at the price of P2 which is **closer towards allocative efficiency**.

Conclusion:

Many governments around the world have in the past relied on competition and government intervention to force firms to improve their level of efficiency. Having said that, many firms remain complacent due to the lack of credible competitors. For example, the taxi industry in Singapore has been slow to innovate despite years of complains from commuters about its poor service. However, with the advent of Uber and Grab, service standards have improved and the level of allocative and dynamic efficiency enjoyed by commuters has increased. Hence, as governments (whose goal is to maximise society's welfare) notice how competition alone might not be sufficient to get firms to act in the interest of the consumers, more has been done to increase the contestability of firms as this is what would affect the efficiency of most firms in this current time and age.

Knowledge, Application, understanding and Analysis		
L3	For answers that shows: Excellent depth and scope in analysis: - Accurate use of economic concepts and analysis throughout the essay - Answers that considers **all the different factors**/ alternative scenarios in an **analytical way** **Analyses at least two factors in a very rigorous way that suggests the difference in levels of firms' efficiency**	8 – 10
L2	For answers that shows: Good depth and scope in analysis: - Accurate use of economic concepts and analysis in most of the explanations - Use of economic concepts may not be precise - Answer that **attempts** to provide a good analysis and explanation of how contestability and other factors that influence the levels of firms' efficiency	5 – 7

	Limited scope. Eg, answers that only demonstrated **analysis of only contestability** and which **addresses the <u>differences</u> in levels of efficiency**	
L1	For answers that shows: • Descriptive statements	1-- 4

Evaluation		
Level	*Descriptors*	*Marks*
E3	Critically evaluates the different factors that affects the firms' level of efficiency	4-5
E2	Some attempt at evaluation	2-3
E1	Judgments are made, but they remain largely unsubstantiated.	1

Essay 4

Singapore entered its 18th consecutive month of negative inflation in April 2016, the longest streak of deflation on record. While previous episodes of deflation coincided with recessions, analysts noted that lower global crude oil prices, cheaper utilities as well as transport costs also had a significant impact.

Adapted from Singapore Business Review, 24 May 2016

a) Explain the possible causes of deflation in Singapore. [10]
b) Discuss the view that deflation brings about more costs than benefits to an economy. [15]

Suggested answer for (a)

Introduction
• [Define key terms]: Deflation refers to a sustained fall in general fall in general price level within an economy.   • [Set direction of essay]: Singapore's deflation may be caused by malign deflation and benign deflation. We will discuss the possible causes of the malign and benign deflation in this essay.

Devt 1: Deflation in SG may be caused by malign deflation
• Malign deflation occurs when there is falling AD in the Singapore economy.   • When there is a global recession, national income of Singapore's major trading partner falls. Fall in purchasing power of citizens in our trading partner will lead to a fall in demand for Singapore's exports assuming they are normal goods. Hence, Singapore's export revenue falls. Since AD = C+I+G+(X-M), a fall in export revenue leads to a fall in Singapore's AD from AD1 to AD2.   • [Briefly explain adjustment process + AD/AS diagram]: At initial GPL P1, there is a surplus which leads to an increase in inventories. As GPL decreases, firms cut production while economic agents increase total spending until new equilibrium is formed at E2, with lower GPL P2.   • Prolonged recession leads to poor business outlook which leads to fall in business confidence and investor's willingness to invest. At every interest rate level, MEI shifts leftwards and volume of investment falls. This leads to fall further fall in AD from AD2 to AD3   • [Link to persistent fall in GPL]: As such, persistent fall in AD leads to persistent fall in GPL which results in malign deflation.   • Besides recession, malign deflation might be caused by domestic policies such as property market cooling measures. An increase in stamp duty, which is a tax levied on the purchase of property will discourage consumers from purchasing property. This fall in consumption expenditure can also lead to a fall in AD and further falls in AD as a result of falling consumer and business confidence can also lead to malign deflation.

Devt 2: Deflation in SG may be caused by benign deflation
- Benign deflation occurs when there is rising AS in the Singapore economy.   - This can be due to lower crude oil prices. As oil is an essential raw material for manufacturing, energy and transport sectors, a fall in oil prices will lead to a significant fall in unit cost of production. Individual market supply curves shift rightwards as profit motivated producers increase production. If enough supply curves shift rightwards, AS shifts rightwards from AS1 to AS2, resulting in a surplus and downward pressure on GPL to P2.   - Persistent fall in oil prices will lead to further increase in AS from AS2 to AS3 which in turn leads to persistent fall in GPL from P2 to P3 and hence causing benign deflation .

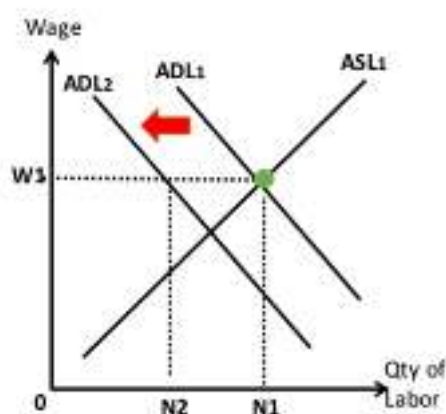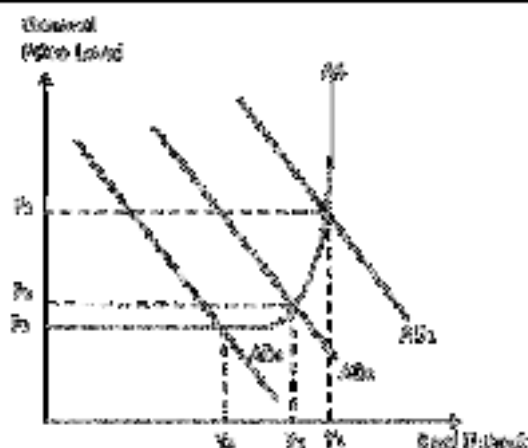| Conclusion (Rank causes) |
|---|
| While fall in oil prices is partly responsible for persistent deflation, broader domestic regulations to curb spending on housing and cars are likely to be the main culprits behind Singapore's deflation. Fall in oil prices and recession are likely to be temporary and not likely to persist if the global economy recovers. Moreover the success of domestic policies in curbing housing and car prices, which are consumer durables that account for a large proportion of Singapore's CPI, is likely to exert a greater downward pressure on Singapore's inflation rate.

[Alternative 1] As Singapore is a small and open economy, external factors such as recession in our trading partners and falling crude oil prices are likely to have a large deflationary impact on Singapore and are therefore likely to be more significant causes of deflation in Singapore.

[Alternative 2]: Although the inflation is negative in Singapore, the fall in prices has not been broad-based. Food prices, labour costs for example, have risen. As the deflationary effects of lower oil prices and one-off cooling measures ease, inflation is likely to pick up. |

Knowledge, Understanding, Application , Analysis		
L3	For an answer that gives an **analytical explanation** of the causes of malign and benign deflation in Singapore.	8-10 (9)
L2	For an answer that either gives a largely descriptive explanation of the causes of deflation or an appropriate analytical explanation for either malign or benign deflation but not both.	5-7 (6)
L1	For an answer that shows some knowledge on deflation.	1-4

b) Discuss the view that deflation brings about more costs than benefits to an economy. [15]

Suggested answer for (b)

Introduction
• Deflation can bring about both costs and benefits to an economy. • Whether costs outweigh the benefits may depend on the root cause of deflation, the extent of consequences and how persistent deflation is.

Devt 1: Explain the costs of deflation to an economy
1. **Negative impact on growth, employment & SOL** • Consumers delay purchases thinking that they will be cheaper in future→ fall in Cd • Moreover, during deflation, real value of debt increase as GPL fall → higher real debt reduces people's willingness to spend and consumer confidence→ further fall in Cd

- This leads to persistent fall in AD→ multiplied fall in real output→ negative actual growth
- Fall in real income→ fall in PP → less ability to consume goods and services→ fall in material SOL
- As production levels decrease→ demand for labour decreases (as it is a derived demand) from ADL1 to ADL2→ increase demand-deficient unemployment N2N1 assuming wages are sticky at W1 due to contractual agreements→ loss of job security, higher crime rates→ fall in non-material SOL
- EV: extent of impact depends on extent of consumer pessimism which in turn is dependent on how persistent deflation is. The longer deflation persists→ continuous fall in AD and price levels→ worsens consumers' confidence→ more convinced to withhold spending in current period→ contributes to a deflationary spiral.
- EV: Extent of impact also depends on how dependant a country is on domestic demand. The more dependant a country is on domestic demand, the greater the impact of fall in C and I on AD→ greater extent of fall in growth, employment and SOL.

2. **Negative impact on investments, potential growth**
   - Households hold more cash→↓capital for firms to borrow→ ↓Investments → ↓productive capacity→ ↓LRAS→ negative potential growth→ reduces economy's capacity to achieve non-inflationary growth→↓future SOL

3. **Inefficiency due to deflationary noise**

• Misinterpretations of price signals→ frustrates signalling and rationing role of prices→ allocative inefficiency in resource allocation

Devt 2: Explain the benefits of deflation to an economy

1. **Impact on export competitiveness, BOP**
    • Deflation→ prices of domestic goods fall and become relatively lower than foreign countries→ increase export price competitiveness→ ↓Px→ more than proportionate increase in quantity demanded of exports assuming PEDx>1→ export revenue increases→ (X-M) increases→ improve current account and improve BOP account.
    • Assuming BOP initially in deficit, this will help reduce BOP deficit→ suggests that economy is better able to live within its means→ less need for govt to resort to foreign borrowing or sale of govt assets.
 	
2. **Impact on potential growth**
    • Benign deflation→ fall in prices due to firms adopting better technology to cut their production cost or healthy competition is driving down prices. E.g. Amazon's entry to Singapore's e-commerce market helped drive down prices with greater competition and implementation of more efficient transport, logistics systems and processes→ ↑productivity→↑productive capacity→↑LRAS→ potential growth
 	
EV: However, the extent of benefits reaped depends on the level of competition and the willingness of firms to innovate to cut costs. If firms are not willing engage in R&D or implement better technology to cut production costs (possibly due to the lack of threat of potential competition), individual supply curves will not shift rightwards and the fall in GPL that results from increase in AS may not materialise.
 	
EV: While implementation of better technology may help cut production costs, leading to a rise in productive capacity and AS, it can also possibly lead to greater structural unemployment as low skilled workers may find themselves displaced by greater use of capital goods/ machinery and they are unable to find jobs in other industries due to mismatch of skills.

Conclusion
Whether deflation brings about more costs than benefits to an economy depends on: **[Root cause of deflation]:** If fall in prices are driven by benign deflation due to use of better technology or greater competition→ gains in consumer welfare due to lower prices and greater variety of goods is likely to occur without any loss in real output. **[Time period]:** A persistent malign deflation on the other hand, is likely to be damaging as it will reinforce poor consumer outlook and consumers expectations of falling prices→ resultant fall in Cd and AD likely to yield more damaging effects. **[Effectiveness of policies to fight deflation]:** In reality, malign deflation is hard to fight as strong pessimism among household and firms renders monetary policy and fiscal policy in

stimulating AD→ hence leading to more prolonged deflation→ long term negative effects will outweigh any benefits.
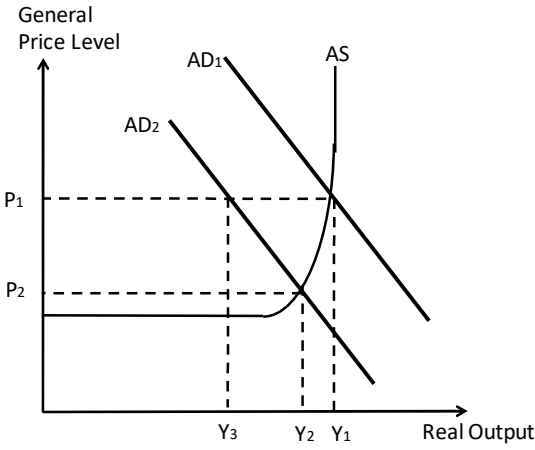
Level	Knowledge, Comprehension, Application and Analysis	Marks
L3	For an answer that uses **appropriate analysis** to support the discussion on both costs and benefits of deflation on an economy.	8-10 (9)
L2	For an answer that uses **descriptive explanation** to support the discussion on cost and benefits of deflation on an economy. OR either cost or benefits are well-explained but not both.	5-7 (6)
L1	For an answer that shows some **knowledge** of impacts of deflation	1-4
	Evaluation	
E3	For an answer that arrives at an analytically well-reasoned judgement about the impacts on deflation.	4-5
E2	For an answer that makes some attempt at a judgement	2-3
E1	Mainly unexplained judgement	1

Meridian Junior College
H2 Economics 9757 Prelim (Essays)

Essay 5

The US Federal Reserve raised its benchmark interest rate to 1.25 per cent on 14 June 2017. In explaining this second rate hike of 2017 and plans for more increases in the coming months, Federal Reserve Chair Janet Yellen said the move reflected progress in the world's largest economy, which continues to add jobs at a solid pace.

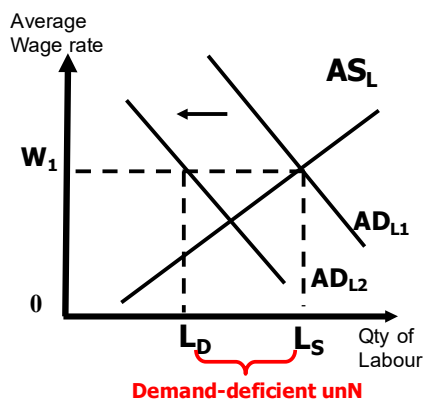Assess the likely internal and external impact of rising interest rates on the US economy.
[25]

Introduction
- Rising US interest rates→ form of contractionary monetary policy   - Policy response to pre-empt possible inflationary pressures as a result of rising AD→ US "continues to add jobs at a solid pace"→ suggests US economy is operating near full employment.

Devt 1: Explain internal impacts of rising US interest rates
(+/-) Impact on growth and inflation   - Rise in interest rates→ increase cost of borrowing→ previously profitable investment projects become more unprofitable→ lower investment expenditure → reduce AD.   - Assuming economy operating near full employment. A fall in AD from AD1 to AD2 causes a surplus of Y1Y3 at initial GPL of P1. This leads to a build-up of inventories which incentivises producers to cut production and hire less factors of production. This leads to a downward pressure on GPL, as GPL falls, total spending rises while total output decreases. The economy reaches new eqm where AD2=AS with lower real output Y2, lower GPL P2. This reduces inflationary pressure in the US economy but leads to negative actual growth.   - Negative internal impact of negative growth→ lower PP → lower ability to consumer goods and services→ lower material SOL   - Positive internal impact of lower price levels→ reduce cost of living   - EV: Extent of impact depends on business outlook→ if businessmen are optimistic about US economy, may be willing to invest despite higher interest rates and cost of borrowing, hence AD may not fall to a large extent and the impacts as discussed above will be to a smaller extent.   - EV: Extent of impact also depends on multiplier size→ In the US, there is a high marginal propensity to consume and low marginal propensity to save (withdraw) due to its large population with heavy spending habits. Hence, given a fall in injection in the circular flow (e.g. decrease in I due to increase in i/r), larger proportion of decrease in income remains in the inner flow to generate larger decreases in national income. The US has a larger multiplier size and is likely to experience a large multiplied decrease in national income. The impact of negative growth is likely to be larger.

(-) Impact on potential growth

- In the LR, Fall in investments→ fall in capital accumulation→ fall in qty of capital goods→ fall in economy's productive capacity → fall in LRAS
- Negative internal impact of negative potential growth→ future standard of living will be compromised→ sustained growth less likely to be achieved. Future increases in AD will be met by higher demand pull inflation rather than higher real output.

(-) Impact on unemployment

- With a ↓real output → ↓ADL from ADL1 to ADL2→ ↑demand deficient unemployment of LDLS assuming wages sticky downwards at W1 due to contractual agreements
- **Negative internal impact** of ↑cyclical UE which lowers non-material well-being as households may be stressed over loss of job security, finding jobs.

Devt 2: Explain external impacts of rising US interest rates

(+/-) Impact on exchange rates, capital/financial account

- Rise in interest rates (relatively higher than other countries)→ increase returns on investments→ hot money inflow into US→ DD for USD increase→ USD appreciates
- Inflow of hot money→ credit in KFA→ improvement in BOP assuming BOP initially in eqm.
- Positive external impact→ the strengthening of a currency suggests good economic fundamentals e.g. attractiveness as a destination of FDI and also reduces inflation by reducing imported inflation and demand pull inflation.
- Positive external impact→ improvement in BOP→ suggest economy is more able to live within its means
- EV: However, an appreciation will worsen export price competitiveness which impacts growth and employment negatively→ negative internal impact.

(+/-) Impact on current account

- Rise in i/r→ Appreciation of USD→ assuming M-L condition holds→ (X-M) decreases→ worsens CA → worsens BOP (Negative external impact)
- Rise in i/r→ lower dd-pull inflation (relative to other countries)→ price of exports decrease→ qty dd of X increase→ export revenue increase assuming PEDx>1. At the same time, price of imports relatively more expensive→ DD for imports fall→ import expenditure falls → (X-M) increase → improve CA, improve BOP (positive external impact)
- EV: in the SR, M-L condition may not hold → improvement in BOP reinforced by fall in inflation (overall positive external impact in SR). However, in the LR, the two impacts oppose each other→ outcome indeterminate.

Conclusion:

1. What is the likely internal impact?

- [Depends on state of economy] If US is operating at spare employment, the positive impacts of reducing inflation will be minimal and will be outweighed by the negative impacts of falling production and output.
- [Depends on ability of govt to address the negative impacts in the long run] In the long run, if US is able to use supply side policies to achieve potential growth in order to avoid any possible negative potential growth analysed earlier. However, the US govt is likely to be limited to budget deficits and is less able to finance supply side policies.

2. What is the likely external impact?

- Overall, as the impact on the both current account and capital financial account is positive in the short run→ BOP as a whole should improve in the short run. However, it is indeterminate in the long run.

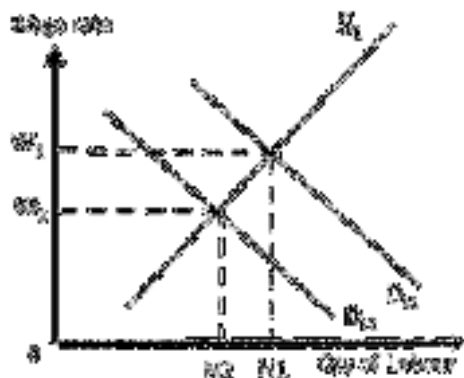|	Knowledge, Understanding, Application , Analysis	
L3	For an answer that gives an **<u>analytical explanation</u>** to explain both the internal and external impact in the US.	15-20 (18)
L2	For an answer that either gives a largely descriptive explanation of the internal and/or external impact in the US.	9-14 (12)
L1	For an answer that shows largely unexplained knowledge of the impact on the US economy.	1-8 (5)
E3	For an answer that uses analysis to support an evaluative appraisal of both the potential internal and external impact of a rise in interest rates in the US	4-5
E2	For an answer that makes some attempt at an evaluative appraisal of the potential internal or external impacts or both of a rise in interest rates in the US.	2-3
E1	For an answer that gives an unsupported concluding statement.	1

Essay 6

Despite rising anti-globalisation sentiments in 2016, Singapore's Committee on the Future Economy said that Singapore must stay open to trade, talent and ideas.
   a) Explain the consequences of globalisation on an economy. [10]
   b) Discuss whether exchange rate policy is the best way to address the consequences of globalisation in Singapore. [15]

Suggested answer (a)

Introduction
• Globalisation leads to increased integration of countries with the global economy through greater trade in goods and services, capital flows and labour movement across countries. • These have both positive and negative consequences on an economy such as Singapore.
Development: Explain consequences of globalisation (Explain any 3 consequences)

Positive consequences (Actual and potential growth)
- [Link to globalisation] With greater trade liberalisation and enlarged global market to trade with, countries experience greater demand for their exports, hence X revenue increases.

Since AD = C+I+G+(X-M), an increase in X will lead to an increase in AD from AD1 to AD2. At initial GPL P1, there is a shortage of Y1Y3 which leads to a rundown in inventories. As GPL increases, firms increase production while economic agents decrease total spending until new equilibrium is formed at E2, with higher GPL P2 and real output Y2. This leads to actual growth.

- [Consequence]: Since national income has risen and assuming economic growth rate > population growth, there is an increase in quantity of goods enjoyed by every citizen, hence material SOL rises.
- [Link to globalisation] Also, with greater capital flows (FDI) due to removal of capital restrictions, there will be greater capital accumulation which increases productive capacity and ↑ LRAS of the economy, hence resulting in potential growth.
- [Consequence] ↑ LRAS allows for ↓ GPL→ allows for sustained growth.

Increased Volatility in GPL
- **[Link to globalisation]:** With greater integration of economies→ problems in one part of the world can quickly spread to other parts of the world
- Inflation in China → ↑GPL China → ↑Price of imported raw materials from China → In SG, unit COP↑ → ↓SRAS (shift upwards) → ↑GPL via imported inflation
- **[Consequence]** ↓competitiveness of exports; ↓business confidence due to uncertainty in prices

Increased Structural Unemployment

- With greater focus on trade due to trade liberalisation (or with greater competition between economies)→ more frequent restructuring of economies to focus on the industries that produce goods which they have CA in

- Fall in dd for unskilled labour in sunset/contracting industries from DL1 to DL2→ retrenched workers unable to find jobs in expanding industries due to a mismatch of skills → structural UE of N1N2 workers
- [Consequence]: ↓tax revenue collected, worsens govt budget

Conclusion:

As the world economies becomes more interconnected and integrated, increased volatility in growth and employment is one of the more important consequences experienced by economies where recession in a country or region spreads very quickly as seen in recent times. This is especially so for SG, due to SG's size of external dd which is 75% of total dd→ large impact on SG's NI

While there are several consequences of globalisation, the benefits of it should not be ignored. As a small open economy, Singapore can continue to ride on the benefits of globalisation but using appropriate policies to minimise the costs of globalisation.

	Knowledge, Understanding, Application , Analysis	
L3	For an answer that gives an **analytical explanation** of the consequences of globalisation on an economy.	8-10 (9)
L2	For an answer that either gives a largely descriptive explanation of the consequences of globalisation or an appropriate analytical explanation for one consequence but not all.	5-7 (6)
L1	For an answer that shows some knowledge on globalisation.	1-4

b) Discuss whether exchange rate policy is the best way the Singapore government can adopt to address the consequences of globalisation. [15]

Suggested answer (b)

Introduction
• Exchange rate policy- manipulation of external value of Singapore's currency to achieve macro goals. • While exchange rate policy may be good in addressing some specific consequences such as volatility of growth and GPL in SG (e.g. excessive increase in AD and demand pull inflation), other policies are needed to target other consequences such as structural unemployment.
Thesis: Exchange rate policy can be adopted to address consequences of globalisation (volatility in growth and GPL)
• SG adopts a modest and gradual appreciation of SGD- a relatively strong Singapore's exchange rate has to be maintained to cushion the impact of rising costs of imported raw materials and final goods and services. • Appreciation of the SGD→ causes the prices of imports to become relatively cheaper. This in turn reduces the prices of imported raw materials, lower unit cost production of goods and services. Individual supply curve shift rightwards as profit motivated producers are more willing and able to supply, and if enough individual SS curve shifts, SRAS shifts rightwards, lowering GPL. • In addition, an appreciation, assuming Marshall Lerner condition holds (PEDx+PEDm>1) would result in a fall in AD. An appreciation will cause prices of exports to be more expensive in foreign currency and prices of imports to be cheaper in domestic currency. Assuming Marshall-Lerner condition holds, net export revenue falls and AD falls. This helps to moderate any excessive increase in AD (DD pull inflation) as a result of globalisation. The resultant fall in GPL will further help achieve price stability when needed. [Advantage of using exchange rate policy] Tackles the root cause of inflation which SG is susceptible to due to out characteristic of being an small and open economy which is dependent on imports for raw materials→ very effective
Anti-thesis: Exchange rate policy may NOT be the best way the SG govt can adopt to address consequences of globalisation.
Anti-thesis 1: Limitations of exchange rate policy: • However, a significant appreciation of the exchange rate tends to erode the price competitiveness of the exports and worsen the current account balance. • Strong economic growth→ strong consumer and investor confidence→ fall in X-M may be offset by rises in C and I→ small reduction in AD and DD-pull inflation • M-L condition may not hold in the short run as it takes time to change consumers' taste and preferences and producers may be bound by contracts→ appreciation will lead to an increase in (X-M) and AD instead in the SR and is hence less able to moderate excessive increases in AD and DD-pull inflation. • Exchange rate policy does not tackle other consequences of globalization: Although exchange rate policy can address inflation, there are other consequences that it cannot effectively address such as structural UE. Other policies such as SS-side policies may be required.

Anti-thesis 2: Other policies are more appropriate- Use of expansionary policy is effective in reducing the vulnerability of external shocks. (e.g. Singapore's Resilience package 2009)

- To reduce the vulnerability to an external shock such as global recession, expansionary fiscal policy could be adopted to achieve actual growth where necessary to reduce the negative impact on economic growth and employment.
- (+) Unlike exchange rate policy, fiscal policy does not directly impact the export competitiveness, although it may have a conflict with inflation if near or at full employment.
- (-) However, effectiveness of fiscal policy depends on multiplier size and size of domestic demand. In Singapore, the multiplier size tends to be small due to high marginal propensity to save and import. A given injection into the economy will lead to a smaller proportion of income remaining in the inner flow to generate further increases in national income. Hence the multiplied increase in national income due to a fiscal stimulus is likely to be small. Also Singapore's domestic demand is small relative to external demand, hence changes in Cd and G as a result of fiscal policy will have a limited impact on AD.

Other polices are more appropriate- Use of supply side policies is effective in reducing structural unemployment (e.g. Skillsfuture, education/retraining)

- Subsidies on education and retraining of workers to increase labour mobility→ provide workers with relevant skills to enter expanding markets→ increase supply of skilled labour→ reduces structural UE
- Instead of encouraging reliance on the government for financial assistance for low income earners, policy measures that help workers to upgrade their skills and the Workfare Income Supplement scheme could be adopted to provide incentives for workers to remain employed and acquire better skills that enable them to earn more.
- (+) Addresses other consequences of globalization that exchange rate policy does not. Addresses the root cause of the issue → effective
- (+) Does not create a conflict with other macro goals. Improvement in quality of labour leads to an increase in productive capacity and LRAS shift rightwards→ sustained non-inflationary growth.
- (-) Long term: Takes time to for training and education to take effect → not useful as it is a long term policy, may need a short term solution.

Conclusion:

- **[SG govt's priority + time period]** SG govt **prioritises** price stability as it impacts our export competitiveness which is important for a small and open economy that reliant on trade. Thus, the use of exchange policy is the best policy to achieve this in the **SR**. In the **LR**, to achieve price stability without conflicts with other macro goals, the best way would be to consider supply side policies instead.
- **[Alternative: Current Problems in SG]** In SG, the current concern is that of slowing growth due to trade partners experiencing slow growth. **However, as this is not a serious problem yet**, the govt may want to focus on LT policies to achieve growth such as supply-side policies. This is to ensure the avoidance of conflicts with other macro goals as well as to achieve potential growth which may have dd-side impacts such as attracting FDI as well as gaining export competitiveness.

Level	Knowledge, Comprehension, Application and Analysis	Marks
L3	For an answer that uses **<u>appropriate analysis</u>** to support the discussion to explain the reasons why exchange rate policy is the best way and are set within the Singapore context.	8-10 (9)
L2	For an answer that gives a **<u>descriptive explanation</u>** of discussion of reasons why exchange rate policy is the best way. OR a one sided argument that only supports the use of exchange rate policy or other policies.	5-7 (6)
L1	For an answer that shows some **<u>knowledge</u>** of reasons for/against the use of exchange rate policy	1-4
	Evaluation	
E3	For an answer that arrives at an analytically well-reasoned judgement about whether exchange rate policy is the best way. .	4-5
E2	For an answer that makes some attempt at a judgement	2-3
E1	Mainly unexplained evaluative statement(s)	1