

**SERANGOON JUNIOR COLLEGE**  
**JC2 Preliminary Examination 2015**  
**H2 Economics 9732 Paper 2**  
**Suggested Answers**

- 1 Cheaper smartphones with built-in cameras, a proliferation of mobile applications that allow photos to be shared instantly on social media and technological advancements in the production of digital cameras are affecting the digital camera and related industries.

Discuss the impact of these developments on the sales revenue of digital camera and photo print producers. [25]

### Introduction

- Briefly state how equilibrium price and quantity are determined in a free market via interaction of downward sloping demand curve and upward sloping supply curve.
- Definition:** Total revenue of producers is calculated by multiplying the price by the quantity sold in the free market.
- Direction:** The introduction of smartphones with their built in cameras have been causing creative destruction to many industries. As a growing number of consumers finding it much easier to use their smartphones to capture and share images, versus using their dedicated digital cameras for the same purpose, producers of digital cameras and related industries are likely to see a big hit to their revenue. The extent of the impact would however depend on several factors which will be examined in this essay.

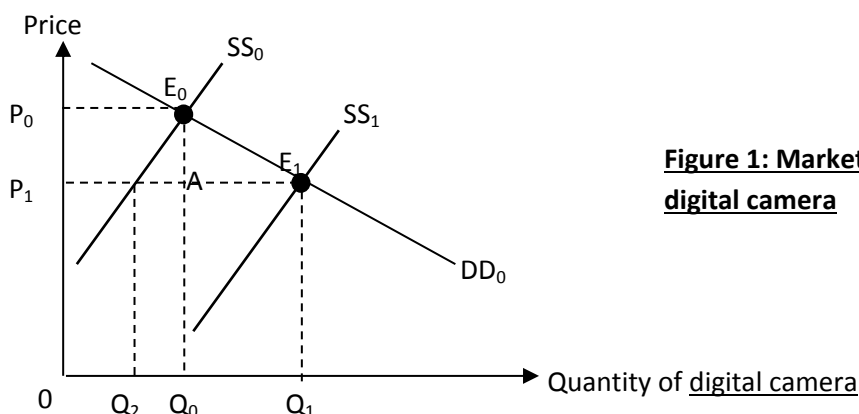
### Body

**P1: A technological advancement can lead to an increase in supply of digital cameras and an increase in total revenue for the digital camera producers.**

**E/E:**

The technological advancement could have lead to an improvement in production processes, lowering the cost of production → increase willingness and ability of producers to produce at each and every price level → rise in the supply of digital cameras → represented by a rightward shift of supply curve from  $S_0$  to  $S_1$ .

A rise in supply of digital cameras would lead to surplus of  $Q_1Q_2$  at original price  $OP_0$  → producers would reduce price to clear excess stock → as price falls, quantity demanded rises while quantity supplied falls → price keeps on falling until surplus is eliminated → at the new equilibrium point, there is a fall in equilibrium price (from  $P_0$  to  $P_1$ ) and rise in equilibrium quantity (from  $Q_0$  to  $Q_1$ ) of digital cameras.



**Figure 1: Market for digital camera**

Demand for digital camera is likely to be price elastic  $\rightarrow$  availability of close substitutes such as smart phones with camera functions + digital cameras are not needed for survival, more of a luxury good for most people than a necessity  $\rightarrow$  fall in price of digital cameras would lead to a more than proportionate rise in quantity demanded, *ceteris paribus*  $\rightarrow$  hence, rise in total revenue due to the more than proportionate increase in quantity demanded, i.e. area  $AE_1Q_1Q_0$ , is greater than the fall in total revenue that's due to the fall in price, i.e. area  $P_0E_0AP_1$ .

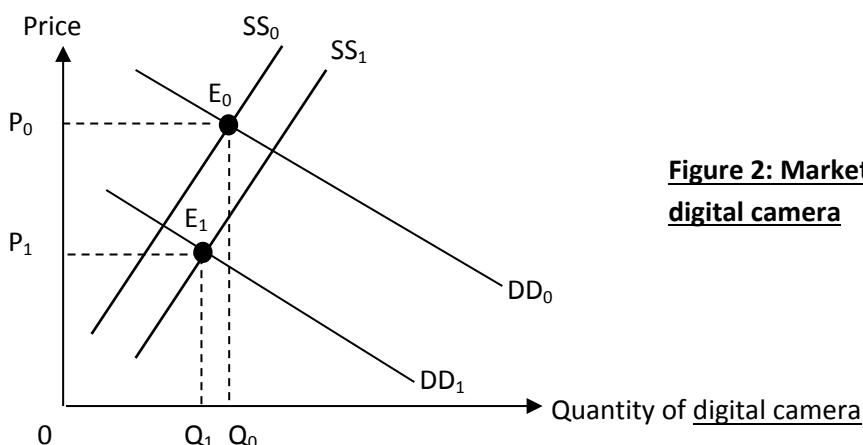
**P2: The cheaper smart phones coupled with a proliferation of mobile applications will result in a fall in demand for digital cameras.**

**E/E:**

Given that almost all, if not all smart phones are equipped with cameras, the smart phone can be a substitute for digital cameras. Both can be used to satisfy our wants to take photos. The lower prices of smart phones will increase the quantity demanded for smart phones and reduce the demand for digital cameras, giving a positive cross elasticity of demand between the price of smart phone and demand of digital cameras.

In addition, the proliferation of mobile applications that allow photos to be shared instantly on social media such as facebook and twitter increases the convenience for consumers to share the photos instantly, without having to upload them to a personal computer and process them first  $\rightarrow$  result in a change in their taste and preference away from digital cameras  $\rightarrow$  consumers less willing to buy digital cameras despite the ability to do so  $\rightarrow$  fall in demand for digital cameras  $\rightarrow$  represented by a leftward shift of demand curve from  $D_0$  to  $D_1$ .

**P3: Combining the fall in the demand for and the rise in the supply of digital cameras, total revenue on this product is indeterminate as it depends on the extent of the change in demand and supply.**



**Figure 2: Market for digital camera**

**E/E:**

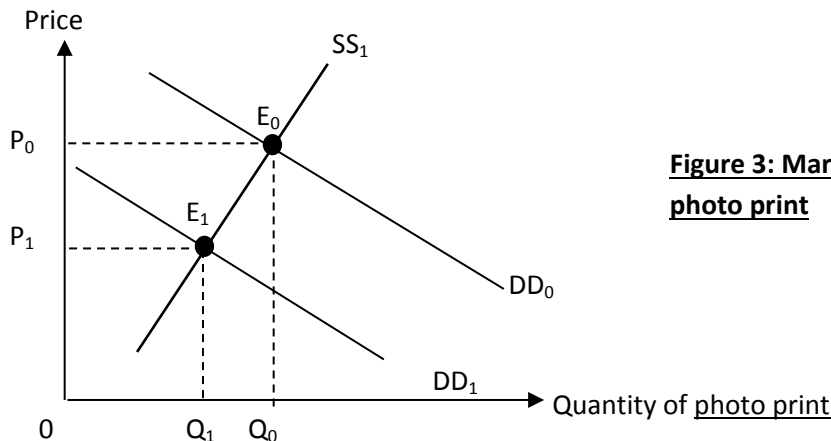
Given that the quality of the photos taken by smartphones is close to the quality of photos taken with a low to mid range point and shoot digital camera, smartphones and digital cameras are likely close substitutes. The high XED value would mean that the fall in price of smartphones will result in a more than proportionate fall in demand for digital cameras especially for the low end point and shoot digital cameras. Together with the change in taste

and preference, the fall in demand is likely going a much greater extent than the rise in supply as shown in Figure 2 → leftward shift of demand curve by a larger extent relative to rightward shift of supply curve → surplus at original price exerts downward pressure on the price of digital cameras → fall in equilibrium price and equilibrium quantity of digital cameras → Since equilibrium price falls from  $0P_0$  to  $0P_1$  and equilibrium quantity falls from  $0Q_0$  to  $0Q_1$  → overall, fall in total revenue of digital cameras from Area  $0P_0E_0Q_0$  to Area  $0P_1E_1Q_1$

**Evaluation: Extent of fall in demand relative to supply and thus the fall in TR depends on**

- Type of digital camera → lower impact on the high-end digital cameras e.g. digital single-lens reflex (DSLR) cameras targeted at professionals and enthusiasts as these cameras. These cameras offer a level of control and picture quality that a smartphone's tiny lens and sensor can't replicate, making the smartphone a weak substitute → low XED value → smaller fall in TR.
- Whether the digital camera producers can increase the connectivity options in compact digital cameras. If the cameras becomes equally capable of uploading images directly to photo sharing and social media, due to the inclusion of Wi-Fi in digital camera → smaller fall in demand and TR
- Whether the digital camera producers are also producing the camera parts for smartphones. E.g. Sony, a digital camera producer, supply image sensors for smartphones and was increasing the production capacity for these image sensors → the increased in revenue here can make up for the fall in revenue from the sales of digital cameras.

**P4: A fall in price of digital cameras that was due to the technological advancement would lead to a fall in total revenue on photo print.**



**Figure 3: Market for photo print**

**E/E:**

A fall in price of digital cameras → rise in quantity demanded for digital cameras, ceteris paribus → since digital cameras and photo print are considered as complements as they are used jointly to satisfy a particular want (to have physical copies of the photos) → fall in demand for photo print from  $DD_0$  to  $DD_1$  as shown in Figure 3 (negative XED) → Since equilibrium price falls from  $0P_0$  to  $0P_1$  and equilibrium quantity falls from  $0Q_0$  to  $0Q_1$  → overall, fall in total revenue of photo print producers from Area  $0P_0E_0Q_0$  to Area  $0P_1E_1Q_1$

**Evaluation:**

- the trend towards keeping photos in the digital format for easier storage instead of developing the photos → weak complements → low XED value → less than proportionate fall in demand and thus small fall in TR of producers of photo print

- Also, smartphone's built in camera and photo print are also complements. The fall in price of smartphones can thus increase the photos taken and thus increase the demand for photo print. The closeness of relationship between smartphone and photo print is likely to be comparable to that between digital camera and photo print. Thus the TR of photo print producers might not fall but rise with the strong demand for smartphones. That however depends on how the photo print producers prove to be strong complements for phototaking via smartphones e.g. via online photoprint with delivery services, customised photo finishing services etc
- However, it is worth-noting that even if sales revenue from the digital print segment increases, sales revenue from the film photography segment will fall. Digital camera and smartphones' built in camera are substitutes to analogy film camera and more consumers taking and storing photos in digital format → reduce demand for analog cameras and film → photo print producers such as Kodak might still suffer a loss in TR.

### Level Marking Scheme

Level	Descriptors
Higher Level 3	<ul style="list-style-type: none"> <li>• Well-explained diagrams with thorough and accurate analysis</li> <li>• Clearly explained combined impact on total revenue of digital camera with <b>simultaneous shift diagram</b></li> <li>• Explained impact on both digital camera and photo print producers</li> <li>• Accurate applications of <b>XED and PED</b> concepts</li> <li>• Good evaluation and consideration of other possibilities</li> </ul>
Lower Level 3	<ul style="list-style-type: none"> <li>• Well-explained diagrams largely accurate and sufficient analysis</li> <li>• Explained impact on both digital camera and photo print producers</li> <li>• Consider only XED or PED only or both but lacks depth</li> <li>• Must consider combined impact on the producers of digital camera and photo print</li> <li>• Some evaluation of the other possibilities</li> </ul>
Level 2	<ul style="list-style-type: none"> <li>• Diagrams which may not be consistently explained</li> <li>• Sufficient applications of at least 1 elasticity concept</li> <li>• Some reference to correct endpoint on revenue but may not be always focused</li> <li>• A detailed answer on digital camera producers and a descriptive answer on photo print producers</li> <li>• Only shift DD OR SS → maximum L2</li> </ul>
Level 1	<ul style="list-style-type: none"> <li>• Diagrams but no clear explanation</li> <li>• Did not focus on correct endpoint on total revenue</li> <li>• Did not use elasticities concept</li> </ul>

### Personal Judgement

Level	Descriptors
E2	<ul style="list-style-type: none"> <li>• Make a well-reasoned judgement on the final impact on revenue of the producers e.g. the 1-2 key factors that weigh heavily on the extent of impact.</li> </ul>
E1	<ul style="list-style-type: none"> <li>• Make a judgement on the final impact on revenue of the producers. For e.g. how digital camera producers are likely to be badly hit by the emergence of smartphones with some supporting reasons</li> </ul>
E0	<ul style="list-style-type: none"> <li>• No attempt to make a judgement.</li> </ul>

- 2 (a) Explain the considerations of a firm when making pricing and output decisions. [10]
- (b) With the use of relevant examples, examine the extent to which industries in Singapore are dominated by a few large firms. [15]

## Part A

### Introduction

Pricing and output are important decisions of a firm as it determines the profitability and survivability of the firm. The considerations of a firm when making these decisions really depend on several factors, beginning with the objective of the firm.

### **P1: One of the considerations when making pricing and output decision is the objective of the firm**

- The common assumption is that most firms aim to maximise profit. Sometimes, a firm may be willing to forego profit maximisation objective because it does not serve its interests in the short run. Firms might choose to maximise other objectives e.g. to maximise sales revenue instead
  - Firms might want to maximise sales revenue in order to increase market share and thus market power. Also, banks and financial institutions are more willing to lend to firms with large and growing sales.
  - If sales revenue maximisation is the objective → the firm owner would consider setting a price and selling an output where marginal revenue equals to zero
- If however, the objective of the firm is assumed to be profit maximisation → firm will determine pricing and output based on the profit maximising condition of  $MC = MR$  where MC is rising.

### **P2: Assuming the firm owner aims to maximise profits, they will produce where $MC=MR$ when MC is rising.**

In the following analysis, it is assumed that the firm is a perfectly competitive one. This means that it is a price taker and hence, its demand curve is also its MR curve.

- **When MR is more than MC ( $0Q_1$  in Fig. 1),** the firm should increase output to maximise profit.
  - If MR is more than MC, this means that the addition to total revenue from the sale of the last unit of output is greater than the additional cost incurred to produce it. Hence, the firm should produce that unit of output because it results in an increase in the firm's profit.
- **When MR is less than MC ( $0Q_2$ ),** the firm should decrease output to maximise profits.
  - When MR is less than MC, this means that the revenue earned from the sale of the last unit of output is less than the additional cost incurred to produce it. Hence, it is not worthwhile for the firm to produce that unit because it will only result in a fall in total profit.
- The firm will maximise profits when MC is equal to MR **where MC is rising.**
  - At  $0Q$ , MC curve cuts the MR line on the falling portion of the MC curve (point A). Thus  $0Q$  is not the profit maximising level of output. If the firm were to increase production beyond  $0Q$ , for each additional unit of output beyond  $0Q$  (up to  $0Q_e$ ) marginal revenue exceeds the marginal cost. Thus, the firm should increase production to earn more profit. However, once the firm reaches output level  $0Q_e$ , any further increase in output means MC is more than MR. Thus, firm's profit will fall. So to maximise its profit, the firm should produce at  $0Q_e$ .

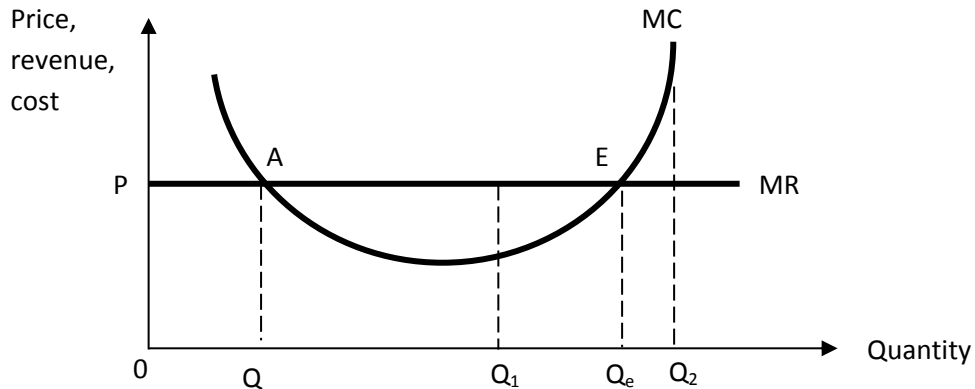
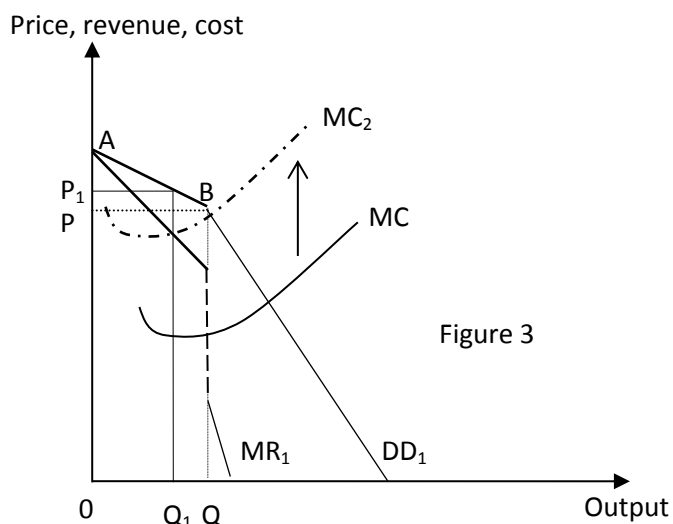


Fig 1: Profit Maximising Conditions of a (perfectly competitive) Firm

**P3: Another objective is the type of market structure and competition that it faces**

- If the firm is an oligopolistic firm, the firm owner needs to consider if it is able to collude with the others or it has to compete. A collusion would mean that the pricing and output of the firm would have to be aligned with the agreed decision of the collusive oligopoly.
- On the other hand, in a non-collusive oligopoly, mutual interdependence exist among firms and influences a firm's pricing strategy → The firm owner could therefore have to consider the reaction of competitors and likely would not change its price easily → price rigidity.
- As explained using kinked demand theory: The upper portion (AE) illustrates how when the firm increases its price, it will suffer a large fall in quantity demanded as its customers now purchase from other firms. Hence, its total revenue will fall. Thus, the firm will not increase its price. Conversely, when the firm lowers its price below P, its quantity demanded will not increase greatly. This is because other firms also lower their prices. Thus oligopolists may be reluctant to lower their prices. The profit-maximising firm will produce an output where  $MC=MR$ . This is output  $OQ$  and he will charge a price of  $OP$ .



- L: So, each firm must consider the reactions of its competitors when formulating its pricing decision.

L3	<ul style="list-style-type: none"> <li>Clearly explained at least 2 considerations, including the profit maximising condition</li> <li>Clearly explained how a firm determine profit maximising output leading to the considerations of the firm when trying to set price and output to maximise profits</li> </ul>
L2	<ul style="list-style-type: none"> <li>Explained at least 2 considerations</li> </ul>
L1	<ul style="list-style-type: none"> <li>Smattering of points</li> <li>Stating of many considerations without elaboration</li> </ul>

### Part (b)

With the use of relevant examples, examine the extent to which industries in Singapore are dominated by a few large firms. [15]

#### Introduction

- Definition:** Industries dominated by a few large firms are characterised by the Oligopoly market structure. The few large firms account for a large proportion of the market share and each have a high level of market power. Such a characteristic enables the firms to gain revenue and cost advantages which allows them to maintain a high level of supernormal profits.
- Direction:** Industries in Singapore are varied. While some are dominated by a few large firms, there are also many that are dominated by many small firms.

#### Body

**P1:** Industries in Singapore such as the Telecommunication, Media/Newspaper and Pay TV industries are dominated by a few large firms due to the presence of economic BTEs such as substantial economies of scale

#### E/E:

- In industries where the initial capital investment is large and/or technology is complex, such as the industries mentioned above, economies can only be enjoyed over a large range of output level.
- For example, in the Telecommunication and the Pay TV industries, they require the use of large scale and advanced equipment such as the laying of cables and the use of satellite. They might also need to incur huge cost in securing exclusive rights to TV content and hiring of a large pool of talents. In the media and newspaper industry, large and complex printing and filming equipment have to be employed.
- These factors contribute to the high fixed cost incurred by firms in the industry. This means that the firms' minimum efficient scale (MES) of production can only occur at a high output level. Hence, only large firms can achieve lower average cost and operate under decreasing cost conditions because of their large output level.
- Thus, production has to be on a very large scale for the firm to be operating efficiently and the industry may be better off with a few large firms, reaping economies of scale, than with many firms supplying the same good but at a higher average cost.

**P2:** Some industries such as the firms in the petrochemical industries are also dominated by a few large firms because of the control of essential raw materials and heavy spending on R&D

#### E/E:

- The Petrochemical industry in Singapore is also dominated by a few large firms such as Esso, Caltex, Shell and SPC because of the presence of economic BTE such as exclusive control of essential raw materials.

- These companies own oil fields around the world which give them exclusive access to the raw material (ie. crude oil), the raw material to produce petroleum. This coupled with the high cost of setting up and operating the oil refineries due to the complex equipment and technology also explains why the petrochemical industries are dominated by a few firm firms in Singapore and also globally. In addition, petrochemical industries also carry out a substantial amount of R&D to improve the quality of their petroleum (ie Caltex Techron, Shell V-power) as well as the production processes to reduce unit cost.
- This makes the existing firms more competitive in the market and gives them a structural advantage over potential rival firms.

#### **Evaluation:**

- Economic BTE faced by entrants may not necessarily be permanent due to the dynamic nature of an economy. The lure of huge supernormal profits that can be reaped by these Oligopoly firms acts as a driving force to motivate potential entrants to innovate and create products that can surpass the BTE and enter the industry.
- Rapid technological advancement in telecommunications has also enabled consumers to enjoy programmes online. Potential entrants can tap on this technology and expand into the cyberspace and raise the contestability of markets. This will significantly lower the demand for existing firms and reduce market dominance since firms in the industry are constantly subjected to threats of entry by new firms.

**P3: There are other reasons such as the presence of institutional BTEs which explains the existence of a few large firms in the transport industry**

#### **E/E:**

- The degree of government regulation also determines the level of contestability in the market. For example in the transport industry, the Singapore government is seeking to introduce more licences into the bus industry to improve efficiency, promote innovation and provide consumer with more choices. This will prevent firms from being lax and complacent, reduce cost of production and improve service standards.
- Under the new transport plan announced in June 2015, LTA will gradually carve up bus routes here into 12 packages, with about 300 to 500 buses for each area. For a start, it will tender out three packages of bus services. SBS Transit and SMRT will run the remaining nine packages, which comprise about 80 per cent of existing buses. In the long term, the plan is to have three to five operators running buses here to promote greater competition and efficiency.
- Commercial banks in Singapore are also licensed under and governed by the [Banking Act](#). In Singapore, MAS issues licenses for banks to operate here. In 1998, POSB was acquired by DBS, as the Singapore Government sought to allow the commercial institution to garner sufficient economies to scale to be a competitor to foreign banks. The merger of the two local banks allowed them to exploit more EOS and increase market share to gain cost and revenue advantages. Consumers were able to enjoy lower prices and better products as a result of the reduction in competition. This also resulted in the banks becoming more competitive to be able to cope with foreign competition when they were introduced into Singapore.

#### **Evaluation**

- It is important to note that the government has adopted a significant amount of deregulation in the financial industry today. Singapore is now home to over 200 banks as part of our aim to establish Singapore as an international financial centre.



**P4: While a large no of industries in Singapore are dominated by a few large firms, there are also many that are characterised by many small sellers when product differentiation is key.**

**E/E:**

- In industries such as the bakeries, hair salon and restaurants, consumers prefer a wide range of products to choose from that can increase consumer welfare.
- With more competition, consumers benefit from both the price competition among the firms, (ie. lower prices) and non-price competition (ie. real product differentiation) such as enjoying a greater variety and range of bread and dishes, better customer service and personalised services.
- Coupled with the presence of low institutional and economic barriers to entry, the easy entrance of new firms into the industry when the existing firms are earning supernormal profits is a reason why such industries are characterised by many small firms.

### **Mark Scheme**

Knowledge, Application, Understanding and Analysis		
L3	<ul style="list-style-type: none"><li>• Thorough discussion on the characteristics of the firms operating in the industries in Singapore and explanation of the reasons behind their existence.</li><li>• Good discussion of the characteristics/conditions of the Singapore economy that results in the industries operating in the relevant market structure.</li><li>• Good examples to support your observation.</li></ul>	
L2	<ul style="list-style-type: none"><li>• For an attempt to explain characteristics of the firms operating in the industries in Singapore but is undeveloped or lacking in detailed analysis.</li></ul>	
L1	<ul style="list-style-type: none"><li>• Smattering of points with little understanding of the question requirement.</li></ul>	
Personal Judgement		
E2	For an evaluative assessment based on economic analysis and understanding of the conditions and characteristics in the Singapore economy. A sound judgement made in the conclusion.	
E1	For an unexplained judgement, or one that is not supported by analysis.	

- 3 In 2012, the British government issued licenses for Virgin Atlantic Airlines to start short-haul domestic flights within the UK to challenge the current monopoly enjoyed by British Airways on these routes. This raised concerns that with more landing and take-off, local air quality will be degraded.

- (a) Explain the two sources of market failure mentioned above. [10]
- (b) The potential benefits of removing market failure can never outweigh the costs of government failure. Discuss. [15]

### Introduction

- **Definition:** Market failure refers to a situation where resource allocation concerning what, how, how much and for whom to produce based on the market mechanism fails to achieve efficiency in resource allocation and equity among various income groups.
- **Direction:** The two sources of market failure above refer to the market dominance that arises from the monopoly power enjoyed by British Airways before the entrance of Virgin Airlines and the presence of negative externalities due to more landing and take-off which degrades the air quality. Both of which leads to allocative inefficiency and hence market failure.

### Body

#### P1: Presence of market dominance due to the monopoly power enjoyed by British Airways leads to allocative inefficiency.

- Allocative efficiency is attained when society produces the right amount of goods and services from society's point of view and hence society's welfare is maximised. This situation is attained when all firms produce an output level where  $P=MC$  for the last unit of output produced.
- Firms like British Airways who possesses monopoly power on the short-haul domestic flights in the UK have some degree of market power and there is a divergence between AR and MR.
- With reference to Fig 1, the socially optimum price and output are  $0P_c$  and  $0Q_c$  respectively where  $P=MC$  as in a perfect competition where  $AR=MR=P=MC$ . This means that the value the society places on last unit of output produced is exactly equal to the opportunity cost incurred by the society in having that last unit.
- When the output level is  $0Q_c$ , the total benefit to the society is measured by the area  $0AE_cQ_c$  while the total cost is area  $0XE_cQ_c$ . Thus total net benefit to society is area  $AE_cX$ .

Price, Revenue, Cost

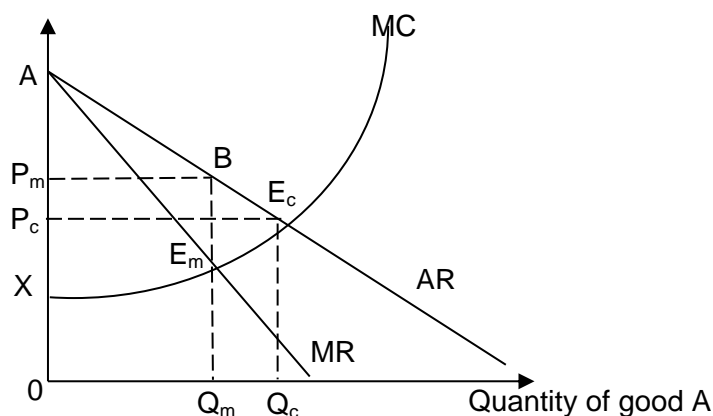
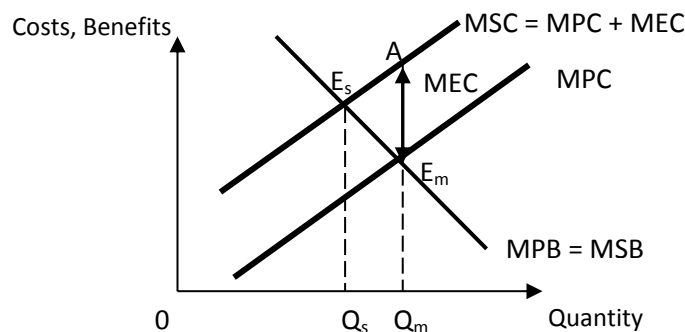


Figure 1:

- However, given the presence of his monopoly power and its profit-maximising motive, British Airways will want to restrict output and produce where  $MR = MC$  where  $MC$  is rising.
- At output,  $0Q_m$ , the price charged by the firm is greater than his marginal cost of production ( $P > MC$ ). This means that society values the last unit of this good **more** than the alternative goods forgone (i.e. opportunity cost). Therefore, society would benefit from having more of this good.
- The market power a monopolist possesses allows it to restrict output to  $0Q_m$  and charge a higher price of  $0P_m$ . The total benefit is area  $0ABQ_m$  but the total cost is area  $0XE_mQ_m$ . Hence the total net benefit to society falls to area  $ABE_mX$ .
- Hence, when the profit maximizing monopolist charges a price that is greater than  $MC$ , there is a deadweight loss to society of area  $BE_cE_m$ .

**P2: The other source of market failure is the presence of negative externalities in the over-production of air travel**

- Negative externalities refer to costs to third parties who are not directly involved in the production or consumption of a good or service and these third parties are not compensated for the damages inflicted on them.
- In a free market without government, a producer pursuing his self-interest of making the highest possible level of total profits takes into account only his own private costs. Private costs are costs that the producer must pay in undertaking production.
- MPB of air travel is the profits that can be earned by British Airways,
- MPC of air travel is the cost of production, such as the cost of the aircraft, the fuel cost, wages of hiring the pilots and aircrew, airport taxes etc.
- However, with “more landing and take-off, local air quality will be degraded”, this gives rise to the third party cost or MEC. The residents staying near the airport will inhale the polluted air and suffer respiratory problems and hence have to incur medical fees.
- The presence of this MEC leads to a divergence between MPC and MSC.
- Because individuals only consider their own private benefits & costs, the market eqm level of output is where  $MPB = MPC$  at  $Q_m$ .
- However, the social optimum level of output occurs where  $MSB = MSC$  at  $Q_s$ , where benefit to society from last unit of gd consumed = opportunity cost incurred.
- Since  $Q_m > Q_s$ , there is overproduction of air travel.
- For every additional unit of air travel consumed between  $Q_s$  and  $Q_m$ , it adds more to  $MSC$  than to  $MSB$ . Hence, there is a net loss of society's welfare = deadweight loss = area  $AE_mE_s$ .



**Mark Scheme**

Knowledge, Application, Understanding and Analysis	
L3	<ul style="list-style-type: none"> <li>Detailed explanation of BOTH sources of market failure with clear links to allocative inefficiency and productive inefficiency</li> <li>Good examples given with reference to the airline industry</li> </ul>
L2	<ul style="list-style-type: none"> <li>Undeveloped explanation of the two sources of market failure</li> </ul> OR <ul style="list-style-type: none"> <li>Explanation of only one allocative efficiency with no link to productive inefficiency</li> </ul>
L1	<ul style="list-style-type: none"> <li>For an answer that has a weak grasp of the concepts of market failure and allocative and productive efficiency.</li> <li>Many gaps in analysis</li> </ul>

- (b) The potential benefits of removing market failure can never outweigh the costs of government failure. Discuss. [15]

**Direction:**

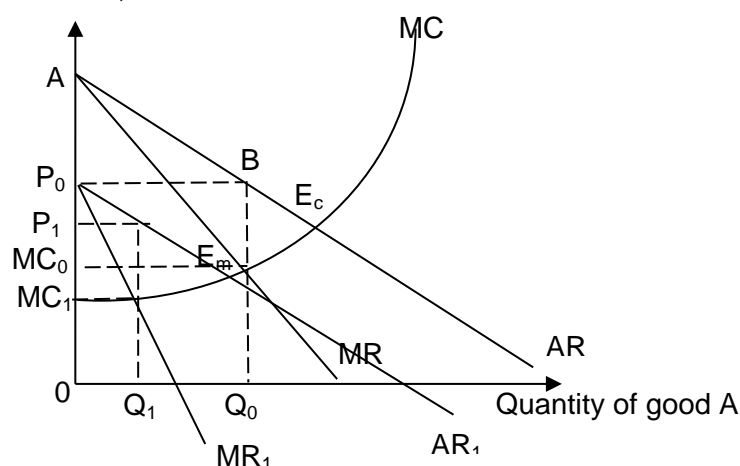
- In the event when there is market failure, government intervention is often deemed necessary to overcome the problem of inefficiency.
- However, in some circumstances, government intervention aimed at solving the problem causes more harm than good. This causes government failure.
- Under such circumstances, the benefits of implementing such policies to overcome the problem of market failure will not be able to outweigh the cost of government failure.

**P1: In the presence of monopoly power, the government can reduce allocative inefficiency and improve resource allocation by deregulating.**

**E/E1:**

- In the case of the airline industry, the government can introduce more competition by curbing monopoly power through deregulation and liberalisation of the market.
- For example, in the case of British Airways' monopoly of the UK short haul routes, the government introduced license for Virgin Airways to operate flights along the routes to break the monopoly power that British Airways has.
- With the entrance of a new player into the industry, British Airways will have a lower level of allocative inefficiency.
- With only one firm, at profit-maximising output  $Q_0$ , the degree of allocative inefficiency is greater where  $P_0 > MC_0$ .
- After the introduction of the license and the entrance of a new firm, Virgin Airways, British Airways will experience a fall in demand of its services. AR and MR falls to  $AR_1$  and  $MR_1$  respectively. At the new lower level of output  $Q_1$ , there is a smaller degree of allocative inefficiency, hence while allocative inefficiency still exist where  $P_1 > MC_1$ , it is at a lower degree as compared to  $P_0 > MC_0$ .

Price, Revenue, Cost



**Evaluation:**

- However, the government need to be mindful of the amount of deregulation and no of licenses to introduce into the market. Over regulation will lead to duplication of resources and wastage which brings more cost than benefits to the industry.
- For example, the introduction of too many licenses can open up the industry to too much competition. This will cause airlines to operative at excess capacity and lead to wastage of resources. This also means that firms enjoy less supernormal profit and enjoy less

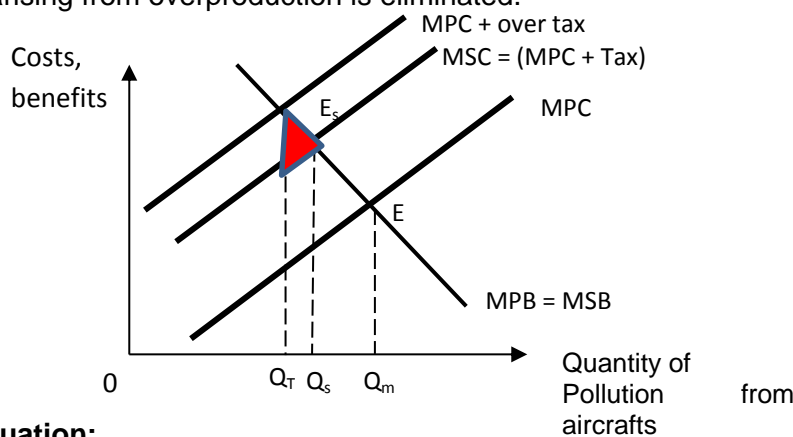
funds for R&D. In the long run, this can stifle dynamic efficiency and society is made worse off because of less innovation

- Hence government need to be mindful of the characteristics of the industry and the market conditions and the amount of information is necessary to ensure that the potential benefits of removing market failure will outweigh the costs of government failure

**P2: In the case of negative externalities that arises from the pollution from airlines, the government can also intervenes by imposing carbon taxes.**

**E/E2:**

- Government can impose a tax on production equal to MEC so as to force the airlines to internalise the external costs which would otherwise be ignored. This increases the firm's cost of production and reduces its ability to produce the same amount. The firms' MPC curve is shifted vertically upwards by the full amount of MEC. Hence, the new MPC ( $MPC + Tax$ ) now coincides with the MSC curve.
- As shown in the figure below, where the new MPC ( $MPC + Tax$ ) cuts MPB, production is reduced from  $Q_m$  to  $Q_s$ , which is the social optimum level of output. Hence, welfare loss arising from overproduction is eliminated.



**Evaluation:**

- However, the above argument is based on the fact that government has perfect information. In reality, governments suffer from imperfect information. For instance, in the case of negative externalities, the government needs to know what is the value of the marginal external cost in order to accord the right amount of tax. However, it is difficult to measure this value because of the external cost due to the presence of imperfect information. E.g. It is difficult to apportion blame to the respective producers in the same area for the pollution generated.
- If the value of MEC is overestimated, then the amount of tax is more than optimal ( $MPC + overtax$ ). Over-taxing goods with negative externalities will mean higher costs of production for airlines and underproduction at  $Q_T$  there is a DWL area = shaded area. Depending on the level of overtaxing, the DWL could be bigger than the DWL due to overproduction, affecting overall welfare loss. This can result in the airlines leaving the industry which could affect output and level of employment in the industry.

**P3: In the event of serious cases of market failure, the government can also take over the control of the production of the good completely to protect the interest of consumers.**

- Freed from the profit motive, there should be no tendency for the state-owned monopolies to make high supernormal profits leading to inequity in income distribution. If profits are made, these could be passed on to the public in the form of lower future prices or in the form of tax reliefs / rebates.

**Evaluation:**

- However, governments can also suffer from inefficiencies because of the absence of profit motive. In situations where governments may use state ownership e.g. to prevent market dominance, a greater problem of inefficiency may arise. This is because of the problems associated with bureaucracy and red tape that often plague the running of the state enterprises. Thus, more harm than good may result.
- State enterprises tend to suffer from a higher level of inefficiency in production as there is little incentive for efficiency and innovation as there is no profit motive. As a result, the government may create inefficiencies when it intervenes in the market. Hence, government failure can arise.

Knowledge, Application, Understanding and Analysis	
L3	<ul style="list-style-type: none"> <li>• Thorough explanation of the policies that address BOTH sources of market failure with good economic analysis.</li> <li>• Good examples given with reference to the airline industry.</li> <li>• An explicit discussion on the case of whether the potential benefits outweigh the cost of intervention.</li> </ul>
L2	<ul style="list-style-type: none"> <li>• For an attempt to explain the policies to address BOTH sources of market failure but is undeveloped or lacking in detailed analysis.</li> </ul> <p>OR</p> <ul style="list-style-type: none"> <li>• For an answer that thoroughly explains the policies pertaining to only ONE source of market failure. – Max 8m</li> </ul>
L1	<ul style="list-style-type: none"> <li>• Some explanation of the policies to address the sources of market failure but lacking in rigour.</li> <li>• Smattering of points.</li> </ul>

Personal Judgement	
E2	<ul style="list-style-type: none"> <li>• For an evaluative assessment based on economic analysis on whether the potential benefits of removing market failure outweighs the cost of market failure for all the policies highlighted.</li> <li>• Sound judgement made in the conclusion.</li> </ul>
E1	For an unexplained judgement, or one that is not supported by analysis.

- 4 Consumer price inflation in Singapore averaged 4.2% during 2010-2012 due to falling labour productivity, rising housing as well as Certificate of Entitlement (COE) prices. Extremely low interest rates coupled with stronger economic conditions globally have also led to private debt-to-GDP ratio in Emerging Asia rising from 97% in 2008 to 122% in 2012.

Adapted from <http://www.mas.gov.sg>, accessed July 2015

- (a) Explain whether internal or external factors are the main cause of inflation in Singapore. [10]
- (b) Discuss whether price stability should be the top priority for an economy. [15]

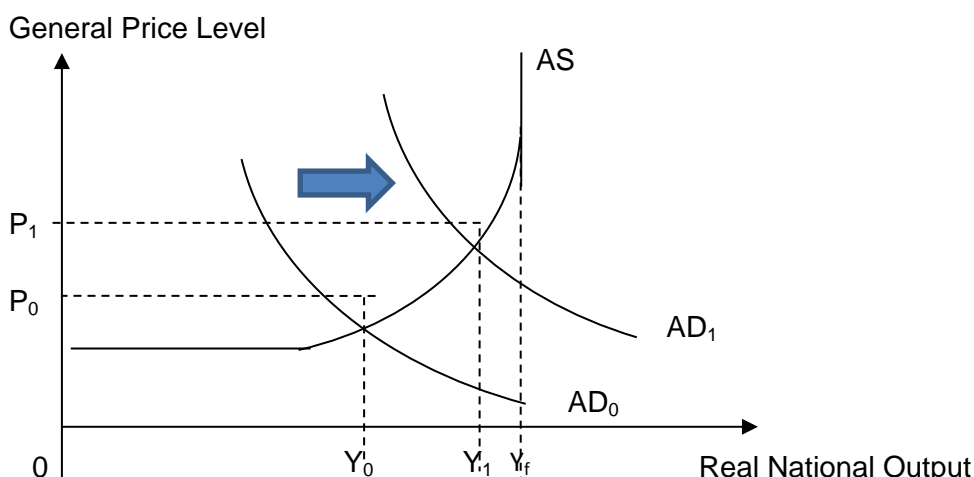
### Introduction

- State possible types of inflation in Singapore: Demand pull inflation due to rising AD and cost-push inflation due to falling AS.
- Direction of essay:** This essay aims to explain both the domestic (internal) and external factors which contribute significantly to the persistent rise in general price level of final goods and services in Singapore and consider which factors are more prevalent in causing the persistent rise in prices.

### Body:

**P1: One of the external factors causing demand-pull inflation in Singapore is rising affluence of trading partners.**

**E&E1:** Rising affluence of trading partners such as China means there is a rise in real national income of such countries. This will lead to a rise in their purchasing power. Singapore will experience a rise in demand for her exports from these countries. This leads to a rise in Singapore's total export revenue. Assuming total expenditure on imports constant, there is a rise in  $(X-M)$ . Thus, there is a rise in aggregate demand shown by a rightward shift of AD curve from  $AD_0$  to  $AD_1$ . Assuming the country is operating near full employment, there will be a shortage of final goods and services which exerts upward pressure on GPL. GPL continues to rise until shortage is eliminated. The persistent increase in the general price level services from  $P_0$  to  $P_1$  depicts demand-pull inflation.

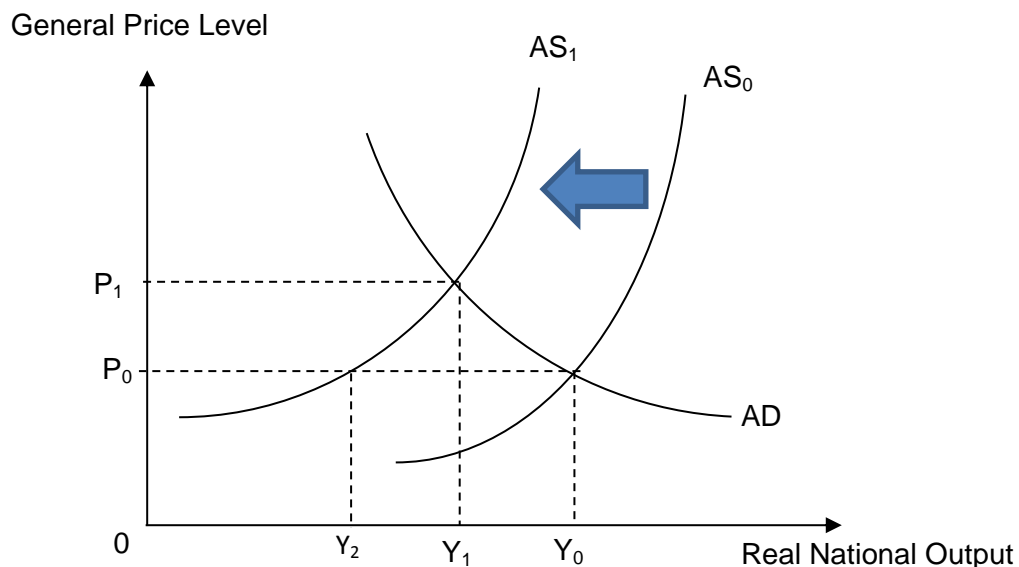


**Figure 1: Demand-pull inflation arising from external factor**



**P2: Singapore's higher inflation could also be due to falling labour productivity which is considered an internal factor.**

**E&E2:** In Singapore, due to influx of low-skilled foreign workers, there is a fall in labour productivity. This leads to a rise in unit cost of production. Profit-maximizing firms will reduce their SRAS, represented by a leftward shift of SRAS curve from  $SRAS_0$  to  $SRAS_1$ . Shortage of  $Y_0Y_2$  at original GPL  $P_0$  will exert upward pressure on GPL as explained earlier. Thus, resulting in persistent rise in general price level of goods and services which means there is cost-push inflation.



**Figure 2: Cost-push inflation arising from domestic factor**

**P3: Another internal factor that caused cost-push inflation in Singapore is rising COE prices.**

**E&E3:** Rising COE prices whereby private transport users have to pay a higher price for the certificate to allow them to drive their private vehicles on the roads. This applies to firms which use their vehicles as capital goods to transport final goods and services which means it contributes to a rise in transportation costs. A higher cost of production, assuming revenue constant, will lead to lower profits. Producers will reduce SRAS. Thus, the persistent rise in general price level of goods and services causes cost-push inflation.

**Main factor:**

It is highly likely external factors such as rising affluence of trade partner to be the main cause of demand-pull inflation in Singapore because she is heavily reliant on external demand given her small domestic demand. Thus, net exports take up a relatively large proportion (32%) of Singapore's GDP. Any rise in  $(X-M)$  will have a significant impact on Singapore's AD which in turn will have a significant impact on the rise in her GPL.

**Marking scheme**

Level	Descriptors
3	<ul style="list-style-type: none"> <li>Thorough explanation of at least <b><u>one</u></b> domestic and <b><u>one</u></b> external factors causing demand-pull and cost-push inflation in Singapore</li> <li>Usage of relevant examples to integrate into analysis to explain the main factors causing inflation in Singapore.</li> </ul>
2	<ul style="list-style-type: none"> <li>Adequate explanation of how domestic and/or external factors cause</li> </ul>

	<p>demand-pull and cost-push inflation in Singapore</p> <ul style="list-style-type: none"> <li>• May / may not use relevant examples to support analysis.</li> <li>• Some gaps evident in some of the analysis.</li> <li>• Some conceptual error/s may be evident.</li> <li>• Explanation of one type of inflation only</li> </ul>
1	<ul style="list-style-type: none"> <li>• Smattering of ideas.</li> <li>• Listing rather than explanation of how demand-pull and cost-push inflation arise.</li> <li>• Substantial conceptual errors.</li> <li>• Generally weak answer. Limited application of economic analysis.</li> </ul>

(b) Discuss whether price stability should be the top priority for an economy. [15]

### Introduction

- Every government has four macroeconomic objectives that it seeks to achieve, i.e. sustained economic growth, low unemployment, low inflation and a healthy balance of payments.
- Clarify the term price stability: Rising general price level of final goods and services at a moderate rate.
- **Direction of the essay:** This essay aims to explain why price stability is given more importance and to explain other situations whereby other goal/s should be the top priority.

### Body

**P1: For small and open economies such as Singapore, the government should make achieving price stability as the top priority.**

#### **E&E1:**

**Given the conditions** in the Singapore economy such as its **characteristics** as mentioned, it is very dependent on **external demand (net exports and FDI)**. Hence it should focus on price stability in the short run.

- **E/E1(a): External Benefit – Improvement in balance of payments [EITHER]**  
 Given Singapore's nature of being a small economy, she is heavily dependent on external demand in terms of net exports and FDI to propel her employment and economic growth.  
 Price stability will ensure Singapore's exports remain competitively priced which will generate greater external demand since Singapore's exports are relatively cheaper compared to other countries. At the same time, imports will be relatively more expensive, reducing demand for imports. This leads to a  $\uparrow TR_x + \downarrow T_{em}$  and in turn a  $\uparrow \text{net } (X-M)$  which helps to improve current account.  
 In addition, price stability means future projections of costs and revenue can be made more accurately. This can help to improve a country's attractiveness as an FDI location. So investors will move their funds into Singapore from other countries. Improvement in capital account.  
 Overall, there will be improvement in BOP. As such, price stability is essential to ensure its export price competitiveness as well as its attractiveness as a FDI location.
- **E/E1(b): Internal Benefit – Economic growth and low unemployment [OR]**  
 During times whereby prices are stable, future projections of costs and revenue can be made more accurately. This can help to improve a country's attractiveness as an FDI location. A rise in investment expenditure results in an initial rise in income which

triggers further rise in induced consumption. There will be more than proportionate rise in AD relative to the rise in investment which **stimulates actual economic growth**. The higher level of production leads to higher derived demand for labour and helps to achieve low unemployment rates.

Since given her nature, she can achieve low unemployment rate by focusing on price stability, Singapore should focus more on price stability as a short-term goal as it can help to achieve other goals.

**EV1:** Also, price stability, as mentioned above, provides a conducive environment for foreign investments which is key to expanding our productive capacity and thus achieving sustained growth.

**P2: However, on some occasions, the government will change its priority to focus more on achieving low unemployment rate goal when high unemployment problem is severe.**

**E&E2:**

For example during recession in Singapore as a result of US sub-prime crisis in 2008, real national output will be contracting and the economy will be operating well below full-capacity. Hence the Singapore government made it a top priority to stimulate economic growth and achieve full unemployment.

- **High unemployment reduces SOL**

High unemployment means that there is a fall in the level of production in the economy. This means that there will be a rise in unemployment because there would be a fall in the demand for labour since labour is a derived demand. There would be a fall in people's incomes, which means that their purchasing power has decreased. Hence, they can buy fewer goods and services to satisfy their wants, leading to a fall in their material standard of living. Assuming non-material SOL remains unchanged, there is a fall in overall standard of living.

For countries such as Singapore whereby the people are the main resource, there is a need to ensure that resources are efficiently allocated as well as the people's welfare is well taken care of in order to incentivize them to continue to reside in the country. Thus, there is a need for Singapore government to focus more of achieving low unemployment rate goal.

**P3: There are also situations whereby healthy BOP goal becomes the top priority when the country is experiencing large and persistent BOP deficit.**

**E&E3:** For example, when US experiences large and persistent balance of payment deficit on current account due to China practising predatory dumping of her textile and shoes in US, the US government will make healthy BOP goal as the top priority. A large and persistent BOP deficit for US is a sign of poor economic performance which will weaken investors' confidence. A fall in investment expenditure results in an initial fall in income which triggers further fall in induced consumption. There will be more than proportionate fall in AD relative to the fall in investment which **reduces actual economic growth**. The lower level of production leads to lower derived demand for labour and compromises low unemployment rate goal.

For countries dependent on trade, a large and persistent BOP deficit for US means there will be insufficient funds to continue to buy imports for economic development purpose. Tapping on the limited reserves of gold and foreign currencies to continue

financing import expenditure will eventually cause a depletion of foreign reserves. This will result in future SOL to be compromised.

### Suggested Marking Scheme

Level	Description
<b>L4</b>	For an answer that is able to analyse thoroughly the positive effect/s of achieving price stability and the negative effects of not achieving all 3 other macroeconomic goals
<b>L3</b>	For an answer that is able to analyse clearly the positive effect/s of achieving price stability and the negative effects of not achieving at least 2 other macroeconomic goals
<b>L2</b>	For an answer that is able to analyse adequately the positive effect/s of achieving price stability and the negative effect/s of not achieving at least 1 other macroeconomic goal. Some conceptual errors in explanation.
<b>L1</b>	For an answer that shows awareness of some positive effect/s of achieving price stability or negative effect/s of not achieving at least 1 other macroeconomic goal. Conceptual errors are evident. Smattering of points
<b>E2</b>	For an answer that uses analysis to support an evaluative appraisal of the extent of government concern by considering at least 2 criteria of the severity of the problem, the characteristics of the economy as well as the existing economic conditions prevailing in the economy.
<b>E1</b>	For an answer that uses analysis to support an evaluative appraisal of the extent of government concern by considering one criteria of the severity of the problem, the characteristics of the economy as well as the existing economic conditions prevailing in the economy.

- 5 High unemployment in the euro area today is a consequence of both the economic fallout from the global economic crisis and labour market rigidities. Out of the eighteen million unemployed, three million were between the ages of 15 to 24.

**Discuss how a government can best solve the above problem of unemployment. [25]**

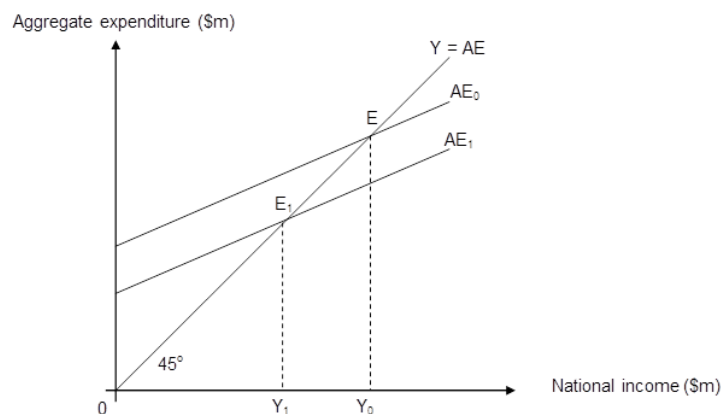
## Introduction

Unemployment of labour occurs when people who are willing and able to work and are actively seeking a job but are unable to find jobs. The preamble states that high unemployment (which is an unemployment level that is above 5%) in the euro area was a result of the global economic crisis and labour market rigidities. This means that unemployment was caused by both cyclical and structural reasons respectively. Furthermore, the problem is more severe for youth.

This essay will examine how both the stated reasons contributed to the high unemployment in the euro area and will examine and evaluate possible policies that can be used to deal with the above problems and conclude by explaining how best a government can solve the problems of unemployment.

**P1: One of the causes of high unemployment is the global economic crisis which led to cyclical unemployment.**

E/E: Cyclical unemployment occurs during a recession. The US sub-prime crisis and the Eurozone debt crisis both resulted in weaker purchasing power in the US and countries in the European Union (EU). Since the US and neighbouring countries within the EU are major trading partners of countries in the EU such as Spain, demand for her exports will fall, assuming Spain's exports are normal goods to her partners. As a result, export revenue would fall. Ceteris paribus, net exports would decrease and AE would fall, leading to a downward shift of the AE curve from  $AE_0$  to  $AE_1$  as shown in Figure 1.



**Figure 1: Cyclical Unemployment**

The initial equilibrium national income is  $Y_0$ . The fall in the aggregate expenditure results in a surplus of goods and services. This leads to an unplanned investment. Firms will thus reduce output in the next period resulting in lower income level. This will then bring about a fall in induced consumption which results in a further decrease in national income. Again, the multiplier process will continue until the economy reaches a new but lower equilibrium

national income of  $Y_1$ . When firms reduce production, they will also retrench workers and high unemployment rises as labour is a derived demand of production.

**P2: Structural unemployment was also another reason for high unemployment, with the problem being more severe for youths.**

E: Structural unemployment is caused by changes in the structure of the economy. In order to remain competitive globally, countries in the EU have generally moved to high-skilled industries such as chemical production, aerospace and automotive industries. As a result, workers in the low-skilled industries would become unemployed as the demand for such workers falls and the demand for workers in the high-skilled industries rises. However, the low-skilled workers are unable to find alternative forms of employment as there is a mismatch in their skillset as compared to those required in the high-skilled industries. With these labour market rigidities, structural unemployment would arise.

The problem is more severe for youths since they are more likely to be low-skilled and do not have the necessary job experience to grant them permanent contracts. Thus, their lack of skills combined with the recession in the US and EU has resulted in youths taking up a significant proportion of those who are unemployed in the EU as they are the first to be laid off when a recession takes place.

**P3: An expansionary fiscal policy can be used by a government to solve the problem of unemployment.**

E: This involves an increase in government expenditure and a reduction in taxes in order to raise AE. An increase in government expenditure on final goods and services such as building infrastructure, spending on education and healthcare would lead to a rise in AE.

A government can also lower taxes. By lowering personal income tax, disposable income would rise, which would lead to an increase in consumption. Ceteris paribus, AE would rise. Also, a fall in corporate income tax would lead to a rise in post-tax profits. With more funds available for investment, investment expenditure would rise. Hence, AE would increase, ceteris paribus.

The rise in AE would bring about a shortage of goods and services or unplanned disinvestment at the initial equilibrium level of national income. Firms will meet the excess demand by drawing from their stocks or inventory. This means that there is unplanned disinvestment. Thereafter, firms will increase output in the next time period, resulting in a rise in national income, which is equal to the initial rise in injection. Consequently, this rise in incomes will lead to a rise in induced consumption and a rise in withdrawals. The multiplier process continues until the total amount of increase in withdrawals equals to the initial rise in injections. Hence, the economy reaches a new equilibrium national income at a higher level, which is also the full-employment level of national income in this case. Firms also increase their derived demand for labour, thus reducing cyclical unemployment.

**Evaluation:**

✓ The policy is effective as it deals with the root cause of the problem, which is a falling AE. Even though the source of the problem was a fall in external demand, if the rise in domestic demand exceeds the initial fall, AE would still rise and this would encourage greater production in firms which would increase their derived demand for labour. This helps to reduce unemployment. Furthermore, it helps deal with youth unemployment as well since the initial trigger for their loss in jobs is a recession.

✗ Large tax cuts may not bring about the desired increase in investment if businessmen are not optimistic about future prospects. And such expectations are based on expected profits,

interest rates and the political climate. Since the EU is facing a recession, consumers may not have confidence in the economy and would still save more despite the tax cuts and this means less profits for firms who would in turn not want to increase their investments since they are not confident they can earn a desired amount of profits.

**P4: Supply-side policies are necessary to solve the problem of structural unemployment.**

E: Since the problem that results in structural unemployment is a mismatch of skills between that of the workers and what the firms want, supply-side policies are needed to bridge this gap.

One measure is to combine the temporary employment contracts with industry-led skill building and to improve vocational training systems. Workers on temporary job contracts do not receive industry-specific skills training in their firms because employers are unwilling to invest in their human capital when there is a great likelihood of these employees only staying with the firm for a few years and thus it would be regarded as a waste of the firm's resources to train these workers. The government can then put in place policies that would lower this opportunity cost for employers. These either include tax reductions that proportionately match the hours of training that these firms give their workers or subsidies to relevant courses that the firm would sign its workers up for. Another measure is to set up vocational schools that not only provides courses for its students but also provide internship or apprenticeship programmes that allow students to apply their theoretical knowledge to real-world situations.

As mentioned above, youths are more likely to be in temporary contracts than workers in other age groups. Thus, this policy is helpful in dealing with the structural unemployment issue that is more prevalent among youth.

**Evaluation:**

✓ This policy is effective and necessary in helping to solve structural unemployment because it addresses the root cause of the problem which is the mismatch of skills between potential workers and what firms require. While it does not deal with the problem of cyclical unemployment, it still aids in alleviating the overall high unemployment, especially among the youth. Furthermore, when a country moves out of a recession, its workers are then better placed to find jobs quickly since they now have the relevant skills that firms require.

✗ This policy, however, would take some time to put in place and to be effective and it takes time for vocational training schools to be set up and it also takes time to convince firms to be willing to participate in providing apprenticeship programmes. Furthermore, even with more training provided for those on temporary contracts, it takes time for workers to learn higher-end skills. Thus, there is a time lag between the implementation of the policy and being able to enjoy the fruits of the policy. While this takes place, high unemployment may still occur.

**P5: The policy of depreciation by the Eurozone can help deal with the problem of cyclical unemployment.**

E: To boost reduce cyclical unemployment, the government can depreciate its currency. This means that it lowers the external value of its currency. It can do so by selling its domestic currency in the foreign exchange market. When domestic currency depreciates, the price of the country's exports in foreign currency will fall. Assuming the demand for its exports is price elastic, this will lead to a more than proportionate increase in quantity demanded for exports, ceteris paribus, and hence a rise in its export earnings. Currency depreciation will also increase the price of imports in domestic currency. If the demand for

imports is price elastic, a rise in price will result in a more than proportionate fall in quantity demanded for imports, *ceteris paribus*, leading to a fall in import expenditure. Since the country's export earnings rise while its import expenditure falls, there will be a rise in its net exports (X-M).

As long as the Marshall-Lerner condition is met, i.e. the sum of price elasticity of demand for exports and price elasticity of demand for imports is more than one, currency depreciation will lead to a rise in net exports. Since net exports increase, AE also increases, *ceteris paribus*. The rise in AE would result in a shortage of goods and services or unplanned disinvestment. Hence, there is an incentive for firms to increase production, leading to an increase in national output and derived demand for labour, thus reducing cyclical unemployment.

#### **Evaluation:**

✓ This policy helps to address the root cause of the problem, which is a fall in AE due to falling external demand.

✗ However, this policy has a limited effect in that trade between Eurozone countries would not be affected by the policy because they share a common currency. Thus, depreciation would not change the value of exports to neighbouring Eurozone countries.

#### **Level Marking Scheme**

Level	Descriptors
L3	<ul style="list-style-type: none"> <li>• Rigorous analysis of both causes of unemployment (must be cyclical and structural).</li> <li>• Rigorous explanation (including limitations) of 3 policies to solve the 2 causes of unemployment.</li> <li>• Policies to solve youth unemployment must be included.</li> <li>• Coherent response.</li> <li>• Good application to a given context.</li> </ul>
L2	<ul style="list-style-type: none"> <li>• Some to rigorous analysis of only 1 cause of unemployment and the appropriate policy to tackle it (applies to cyclical unemployment as well even if student explains 2 policies well)</li> <li>• Some attempt at evaluation of policies.</li> <li>• Limited application to given context.</li> <li>• OR Thorough explanation of 2 causes of unemployment only</li> <li>• OR only explanation of 2 policies to deal with unexplained causes of unemployment</li> </ul>
L1	<ul style="list-style-type: none"> <li>• Smattering of points that show weak understanding of question requirements.</li> <li>• Poor content with several conceptual errors.</li> </ul>

#### **Personal Judgement**

Level	Descriptors
E2	<ul style="list-style-type: none"> <li>• Makes a recommendation of the best approach to tackling the above problems of unemployment including youth unemployment after consideration of the given context.</li> <li>• Max 3m if recommendation is made without considering youth unemployment.</li> </ul>
E1	<ul style="list-style-type: none"> <li>• States that a combination of policies are needed without explanation – 1m</li> <li>• Explains why a combination of policies is needed without application to context.</li> </ul>



- 6 Globalisation is increasing substantially and creating new opportunities for both industrialised and developing countries. The largest impact has been on developing countries, which can now attract foreign investments, thereby enabling them to reduce poverty significantly.

Source: Angie Mohr, *Houston Chronicle*, 19 January 2013

- (a) Explain the determinants of a country's pattern of trade. [10]
- (b) Globalisation tends to benefit developing economies more than developed economies. Discuss the extent to which you agree with the above view. [15]

## Part A

### Introduction

A country's pattern of trade refers to the type and volume of goods or services that the country exports and imports. It also looks at who the country's trading partners are. This is mainly determined by supply factors such as the factor endowment of a country and also demand factors such as expectations of high demand.

### **P1: The theory of comparative advantage helps to explain a country's pattern of trade of exports and imports.**

E: According to the theory of comparative advantage, even if one country has absolute advantage over others in the production of all goods, there is still a basis for mutually beneficial trade as long as there is comparative advantage in the production of these goods. A country is said to have a comparative advantage in the production of a good if it can produce that good at a lower opportunity cost than another country, i.e. less amount of another good has to be given up in order to produce it. This is based on the factor endowment of a country.

Assume that China and Singapore can produce two products (for example, cloth and electronic valve), have a given amount of resources and constant returns to scale. China can either produce 1000 electronic valve when fully used for electronic valve production or produce 1000m of cloth when fully used for cloth production while Singapore can either produce 800 electronic valve or 200m of cloth. The opportunity cost of producing 1 electronic valve in China is 1m of cloth, while the opportunity cost of producing 1 electronic valve in Singapore is 0.25m of cloth. Since Singapore has a lower opportunity cost of producing electronic valve, Singapore should specialise in producing electronic valve and China should specialise in producing cloth. Hence, Singapore exports electronic valve to China and imports cloth from China, and vice versa for China.

Due to Singapore's strength lies in the fact that she has a high level of technological advancement due to the large amount of investments pumped into R&D, there is a large amount of capital equipment, world class infrastructure, as well as an educated and skilled workforce due to her world class education. Hence, her comparative advantage lies in the production of high tech, high value-added manufacturing and tertiary services. Thus, due to differences in comparative advantage, China and Singapore would export goods in which they enjoy comparative advantage in and import other goods and services.

### **P2: Changes in demand factors can also affect patterns of trade.**

With world incomes rising and consumers having an increase in purchasing power especially in Asia, Singapore hopes to tap on this trend by investing in industries such as lifestyle products and services.

Singapore has also ventured into the production of different brands of electronic consumer products such as DVD players through local brands such as Akira and Enzer. This is to cater to the rising middle class in the region, especially the lower income group of consumers. Due to the amount of profits to be made from the rising demand, Singapore will produce these different brands even if she may not have comparative advantage in. Singapore also exports these lower end electronic products to developing countries such as Indonesia and the Philippines, where there is demographic change in the form of rising middle class.

L: Thus, expectations of high demand and profits play a part in determining what type of goods and services a country would export.

**P3: Changes of economic conditions of trading partners also determine a country's pattern of trade.**

E: Over the past few years, the financial crisis, European sovereign debt crisis and the growth of emerging economies have affected the trade patterns around the world. For example, the profile of Singapore's top 10 trading partners has seen some changes over the past decade. The shares of European Union economies and the USA in Singapore trade pattern has declined over the past decade. This can be explained by the slow growth experienced by the US and the Eurozone countries while the Chinese economy develops at a rapid rate which results in a greater rise in demand for our exports, thus, changing our pattern of trade.

Level	Description
<b>L3</b>	Detailed analysis of both demand and supply factor, supported by theory of comparative advantage. There is awareness of pattern of trades in type of goods and trading partners.
<b>L2</b>	Good analysis of supply factor with reference to theory of comparative advantage and some explanation of demand factors.
<b>L1</b>	Limited analysis and scanty explanation of factors affecting patterns of trade. Smattering of ideas.

**(b)** Globalisation tends to benefit developing economies more than developed economies.

**Discuss the extent to which you agree with the above view.**

**[15]**

**Introduction**

Globalisation refers to the process of continuing integration of countries in the world where national markets become increasingly interlinked with greater mobility of goods and services, capital, labour and technological know-how amongst countries. Developing countries are characterised by low national income/capita, relatively low level of industrialisation/large agrarian sector, low level of education, and weak infrastructure, while developed countries typically enjoy high national income/capita, educated labour force with high rates of capital accumulation (Investment) and better infrastructure. The characteristics of the developed or developing countries may explain for the differences in the impact of globalisation.

**P1: Countries gains from globalization in terms of increasing their employment of resources and propelling their actual economic growth, and increase the current standard of living.**

**E&E1:** As part of the process of globalization, increasingly countries are moving towards free trade whereby exchange of goods and services is done without trade barriers such as tariffs (taxes on imports) → free trade gives rise to *trade creation* whereby there is an increase in the volume of trade for countries such as China → specialized based on her CA → China could produce low-end manufactured goods more efficiently than trading partners which means to produce one more unit of low-end manufactured goods such as textile, she is able to give up less of alternative good → lower opportunity cost incurred → goods and services including those exported able to be produced cheaper in China than trading partners → demand for X rises, c.p → rise in total revenue from exports, it is also worth noting that there is a rise in total expenditure on imports as well because of cheaper M from trading partners → in the context that rise in  $TR_x$  is more than rise in  $TE_m$ , rise in  $(X-M)$  since  $(X-M)$  is a component of AD and a form of net injection → rise in Y of owners of fops in export sector which triggers further spending on goods and services in domestic sectors due to higher purchasing power, after part of the income leaked out in the form of savings, taxes or imports → ripple effect of rise in demand within the domestic sectors will continue until initial rise in J is equal to amount leaked out → multiple rise in real NY in SR → economic growth in SR. Rise in production of goods and services → increase derived demand for labour → reduce  $Un+$ . Rise in real NY → improves material SOL → increase current SOL.

### **Evaluation:**

Globalization tends to benefit developing economies such as China in terms of employment gain more than the developed economies such as Singapore due to the nature of the goods and services exported. For example, developing economies such as Indonesia and China tend to experience greater job gains as they have comparative advantage in labour intensive industries with low capital to labour ratio but the job gains generated for developed economies such as Singapore may be smaller as the comparative advantage lies in the capital intensive product with high capital to labour ratio, thereby, generating less jobs from the rise in market access.

On the other hand, developed economies may experience a greater rise in national income. Capital intensive products tend to be high value added, and that means that the rise in  $(X-M)$  tends to be greater for developed economies with comparative advantage in high value add products such as electronic valve as compared to developing economies with comparative advantage in agricultural products such as potatoes. This would lead to a greater rise in AE, leading to greater rise in national income, assuming that the economies are operating near full employment level.

### **P2: Globalization also benefits developing countries more in terms of increasing their potential growth and future standard of living. (AD/AS) LRAS**

#### **E&E2:**

Globalization involves removal of barriers to capital flow between economies which will increase the flow between countries as profit maximizing investors look for higher rate of returns to investment. Due to relatively cheaper cost of production in developing countries, developing economies tend to attract capital inflow in the form of foreign direct investment, increasing the capital formation of machinery, factories in the developing countries, leading to a rise in capital stock. Moreover, these foreign direct investments may lead to transfer of technology between the developed and developing countries through sharing of more efficient methods of production and assist in the formation of human capital. These will lead to a rise in productive capacity of the economy and a rise in LRAS which increase the potential growth of the economy and future standard of living.

However, the rise in FDI may also bring about greater pollution and depletion of resources, affecting the productive capacity of the developing countries. Relatively lenient environmental policies in the developing countries may give them a comparative advantage in pollution intensive goods, and FDI might harm the host country's environment, affecting the quality of resources such as land and labour. Moreover, FDI into developing countries may focus on natural resource use and extraction, particularly agriculture, mineral and fuel production. This could lead to rapid depletion of resources which affects quantity of resources thus limiting the potential growth of developing economies and future SOL.

Globalisation can also lead to a rise in capital flows between developed economies, usually into the production of higher value added goods and services. For example, Singapore, Hong Kong, Ireland have been able to attract FDI into the different sectors of the economy such as financial, IT services, and manufacturing of high value added products such as pharmaceutical through good infrastructure, high human capital and attractive corporate tax system. These FDIs also lead to greater capital formation and raise the potential growth of the economy.

### **Evaluation:**

While the hypothesis that FDI tends to benefit developing economies more, the extent to which FDI benefits the host country depends on the type of FDI which the economy is able to attract. Due to differences in the sources of comparative advantage, the type of FDI also differs between developed and developing economies. In this case, it is likely that developed economies may actually benefit more from the increase in FDI as they tend to attract high quality investment flows into the economy rather than those which could lead to environmental degradation and rapid depletion of resources. This could be due to stronger governance in developed economies, preventing the fallout of environmental pollution from FDIs. In fact, the U.S. was the top recipient of FDI in 2013. Thus, it is likely that developed economies benefit more from developing economies.

### **P3: Developed economies tend to experience a rise in structural unemployment whereas developing economies may not as the latter gains comparative advantage from the process of globalisation.**

The process of globalisation reduces barriers to trade of goods and services and this will lead to more competition in the world market from cheaper imports produced by developing countries which have comparative advantage in these goods. This will reduce the demand for domestic exports, leading to a fall in the production. This will result in higher unemployment due to a fall in derived demand for labour. However, as the workers lack the relevant skills to move into the sunrise industries in which the developed economy enjoys comparative advantage in, structural unemployment would arise due to occupational immobility. For example, Singapore used to enjoy a comparative advantage in the production of hard disk drive and was one of the world largest HDD producers accounting for 30% of world production. However, due to the development of Thailand, Singapore's exports of disk drives dropped from a high of S\$18.7 billion in 1998 to S\$13.45 billion in 2005. This has led to a rise in structural unemployment as the unemployed are unable to move into the biomedical industries or the financial sector.

### **Evaluation: The extent of rise in structural unemployment varies among developed economies due to differences in the ability of the government to intervene.**

Some government of the developed economies may have issue in responding to this challenge as they may not have sufficient funds or resources to implement interventionist supply side policies. Governments who have enjoyed budget surplus may be in a better position to cope with this challenge posed by globalisation.

**P4: Countries are able to enjoy lower cost of production due to increased mobility of factors of production which helps to lower their inflation rate.**

**E&E3:** With globalization, there is increased mobility of factors of production such as labour → increase in labour supply into countries will create a surplus of labour and exerts downward pressure on price of labour → a lower wage rate means lower cost of production → assuming rev constant → profit higher → profit maximizing producers more willing and more able to produce final goods and services → rise in SRAS → surplus of goods and services at original GPL which exerts downward pressure on GPL → fall in GPL of final goods and services → lowers inflation rate → low inflation rate goal 😊

**Evaluation:**

In this situation, developed economies may benefit more than developing economies because the former are experiencing a situation whereby there is a higher level cost of production due to higher labour cost → with globalization, they would be able to bring down inflationary pressures by bringing in more resources from developing economies. Hence, developing economies benefit less compared to developed economies in this aspect.

**Suggested Marking Scheme**

Level	Description
<b>L4</b>	Thorough analysis of both positive and negative impact of globalisation. Good evaluation of the differing impact based on developed and developing economies' characteristics. Conclusion is reasonably supported.
<b>L3</b>	Relatively detailed analysis of both positive and negative impact of globalisation with some evaluation of the differing impact.
<b>L2</b>	Some explanation of either positive or negative impact of globalisation on an economy with some recognition of the differing impact on different countries. Answer is largely one-sided. Conceptual error/s evident.
<b>L1</b>	Limited analysis and scanty explanation of impact of globalisation. Smattering of ideas.