

## Essay Question 1

Scotland's new food authority is prepared to take the hard-line on tackling obesity, with a sugar tax on sugary drinks and food, junk food tax and junk food advertising ban under consideration.

- (a) Explain what is involved in rational decision-making both by consumers and by firms. [10]
  - (b) Assess whether governments necessarily fare better than the free market in resource allocation for goods with high sugar content. [15]
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### Suggested answer to Part (a)

#### Introduction

All economies face the problem of scarcity, a situation where there are unlimited wants but limited resources. Thus, choices have to be made for the best allocation of resources in an economy. Similarly, consumers and firms also face constraints and thus must also make choices. As opportunity cost is incurred when making choices, societies will choose the particular assortment of goods and services with the objective of gaining the highest level of satisfaction with the least possible cost. Both consumers and firms make rational decisions where they aim to maximise their self-interest. In the case of consumers, utility maximisation while in the case of firms, it is profit maximisation. This can be achieved by weighing up the opportunity cost arising from an activity against the benefits, by considering the marginal effects of change.

#### Development - Marginalist principle applied to consumers

A rational consumer seeks to maximise net total benefits from consuming a good. Rational decision-making by consumers involves considering the marginal benefits and the marginal costs of consuming the good. The marginal benefit is the satisfaction derived from consuming an additional unit of the good while the marginal cost is the price paid for the good.

A rational consumer will buy an extra unit of a good as long as marginal benefit exceeds the price of the good because it increases the level of net total benefits from consumption i.e. consumers will consume up to the point where  $MB=P$  where the total net benefits are maximised. Consumers will not consume the additional unit where MB is less than prices as it lowers the net total benefits from consumption.

Since rational consumers will buy a product only if the MB exceeds or is at least equal to the price paid for it, it follows that the demand curve in a market represents the MB that consumers derive from consuming an extra unit of the good.

### **Development 2 – Marginalist principle applied to firms**

A rational firm seeks to maximise total profits from the production and sale of a good. Rational decision making by firms means that firms will base their output decision on the marginal revenue and marginal cost. In deciding how many units of a good to produce, a profit maximising firm will produce up to the point where the additional cost from producing one additional unit of output equates the additional revenue from selling it.

A rational firm will produce and sell an extra unit of a good as long as  $MR > MC$ . Because this means that by producing that unit, there will be bigger addition to revenue (MR) than to cost (MC) and total profits will increase given that marginal profit is positive. When production by the firm is at an output where MC exceeds MR, producing that add more to cost than to revenue and hence reduce profit. Firms' profits can be increased by cutting back on production since marginal profit is negative. Firms thus produce up to the point where  $MR=MC$  where the total profit is maximised.

In perfect competition,  $MR=P$ . This means that the firms produce up to the point where  $P=MC$ . This also means that the firm's supply curve for the good, reflects the MC of the good.

### **Conclusion**

The marginalist principle is adopted by both consumers and firms when they attempt to maximise their self-interest. When resource allocation is left to the price mechanism, goods are produced up to the point where demand matches supply. Since demand reflects MB and supply reflects MC, at the market equilibrium point, where demand matches supply,  $MB=MC$  and society's welfare is maximised.

## **Suggested answer Part (b)**

### **Introduction**

Allocative efficiency is achieved when the right amount of the right goods are being produced and productive efficiency occurs when the output is produced at the lowest cost. Under strict assumptions of perfectly competitive market, and for which no externalities are present, the interaction between rational producers and consumers result in an allocative efficient outcome and society welfare is maximised. However, should the market fail due to the presence of information failure or externalities, then the resource allocation will not be efficient and government intervention may result in a better outcome.

### **Thesis: Government may fare better**

#### **(1) Market fails as food with high sugar content is a form of demerit good**

Food with high sugar contents tend to be over consumed due to consumer ignorance on the long term future costs to himself e.g. potentially high medical bills and lower quality of life when diagnosed with diabetes. Consumers over-value the true marginal benefits of consuming sugary foods and thus results in a divergence between his perceived marginal value and the true marginal value from consumption of these sugary foods. Demand is higher than the level that is socially desirable and can foods with high sugar contents can be over-consumed and produced if left to the free market.

Rational decision making by consumers who consume by considering only their own private cost and benefit may not generate the socially optimum level of consumption due to the presence of externalities. In the case of the market for foods with high sugar content, there are likely to be negative externalities, which are costs of consumption experienced by parties other than the producers or consumers themselves. For example, the consumption of junk food leads to higher occurrence of obesity, which is usually accompanied by a host of diseases, less productive labour force.

With the presence negative externalities, marginal social benefits is lower than marginal private benefits. As a result, decision based on private marginal costs and benefits will result in over consumption of the good. Too much resources are allocated to the production and consumption of these junk food.

#### **(2) Government intervention leads to allocative efficiency**

Intervention by the government achieves the socially desirable outcome. For example, the tax on junk food is likely to raise the cost of production and thus the shift MPC to  $MPC_1$ . Ceteris paribus, the higher price causes consumers to reduce consumption to socially ideal level of  $Q_1$  and government thus fare better resources are better channelled to other markets and the deadweight loss to society is removed.

Likewise, advertising ban may limit the misinformation and “correct” the perception of these foods, causing the demand for these high sugar content foods to fall back to a more accurate level of MPB (true).

### **Anti-thesis: Government may not fare better**

Government intervention may not always lead to an improved outcome compared with the free market. Government intervention may sometimes exacerbate a problem or produce unintended negative results making the cost of government failure considerably greater than the cost of market failure.

Whether or not government fares better depends on various factors:

#### **(1) Imperfect Information**

- One factor which would affect the level of success of the government, even if it intervenes in the market with the intent of correcting market failure, is the accuracy of information. In the absence of perfect information to use when correcting the market failure, government may create more inefficiencies.
- For example, one solution to the overconsumption problem is to introduce indirect tax to raise MPC so as to get consumers to cut back consumption of high sugar content foods towards the socially optimum level. Without accurate information on the level of externalities and PED value, the government is not able to determine the indirect taxes required to bring the consumption level exactly to the socially optimum level.
- The government may overestimate the tax required, shifting the MPC to  $MPC_2$ . The new private equilibrium output will be at  $Q_2$ , lower than the socially optimum amount  $Q_S$ . The overcorrection therefore creates a new deadweight loss of  $abc$ . Should the new deadweight loss  $abc$  exceed the original deadweight loss of area  $xyz$ , government intervention makes the society worse off.

#### **(2) Choice of policy considering the root cause of the failure and the trade-off**

In addressing the market failures in the market for food with high sugar contents, the choice of policy is crucial in determining its success.

##### ***Equity***

- In correcting the market failure using tax, government may end up worsening the problem of inequity. It is widely known that the poor spends a large proportion of their income on the “junk food” (for a few reasons, these foods tend to be relatively cheaper in both monetary terms and preparation time for these low income who takes on multiple jobs to survive). Therefore, a tax which artificially raises the market price may affect the low income more adversely than the high income who are not the main consumers, thereby achieving efficiency at the expense of equity.

### **Root cause of market failure**

- While both negative externalities and information failure are possible causes of the overconsumption of the foods with high sugar content, to fare better than the market, the government has to address each of the 2 sources of failure in a targeted fashion. For example, between taxing unhealthy food and subsidising the healthier food option, the impact of the latter may be more effective in moving the low income towards the healthier food choices.
- Likewise, given that children are the main victims of the overconsumption of high sugar content food and drinks, it may be more effective to introduce campaigns which shift their tastes and preferences by educating them on the damage and longer term implication of consuming these goods than to simply regulate the advertising ban.

### **(3) Administrative costs**

Even if there were no serious information imperfection problem, government intervention can also produce inefficiency when administrative cost is high. Following from the above example, administrative cost of an indirect tax could include the wages paid to tax officers to monitor the companies. The reduction in deadweight loss from the cutback in consumption has to be weighed against the administrative cost incurred in the intervention. Should the administrative cost exceed the reduction in deadweight loss arising from overconsumption, government intervention makes the society worse off.

### **Synthesis and Conclusion**

Weighing up the various factors, government is likely to fare better than market forces in the market for foods with high sugar content. There exists no visible incentives for firms to cut back on the production and sale of these high sugar foods or produce an equally priced healthier option for the market without clear government signals through intervention. If the government can collaborate with the firms to market fairly priced healthier food options and encourage the children in schools to eat healthily through, it might be more effective than market distorting measures such as taxes or politically unfavourable ones such as advertising bans.

## Essay Question 2

Amidst rising income, the Malaysian government implemented Goods and Services Tax (GST), which is a broad-based 6 percent tax on goods and services.

*Source: Adapted from The Straits Times and The Star Online, 2015*

Assess the impact of the abovementioned changes on the market for different goods in Malaysia. [25]

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### Suggested Answer

#### Introduction

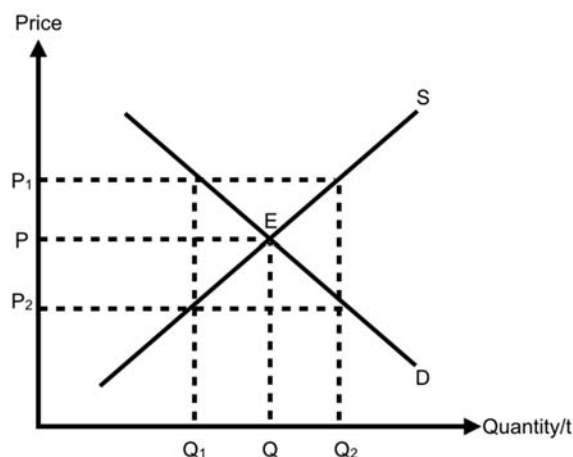
To analyse the impact of the abovementioned changes on the market for different goods, I would make use of the demand and supply model along with elasticity concepts to aid in the analysis of what happens to the markets in terms of price, quantity, and expenditure, which is equals to price multiplied by quantity. The impact on different markets would differ based on the type of goods they are.

#### Body:

(If the explanation of the demand-supply model and elasticity is weaved into the explanation in the body paragraphs below, it's also acceptable)

The demand and supply model enables us to determine the equilibrium price and quantity of the market.

Demand is the willingness and ability of consumers to purchase a given good at a given price in a given time period, *ceteris paribus*. Supply is the willingness and ability of producers to provide a good for a sale at a given price, in a given time period, *ceteris paribus*. The intersection of the demand and supply curves will give us the equilibrium price and quantity.



In the above diagram, the market equilibrium point is at point E, where demand curve D intersects supply curve S, giving us equilibrium price P and quantity Q. If price is at P<sub>1</sub>, quantity demanded will be Q<sub>1</sub> and quantity supplied will be Q<sub>2</sub>, causing a surplus of Q<sub>2</sub>Q<sub>1</sub>. This will lead to a downward pressure on price, until equilibrium is

obtained again where demand equals supply. Similarly, if price is at  $P_2$ , quantity demanded will be  $Q_2$  and quantity supplied will be  $Q_1$ , causing a shortage of  $Q_1Q_2$ . This will lead to an upward pressure on price, until equilibrium is obtained again where demand equals supply.

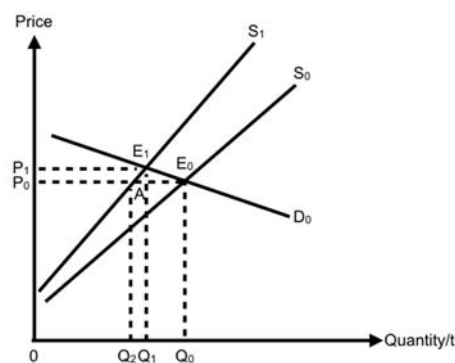
In order to analyse the impact on different markets, we will also make use of elasticity concepts, namely price elasticity of demand and income elasticity of demand.

Price elasticity of demand ( $E_P$ ) measures the responsiveness of quantity demanded of a good to a change in its price, *ceteris paribus*. Demand for a good can be price inelastic or elastic. The main factors affecting price elasticity of demand of a good are firstly number and closeness of substitutes, and secondly, proportion of income spent on the good. The greater the number and closeness of substitutes, the more price elastic the demand for the good. Similarly, the greater the proportion of income spent on the good, the more price elastic the demand for the good.

Income elasticity of demand ( $E_Y$ ) measures the responsiveness of demand to a change in income, *ceteris paribus*. There can be 3 types of goods, which are inferior, necessity and luxury goods. For inferior goods, an increase in income will lead to a fall in demand. For necessities, an increase in income will lead to a less than proportionate increase in demand. For luxury goods, an increase in income will lead to a more than proportionate increase in demand.

### Market 1: Branded bags (Luxury good)

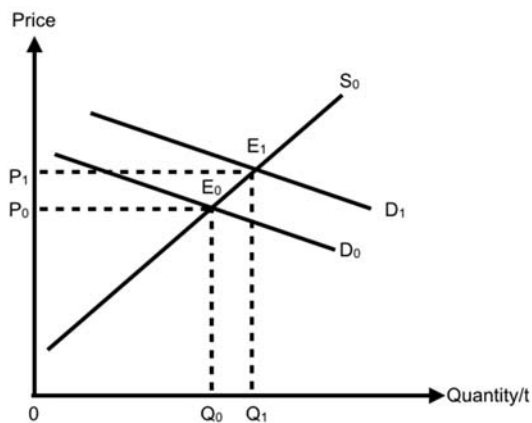
When GST is implemented, it will affect the market through the supply curve. GST will cause the marginal cost of production for branded bags to increase, represented by an upward shift of the supply curve, which will cause equilibrium price to increase and equilibrium quantity to fall. The impact on total expenditure will depend on the price elasticity of demand for branded bags. The demand for branded bags is price elastic as it takes up a relatively huge proportion of consumers' income.



The initial equilibrium was at point  $E_0$ , where equilibrium price was  $P_0$  and quantity  $Q_0$ . Implementation of GST will cause supply to shift leftwards from  $S_0$  to  $S_1$ . At the initial equilibrium price of  $P_0$ , quantity demanded is  $Q_0$  and quantity supplied is  $Q_2$ , resulting in a shortage of  $Q_0Q_2$ . Frustrated consumers will be willing to pay higher prices and quantity demanded will fall, as fewer consumers are willing and able to pay a higher price. This price signal to the producers will cause them to increase the quantity supplied. Quantity demanded will fall and quantity supplied will increase until demand meets supply again at point  $E_1$ , where equilibrium price is  $P_1$  and quantity is  $Q_1$ . Given the price change of  $P_0P_1$ , we can see from the diagram that

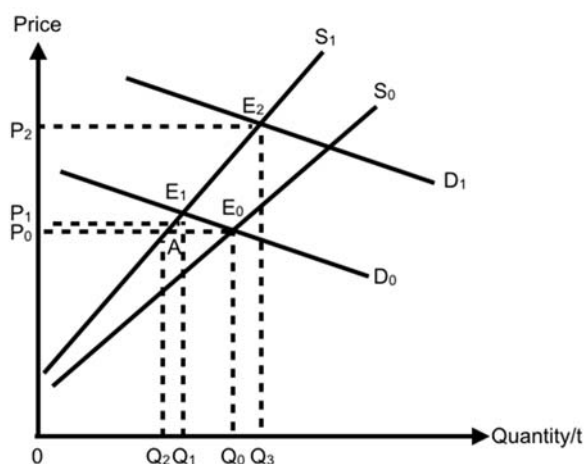
there is a more than proportionate change in quantity demanded of  $Q_0Q_1$ . The decrease in total expenditure resulting from a fall in quantity demanded ( $Q_1AE_0Q_0$ ) is greater than the increase in total expenditure resulting from an increase in price ( $P_1P_0AE_1$ ). Thus, total expenditure has fallen.

When there is an increase in income, it will lead to a more than proportionate increase in demand for branded bags, which are items that Malaysian consumers can do without during periods of falling income.



Initial equilibrium is at point  $E_0$ , with equilibrium price  $P_0$  and quantity  $Q_0$ . An increase in demand is represented by a rightward shift of the demand curve from  $D_0$  to  $D_1$ . This will cause a shortage and upward pressure on price, causing price to increase to  $P_1$  and quantity to  $Q_1$ . The resultant impact will be an increase in total expenditure from  $0P_0E_0Q_0$  to  $0P_1E_1Q_1$ .

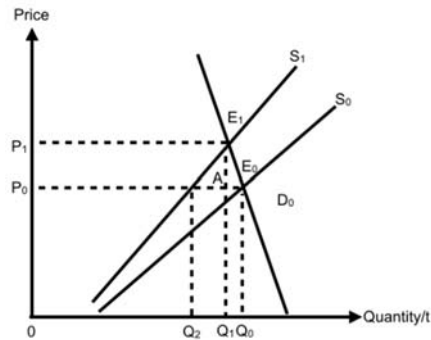
Implementation of GST has caused expenditure to fall while increase in income has caused expenditure to rise. If the extent of increase in demand (from  $D_0$  to  $D_1$ ) is greater than the extent of fall in supply (from  $S_0$  to  $S_1$ ), then we will see an increase in total expenditure from  $0P_0E_0Q_0$  to  $0P_2E_2Q_3$





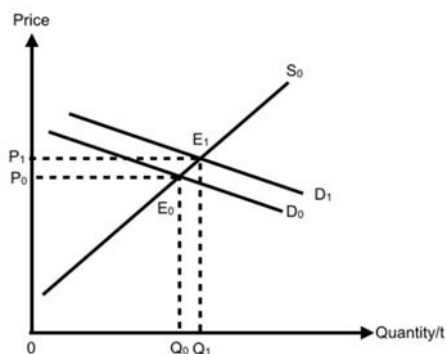
## Market 2: Canned Food (Necessity good)

Similar to the market for branded bags, implementation of GST will cause the marginal cost of production for canned food to increase, represented by an upward shift of the supply curve, which will cause equilibrium price to increase and equilibrium quantity to fall. The impact on total expenditure will depend on the price elasticity of demand for canned food. Canned food has limited substitutes that offer as much convenience and therefore, its demand is price inelastic.



The initial equilibrium was at point  $E_0$ , where equilibrium price was  $P_0$  and quantity  $Q_0$ . Implementation of GST will cause supply to shift leftwards from  $S_0$  to  $S_1$ . There will be a shortage of  $Q_0Q_2$  and prices will increase from  $P_0$  to  $P_1$ . Given the price change of  $P_0P_1$ , we can see from the diagram that there is a less than proportionate change in quantity demanded of  $Q_0Q_1$ . The decrease in total expenditure resulting from a fall in quantity demanded ( $Q_1AE_0Q_0$ ) is smaller than the increase in total expenditure resulting from an increase in price ( $P_1P_0AE_1$ ). Thus, total expenditure has risen.

When there is an increase in income, it will lead to a less than proportionate increase in demand for canned food, which is deemed a necessity by Malaysians.

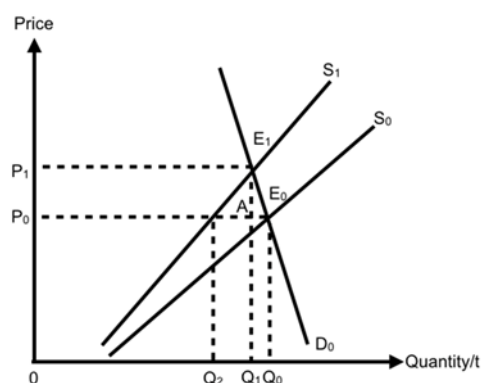


Initial equilibrium is at point  $E_0$ , with equilibrium price  $P_0$  and quantity  $Q_0$ . An increase in demand is represented by a rightward shift of the demand curve from  $D_0$  to  $D_1$ . This will cause a shortage and upward pressure on price, causing price to increase to  $P_1$  and quantity to  $Q_1$ . The resultant impact will be an increase in total expenditure from  $0P_0E_0Q_0$  to  $0P_1E_1Q_1$ .

The combined effect of GST and increase in income on the market for canned food is that total expenditure will definitely increase.

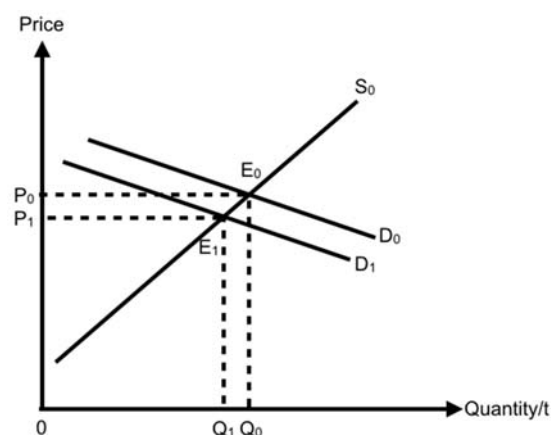
### Market 3: Non-smart phones/TVs (Inferior good)

Implementation of GST will cause the marginal cost of production for non-smart phones/TVs to increase, represented by an upward shift of the supply curve, which will cause equilibrium price to increase and equilibrium quantity to fall. The impact on total expenditure will depend on the price elasticity of demand for non-smart phones/TVs. Non-smart phones/TVs takes up a relatively smaller proportion of consumers' income so the demand is relatively price inelastic.



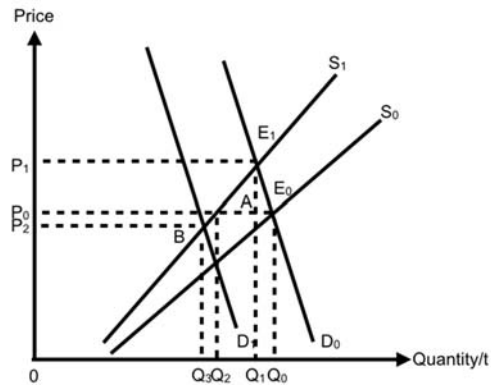
The initial equilibrium was at point  $E_0$ , where equilibrium price was  $P_0$  and quantity  $Q_0$ . Implementation of GST will cause supply to shift leftwards from  $S_0$  to  $S_1$ . There will be a shortage of  $Q_0 - Q_2$  and prices will increase from  $P_0$  to  $P_1$ . Given the price change of  $P_0 - P_1$ , we can see from the diagram that there is a less than proportionate change in quantity demanded of  $Q_0 - Q_1$ . The decrease in total expenditure resulting from a fall in quantity demanded ( $Q_1 - A - E_0 - Q_0$ ) is smaller than the increase in total expenditure resulting from an increase in price ( $P_1 - P_0 - A - E_1$ ). Thus, total expenditure has risen.

When there is an increase in income, it will lead to fall in demand for non-smart phones/TVs, which is deemed an inferior good by Malaysians.



Initial equilibrium is at point  $E_0$ , with equilibrium price  $P_0$  and quantity  $Q_0$ . A decrease in demand is represented by a leftward shift of the demand curve from  $D_0$  to  $D_1$ . This will cause a surplus and downward pressure on price, causing price to decrease to  $P_1$  and quantity to  $Q_1$ . The resultant impact will be a decrease in total expenditure from  $OP_0E_0Q_0$  to  $OP_1E_1Q_1$ .

Implementation of GST has caused expenditure to rise while increase in income has caused expenditure to fall. If the extent of decrease in demand (from  $D_0$  to  $D_1$ ) is bigger than the extent of fall in supply (from  $S_0$  to  $S_1$ ), then we will see an increase in total expenditure from  $OP_0E_0Q_0$  to  $OP_2BQ_3$



## Conclusion

Summary/Stand: The impact on the different markets will differ, depending on price and income elasticity of demand of the various goods. With more information about the impact on supply due to GST and impact on demand due to increase in income, we will then be able to draw a more substantial conclusion about the extent of change in revenue.

Something Special: With the implementation of GST, we would see that the standard of living for the lower income might decrease. For this group of people, the Malaysian government could implement other policies like grants to aid this group of consumers, in order to maintain their current standard of living. This is especially important for Malaysia because there might exist a large group of people who will be affected quite substantially due to the changes

### Essay Question 3

The US courier and parcel delivery services industry has a combined annual revenue of about \$90 billion and is steadily growing in the last few years. The major players are UPS, FedEx, DHL, Yamato Holdings and TNT Express, who are constantly trying to obtain a bigger share through mergers and acquisitions.

- (a) Explain the characteristics which determine the market structure that the courier companies operate in. [10]
  - (b) Discuss the extent to which actions of their rivals is the main factor affecting the behaviour of the firms. [15]
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### Suggested answer to Part (a)

The type of market structure in which courier companies are operating in can be determined by examining the features of the industry, namely – the level of barriers to entry, the number of firms in the industry, the level of information and the nature of product.

In the courier services industry, the level of barriers to entry is high. For example, there are high set-up costs involved to enter the industry because an entrant would have to invest significant capital in purchasing delivery vehicles, planes and distribution warehouses. Potential entrants may not be able to afford this large capital required, or may not be willing to take on the high risk involved should the business fail. As such, potential entrants are deterred, leaving a limited number of firms in the industry.

As stated in the preamble given, there are 5 major players (UPS, FedEx, DHL, Yamato Holdings, TNT Express) in the US courier market. This suggests that there are a few dominant firms which control a large market share. The existence of a few dominant firms also suggests mutual interdependence, as the firms would be responsive to the influential actions of the other major players.

The level of information in the market is not perfect, as consumers do not have perfect knowledge of the quality of services available in the courier market such as the reliability of delivery. Courier firms also do not have perfect knowledge of the delivery processes (technology) of the other firms and their exact factor costs incurred.

While the nature of the service provided by the courier companies may be regarded as largely similar since they all provide delivery of parcels, there is likely to be some degree of differentiation. For example, there may be differences in terms of speed of delivery, or additional features such as the ability to track the parcel.

Therefore, based on the features of high barriers to entry, a few dominant firms which are interdependent, imperfect information and largely homogeneous services with some degree of differentiation, we can conclude that the US courier services market is likely to be an oligopoly.

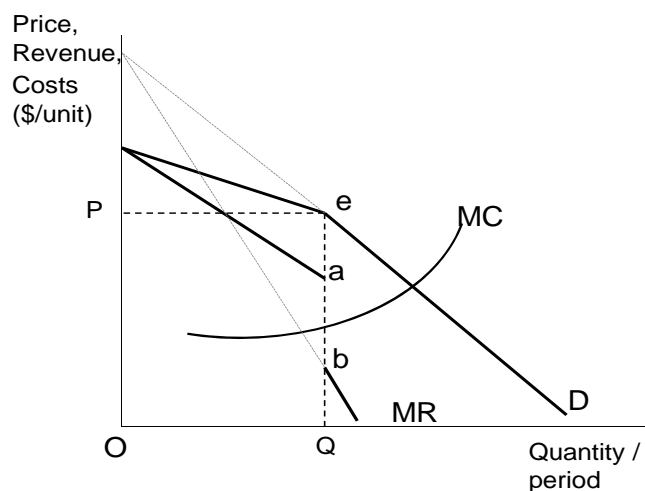
## Suggested answer to Part (b)

### Introduction

In an oligopoly, firms exhibit mutual interdependence which means that one firm's action will have a significant impact on the other firms and the other firms will respond accordingly. Given that the US courier firms are trying to obtain larger market shares through mergers & acquisitions, it suggests that the industry is operating as a non-collusive oligopoly. Assuming that the firms are profit-maximising, their behavior may be influenced by their rivals' actions and other factors.

### Thesis 1: Price rigidity

If the product/service sold by the oligopolistic firms is sufficiently similar, the actions of one firm would warrant a response by the other firms. With this interdependence, firms may find their pricing decisions resulting in price rigidity in the market. This can be represented with the kinked demand curve model.



Assume that initially the market equilibrium price is  $P$ . If a firm raises its price above  $P$ , rival firms will not follow suit because customers will now increase demand for their products (substitutes) since they have become relatively cheaper. As such, this firm will lose substantial sales and experience a fall in revenue. This means its demand curve is price elastic above  $P$ .

If a firm lowers price below  $P$ , rival firms will quickly follow with price cuts as they would want to prevent a loss of sales and protect their market share. Being unable to lure customers away from rivals, this firm will see only a very slight increase in sales. This means its demand curve will be price inelastic below  $P$ , and this firm would experience a fall in revenue with a reduction of price.

Since both unilateral raising and cutting of price will lead to a loss of revenue, an oligopolist tends to avoid price changes as it takes into account its rivals' likely responses. Hence in an oligopoly, there is generally price stability (or price rigidity) at the prevailing price  $P$ .

Instead, oligopolistic firms tend to compete on the basis of non-price strategies like advertising and innovation given their ability to do so due to supernormal profits earned. Even then, firms would be responsive to such actions by their rivals as it would significantly impact the firm's demand, where the firm would likely respond with advertising and innovation of their own. Mergers and acquisitions may also sometimes be used as a strategy to expand market share by gaining an edge over rival firms such as through reaping economies of scale.

### Anti-thesis 1: Entry deterrence

Rather than responding to rivals' actions, incumbent firms may instead act based on entry deterrence intentions. For example, if incumbent firms perceive a threat of another firm entering the market, they may engage in extensive advertising to build brand loyalty. This would raise the market penetration costs for new entrants, as they would also have to engage in costly advertising to be able to gain market share from the incumbent firms.

With higher entry costs due to the need to engage in mass advertising, entrants may be deterred as they may lack the capital to fund such a costly advertising campaign which has uncertain results. Furthermore, since new entrants produce a smaller output than larger incumbents, the entrant does not reap as much economies of scale as the incumbent and therefore the entrant is less able to compete against the incumbents due to a cost disadvantage. The entrant may therefore be deterred due to a lack of ability to compete against the incumbents.

### Anti-thesis 2: Government intervention

Firms may also be subject to government intervention measures in the industry, making their behaviour being affected by government regulations rather than responding to rivals' actions. For example, the US government may apply anti-trust laws to disallow mergers and acquisitions that the courier firms wish to undertake to reduce the concentration of market power. Alternatively, the government may choose to nationalise the courier companies to take over production of the service directly. Such government intervention may be carried out with the aims of improving allocative efficiency or equity.

### Conclusion

The actions of their rivals would likely be the main factor affecting the behaviour the US courier firms. This is because the degree of rivalry is likely to be high, given the close substitutability of the delivery services provided by the different firms as perceived by consumers.

Furthermore, there is a low likelihood of potential entrants overcoming the high barriers to entry for the industry, since high start-up costs would remain a constant feature due to the nature of the service. The likelihood of government intervention in the courier market is also low, since the market appears to be sufficiently competitive between the major players and the nature of the service does not warrant strong

equity considerations. Therefore, entry deterrence and government intervention are likely to be less significant factors that may affect the US courier firms' behaviour.

*\*Note: This is a suggested answer that can realistically be completed under exam conditions. There are other valid points that can be discussed as well – price war, collusion, alternative objectives of the firm, price discrimination, changes in market demand / marginal cost.*

### Essay Question 4

- (a) Using AD-AS analysis, explain the possible relationships between inflation and unemployment. [10]
- (b) To what extent do you agree that unemployment in the country affects the standard of living of the average Singapore citizen? [15]
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### Suggested Answer to Part (a)

#### Introduction

- Define inflation
  - Inflation refers to a sustained and inordinate rise in the General Price Level
- Define unemployment
  - Unemployment refers to a situation where available resources such as labour is not utilised in an economy.
- Identify components that affect AD and AS
  - AD is made up of expenditures from Households (C), firms (I), government (G) and trade ( $X - M$ )
  - AS refers to the ability and capacity of an economy to produce goods and services. It is dependent on the quantity and quality of her factors of production (FOP).

#### Body

- Explain the types of inflation
  - Demand-pull inflation occurs when the AD rises but the economy does not have spare capacity to meet the rise in demand
  - This is illustrated by a rightward shift in the AD curve near or at the vertical section of the AS curve
  - Cost-push inflation occurs when the cost of production rises. This could be due to rise in domestic costs or the rise in the cost of imports. Such a situation is illustrated by an upward shift in the horizontal section of the AS curve
- Explain the types of unemployment
  - Cyclical unemployment occurs when the AD is too low vis-à-vis the capacity of the economy to produce. In such a situation, the AD is at the horizontal portion of the AS curve, or has fallen to those levels
  - Structural unemployment occurs when unemployed workers are unable to find suitable jobs because they lack the required skills due to occupational immobility or are geographically immobile
  - Frictional unemployment refers to a situation where unemployed workers are in transition to another job or are looking for a more suitable jobs. Such unemployment are voluntary and temporary in nature.



- Explain inverse relationship between DD-pull inflation and cyclical unemployment
  - As AD rises close to the vertical portion of the AS curve, cyclical unemployment is reduced. However, if the AD continues to shift rightwards, there will be DD-pull inflation even as cyclical unemployment falls. Thus, there is an inverse relationship between DD-pull inflation and unemployment
- Explain inverse relationship between DD-pull inflation and structural unemployment
  - As AD falls, cyclical unemployment is likely to rise. If the unemployed is unable to find suitable jobs that match their ability (ie. mismatch of skills or occupational immobility), these group of unemployed may persist, leading to a rise in structural unemployment. This is particularly so if the fall in AD is due to a loss of comparative advantage
- Explain direct relationship between cost-push inflation and cyclical unemployment
  - When there is cost-push inflation, the horizontal portion of the AS curve shifts upwards, resulting in a rise in GPL
  - Economies with little natural resources and poor economic structure may face domestic cost pressures coming from rising rentals or face imported cost pressures if it is highly reliant on imported raw materials
  - As the GPL rises, firms cut production resulting in unemployment. Thus, there is a positive relationship between inflation and unemployment.
- Explain the direct relationship between cost-push inflation and structural unemployment
  - As output falls due to a rise in the cost of production, the unemployment may become structural if there is occupational immobility.
  - The inability of the unemployed to retrain themselves, or find themselves ill-equipped to take up jobs in other industries will lead to structural unemployment
- Explain no relationship between inflation and frictional unemployment
  - Frictional unemployment is voluntary and is not directly dependent on the state of economy.
  - It is affected by the level of information in the economy on job opportunities. Improved knowledge of available job opportunities will help alleviate the temporary loss of jobs as such workers are able to transit between jobs faster. Hence, there is no relationship between inflation and this particular type of unemployment

## Conclusion

Depending on the types of inflation and causes of unemployment, there may be a direct or indirect relationship between these two objectives. The relationships would also be dependent on the state of economy and nature of economy.

## **Suggested Answer to Part (b)**

### **Introduction**

- SOL should be material and non-material
  - Material aspect is usually measured by the change in national income (GDP or GNP). It is also measured in real terms to reflect the true purchasing power.
  - Real GDP per capita is used as a benchmark for measuring material SOL
  - Non-material aspects of SOL could be measured using stress levels, leisure, literacy rates, mortality rates, impact on environment etc
- SOL of average Singaporean
  - The change in population should also be considered – ie. per capita is usually used to reflect the impact on the average person in the economy. However, there may be poor distribution of benefits that is not reflected in the average figures. Thus, the GINI coefficient should be considered in order to show how the change in material SOL is distributed among the population.

### ***Agree or disagree that unemployment affects SOL and demonstrate the extent using key considerations***

- Explain how unemployment may affect SOL based on state of economy
  - Depending on the state of economy, rise in cyclical unemployment may be positive for material SOL since it reduces the erosion in the value of money.
  - If the economy is at the full employment level, there is no change in employment level but general price levels fall. This actually increases the real income. Holding all else constant, real GDP per capita actually rise.
  - If the economy is operating at the Keynesian range, unemployment will have a more significant negative impact as the unemployed lose the ability to consume goods and services.
  - Rising unemployment is also likely to have a negative impact on the unemployed due to the stress of looking for new jobs and losing the ability to maintain previous lifestyle and commitments
- Explain how unemployment may affect SOL based on type of unemployment
  - Depending on the type of unemployment, the impact may also be different.
  - If there is a rise in structural unemployment, material SOL will fall in the short run. However, the impact in the long run depends on whether these unemployed workers are able to retrain / reskill themselves to meet the demand of new jobs.
  - In addition, the unemployed who suffered due to the restructuring is likely to be for specific sunset industries and as such, may not be widespread. As such, the impact on average may not be significant.
  - If there is frictional unemployment, there may not be any significant change in SOL.

- In addition, the unemployment figures may not accurately reflect the incomes of households. The presence of underground economy will affect the true extent of unemployment on the material SOL.
- Explain how unemployment may affect SOL based on extent of Government involvement
  - If the government provides unemployment benefits, the immediate impact for the unemployed may not be significant. Thus, the material SOL may not fall significantly.
  - However, the Singapore government does not provide any unemployment benefits.
  - In addition, with the rise in unemployment, government tax revenue is likely to fall, affecting its ability to provide public amenities. Thus both the material as well as non-material aspect of SOL may fall. Eg of material aspects such as the number of hospitals or schools or playgrounds provided. Eg of non-material covers the quality of these provisions (mortality and literacy)
  - Government schemes in place may also help reduce the long term negative impact on material SOL of structural unemployment as the retraining and redesign of jobs help the unemployed obtain jobs.
- Explain other factors besides unemployment that affect SOL
  - Cyclical unemployment correlates positively with GDP, which reflects the purchasing power of households
  - Real GDP relies on inflation rate as well. A rise in inflation rate for a given level of GDP implies that there will be a fall in the purchasing power. This would reduce the material SOL.
  - Population changes affects the Real GDP per capita. Using such a benchmark provides only an average that does not fully reflect the distribution effect of any form of unemployment or GDP changes. As such, GINI coefficient should also be considered to measure the impact on material SOL.
  - In addition, the severity and duration of unemployment also play a part in determining the extent of impact on SOL of an average citizen. A high rate of unemployment implies that the negative impact is likely to be more significant and widespread.
  - Non-material aspects of SOL such as crime rates, pollution etc should also be considered to ascertain the impact on the SOL of an average citizen.

## **Conclusion**

- The additional use of HDI or MEW would be better to ascertain the SOL of an average citizen.
- Everyone places different values on the trade-off between leisure and work; between material and non-material aspects. Hence, it is difficult to use unemployment figures to determine the SOL

## Essay Question 5

United Kingdom's trade deficit with EU has hit £23.8 billion in the three months to February, 2016 while overall trade deficit with the rest of the world widened to £13.7billion, the biggest since March 2008.

Source: *The Daily Mail*, April 8, 2016

- (a) Explain the adverse impact of a rising trade deficit on an economy. [10]
- (b) Discuss whether demand management policy is the best way to address the economic problems caused by a rising trade deficit. [15]

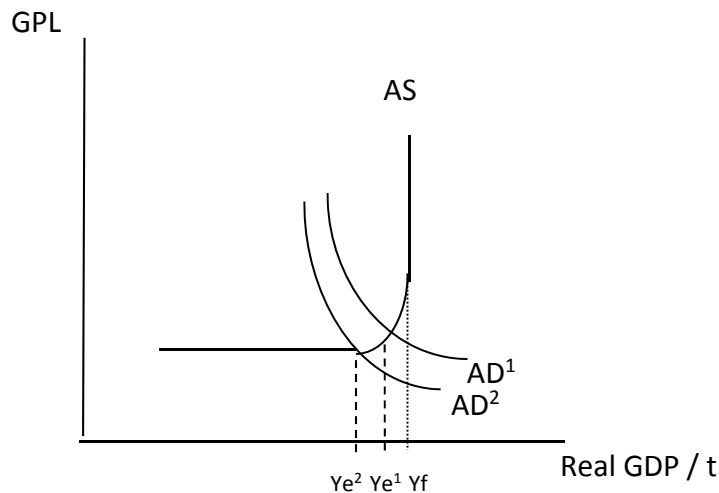
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### Suggested answer to Part (a)

Trade deficit occurs when a country's revenue from the export of goods is less than the expenditure on imported goods. The impact on an economy can be seen in terms of effect on level of real national income, level of employment of resources, overall balance of payment, exchange rate and economic growth in the long term. The extent of the impact of the rising trade deficit on the economy will also depend on whether it is persistent and large.

The most immediate impact of a rising trade deficit on the economy is through effect on the economy's aggregate demand (AD). The components of aggregate demand are consumption expenditure (C), investment expenditure (I), government expenditure (G) and net exports (X- M). A trade deficit means that (X-M) is now negative. Assuming other things remain unchanged, this will mean a fall in AD. AD curve will shift to the left from AD1 to AD2.

This leftward shift of AD will have an adverse effect on the economy if it is operating at or near full employment. With the fall in AD, inventory builds up and firms will cut back on production. There will be a fall in real national income from  $Y_{e1}$  to  $Y_{e2}$  as seen in the diagram. The level of employment of resources will also fall as demand for resources is derived from demand for the final output. The economy move further away from the full employment level and is experiencing demand deficient/cyclical unemployment.



The extent of the contraction of the economy will depend on the relative size of the (X-M) in the economy's AD. In an economy which is highly dependent on trade to generate output and employment such as Singapore, a given fall in trade value will result in greater fall in national income and employment as compared to an economy where (X-M) is relatively small in relation to the other components of AD.

A rising trade deficit will have an adverse effect on the overall position of the country's balance of payment. Assuming the other components of balance of payment remain unchanged, a rising trade deficit will result in a worsening of the overall position leading to a deficit or worsening deficit on the overall balance of payment.

Over time, a persistent trade deficit will reduce the attractiveness of the economy to foreign investors as the rate of return on investment projects will be reduced and often uncertain. The lower level of foreign investment will adversely affect growth and employment. The inflow of foreign direct investment contributes to investment expenditure, a component of AD. With the fall in investment, AD falls and output and employment will fall. In the longer term, there will be slower expansion of productive capacity leading to slower shift of the aggregate supply curve and thus slower potential growth.

The rising trade deficit, if persistent, will also have adverse effect on exchange rate (such as those on managed float and fixed exchange rate). The deficit will lead to a depreciation of the currency due to the higher supply and lower demand for the currency in the forex market. A fall in the exchange rate could lead to higher price of imports in terms of domestic currency. Cost of production will increase especially if the economy is highly dependent on inputs for production which will affect their export price competitiveness if it is a very large proportion of unit cost of production. This will further worsen trade deficit and negatively affect growth and employment.

A rising and persistent trade deficit (which worsens the overall BOP) may lead to other problems such as depletion of foreign exchange reserves if the economy adopts a managed or fixed exchange rate system. This may eventually lead to the need to borrow in order to finance the deficit. Borrowing will result in greater burden on the economy as it has to service the debt. This will mean fewer resources will be available for future investment and spending on training leading to a slower shift of the AS curve to the right. Potential economic growth will be impeded with a potential rise in structural unemployment.

## **Suggested answer to Part (b)**

### **Introduction**

A rising trade deficit brings about various economic problems as seen in part (a). Given these problems, government could adopt various policies such as demand management policies, supply-side policies and trade policies to reduce import expenditure and increase export revenue. Whether demand management policy is the best to address the economic problems will also depend on whether the rising trade deficit is persistent and large in relation to the overall GDP. The various economic problems caused by the rising deficit could be addressed first by demand management policy.

### **Body:**

**Thesis: Demand management policy is the best policy to address economic problems of rising trade deficit.**

Cause of a rising trade deficit: Rise in import expenditure leading to a fall in net exports, causing a fall in AD.

Demand management policy refers to actions taken by the government to adjust the level of aggregate demand in order to achieve various macroeconomic aims. In this case, demand management policy can be used to reduce problem of demand deficient unemployment experienced as a result of rising trade deficit. Expansionary fiscal or monetary policy can be used to increase aggregate demand. In the case of expansionary fiscal policy, government could increase its own expenditure on infrastructure and cut direct taxes, like reduce income tax for households and corporate tax for firms. Reduction in income taxes will increase disposable income of households. This will increase their ability to consume. Consumer expenditure of domestic goods will increase. Reduction in corporate tax for firms will increase rate of returns of investment projects (their post-tax profits) assuming other things unchanged. This will induce higher level of investment. With increase in consumption and investment, aggregate demand will increase. With higher aggregate demand and there is excess capacity, producers will react to the fall in inventory and hire more factors of production like labour. (labour is a derived demand) Real output and employment will increase. This will address the economic problem of demand deficient unemployment. However, part of the increase in consumption and investment will result in increase in imports thus worsening the trade deficit and would aggravate the other economic problems caused by the deficit.

To address the economic problems caused by trade deficit, government could adopt policies targeted at reducing imports expenditure directly. Expenditure reducing policy such as contractionary fiscal and monetary policy could be used to deflate the economy. Contractionary fiscal policy influences the level of aggregate demand through an increase in income tax and reduction in government expenditure. The increase in income taxes will reduce households' disposable income and hence cause consumers to reduce consumption of imported goods. A reduction in government expenditure will also mean that less may be spent on imported goods

by the government. This would reduce import expenditure. Net exports will improve (assuming no change in export revenue) reducing the rising trade deficit. This could reduce the problem of balance of payment deficit (assuming no change in capital account) and the consequences of exchange rate depreciation for an economy with large demand for imported inputs.

However, the deflationary policy through the contractionary fiscal policy may not address the unemployment problem. A reduction in disposable income would cause not only import expenditure to fall but also expenditure on domestically produced goods to decrease. Hence, domestic production would decrease and may lead to higher level of demand deficient unemployment. Thus demand-management policies may not be an appropriate policy to resolve the economic problems caused by the rising trade deficit.

**Anti-thesis: Demand management policy is not the best way to address the economic problems caused by a rising trade deficit.**

Cause of rising trade deficit: Loss of export competitiveness or quality of exports, leading to a fall in export revenue and thus rising trade deficit.

Measures to improve export revenue could be more effective in dealing with trade deficit and addressing the various economic problems caused by it. These measures include supply-side and trade policies.

However, this policy might be ineffective if the foreign country retaliates by imposing tariffs on the given country's exports as well. There is also the possible feedback effect. The fall in import expenditure will mean a fall in export revenue of the trading partners. This will lead to a fall in their national income thus reducing their ability to import. This is the beggar-thy neighbour effect. All these will render the policy ineffective.

One of the main causes of the rising trade deficit is the loss of export competitiveness leading to a fall in export revenue and thus trade deficit. Measures to improve export revenue could be more effective in dealing with trade deficit and addressing the various economic problems caused by it. These measures include supply –side policies and trade policies.

Supply–side policies refer to actions taken to influence aggregate supply. Examples of such policies include government spending on infrastructure, investment in human capital, tax incentives to promote research and development and to attract foreign direct investment.

In order to increase export revenue, it is necessary to improve both price and non-price competitiveness of the exports. Government could provide tax incentives for firms to invest in acquisition of new capital goods with new technology, undertake R&D to improve product quality/innovation or to improve methods of production. Improvements in these areas will reduce costs of production thus improving price competitiveness of exports while product innovation will improve non-price competition.



With rapid changes in technology and increasing globalisation, there are changes in pattern of comparative advantage. In order to improve export revenue, the economy needs to find new niche areas as their existing comparative advantage gets eroded. Government could identify new areas of growth and support the development of these areas. Support could be in the provision of new infrastructure to cater to the new industries for example in the case of Singapore, government build new infrastructures such as One North, Biopolis, and Fusionpolis to support new industries. Reduction in corporate taxes, provision of various tax incentives on R&D expenditure will induce firms to increase R&D activities leading to new exports and higher value exports. In Singapore, the Productivity and Innovation Credit Scheme (PIC) was also used by business firms to embrace technology to raise productivity to enhance price competitiveness for exports. Taken as a package, improvement in infrastructure and provision of tax incentives will also improve the rate of returns on investment.

This will improve the investment climate for foreign investors leading to increase in foreign direct investment. Government expenditure on training and retraining of workers will allow workers to upgrade their skills or equip them with new skills set relevant in the new areas of growth to reduce structural unemployment. With skills upgraded, labour productivity will increase and cost of production will fall leading to greater price competitiveness of exports. With the acquisition of new skills set relevant to new export industries allow for the expansion of these industries to further increase exports. All these could lead to an increase in export revenue. Rising trade deficit will decrease, national output will increase with the increase in net exports (assuming no change in import expenditure) and foreign direct investment and employment level will increase.

In the long run, with improvement in quality of factors of production, there will also be sustainable growth with rise in AS. With the improvement in trade position, the exchange rate will improve. With the improvement in trade position, the exchange rate will improve.

However, the main limitation of using supply-side policies is the long time period required for the policy to be effective and the outcome from R&D investment is often uncertain. Government expenditure on infrastructure, tax incentives and provision of R&D grants require huge amount of tax revenue which may be a great strain on government budget which could lead to budget deficit.

The government can also introduce trade policy to increase demand for exports by seeking new export markets. Singapore achieved much macro benefits through signing of more free trade agreements. Free Trade Agreements are binding agreements between two or more countries to reduce or remove trade barriers and to facilitate cross border movement of goods and services between the territories of the parties. They typically include reducing tariffs on imports and relaxing restrictions on capital flows. Gains from trade are from theory of comparative advantage. Specialisation and free trade has expanded production and consumption possibilities for countries. The production will be greater and there will be economic growth, overcoming the economic problems from rising trade deficit.

Gains from free trade agreements include the diversification to avoid overdependence on any particular trade partner. Being a trade-driven economy, Singapore is highly susceptible to external shocks from her trade partners. For example, if China experiences an economic downturn, demand for Singapore's exports may be reduced. A reduction in Singapore's exports will reduce net exports, which in turn reduces AD, and economic growth and demand deficient unemployment will rise. Having a closer economic integration with more other economies in the event of a regional downturn, Singapore's exports demand may still be supported by other markets.

To reduce imports, the government could also impose tariffs on imported goods. This would cause the price of imports to become relatively more expensive compared to domestically produced goods. Hence consumers would switch away from imports to domestically produced goods if they are of equal quality. This increase consumption will increase aggregate demand leading to higher level of employment of resources. Economic problem of demand deficient unemployment will fall.

However, this policy might be ineffective if the foreign country retaliates by imposing tariffs on the given country's exports as well. There is also the possible feedback effect. The fall in import expenditure will mean a fall in export revenue of the trading partners. This will lead to a fall in their national income thus reducing their ability to import. This is the beggar-thy neighbour effect. All these will render the policy ineffective.

### **Conclusion:**

Stand/Substantiation: Demand management policy is a good policy to address the economic problems caused by a rising trade deficit but it is not able to overcome all the effects arising from the rising trade deficit and the root cause of the rising trade deficit. The use of only demand management policy can also lead to unintended macro consequences. A combination of policies are more suited, and the government when faced with multiple negative macro effects will need to implement other policies like expenditure reducing, supply side, trade policy and possible even deflationary fiscal policy. The Timbergen rule will apply here to overcome unintended consequences from multiple macro problems tackled with limited policies that might only address AD and not AS or short run and not the long run cases. There is also the need to consider the nature of the economy such as the trade reliance ratio to total real GDP.

## Essay question 6

The small island nation of 5 million people boasts the world's second-busiest seaport, a far higher per-capita income than its former British overlord, and a raft of number-one rankings on lists ranging from least-corrupt to most-business-friendly countries. So long as globalisation continues, Singapore thrives.

Source: Adapted from *TIME*, 28<sup>th</sup> May 2014

Discuss the extent to which globalisation has helped Singapore to achieve her economic aims. [25]

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## Suggested answer

### Introduction

Globalisation is the increased integration of economies around the world, through the movement of goods, services, capital, labour and knowledge across international borders. Singapore has adopted an open approach towards development, and globalisation has led to both positive and negative impact on Singapore's aims. Singapore's aims would include both microeconomic aims (efficiency and equity) as well as macroeconomic aims (sustained growth, low inflation, healthy balance of payments and low unemployment).

Define the different economic aims.

- Sustained growth refers to growth at low inflation rates. This would involve actual growth (which refers to an increase in national income) as well as potential growth (an increase in productive capacity).
- Unemployment refers to factors of production not being used in the production of goods and services. Therefore, people in the labour force who are without work but are actively seeking jobs.
- Inflation refers to a sustained increase in the general price level.
- BOP is a statement of all the international transactions of a country with the rest of the world over a period of time, usually a year. The BOP comprises of the current account as well as the capital account.
- Efficiency refers to both productive and allocative efficiency. Productive efficiency would mean that firms are producing at the lowest cost possible. Allocative efficiency means that the right amount of the right type of goods are produced such that society's welfare is maximised.
- Equity in income distribution refers to a distribution of income that is fair and just.

**Thesis: Greater trade and capital flows has helped Singapore to achieve higher actual growth and lower unemployment, and a healthy BOP**

Globalisation has led to reduced trade barriers, such as removal of tariffs through free trade agreements. This has led to greater trade, and a higher amount of exports and imports for Singapore. With a larger market to sell her goods to, this has enabled Singapore's exports to increase. Due to her skilled workforce, Singapore has a comparative advantage in high value-added goods and services and is able to produce these goods at a lower opportunity cost. Examples of such goods are refined petroleum, pharmaceutical products and integrated circuits. This has led to higher net exports for Singapore, especially as Singapore has a small domestic market. By producing more for the global market, this has enabled firms in Singapore to reap internal economies of scale due to reasons such as indivisibilities of capital, which enable the firms to produce at lower unit cost, and pass it on to consumers in terms of lower prices. This allows Singapore's exports to achieve price competitiveness, leading to higher export revenue.

With greater capital flows, there has also been an influx of foreign investments into the country. Multi-national companies (MNCs), such as Rolls-Royce and Novartis can choose to set up production plants in Singapore. Firms might be attracted to carry out their production activities in Singapore due to her skilled labour, good infrastructure as well as pro-business policies. This would lead to an increase in investments.

With an increase in net exports and investments, this leads to higher Aggregate Demand, as  $AD = \text{Consumption (C)} + \text{Investment (I)} + \text{Govt spending (G)} + \text{Net exports (X-M)}$ . Firms face an unplanned decrease in inventories, and this is a signal for firms to increase production. Firms would then hire more factors of production such as workers. Workers then experience higher income, and will spend a part of the increase in income on domestic goods and services. This would then lead to unplanned fall in inventories for other firms, and the cycle repeats. This would eventually lead to a multiple increase in national income, hence actual growth. Therefore, an increase in net exports leads to a rightward shift of the AD curve from  $AD_0$  to  $AD_1$ , and a multiple increase in national income from  $Y_0$  to  $Y_1$ , as shown in Figure A below.

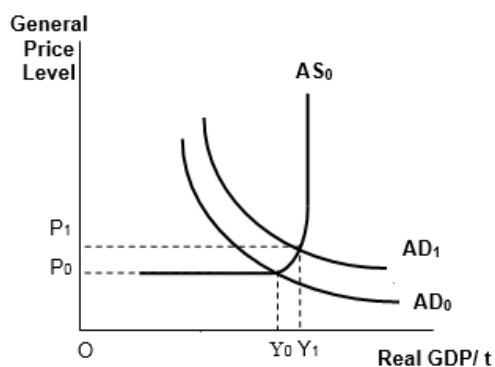


Figure A

As Singapore is an export-oriented economy, this impact is significant as  $X+M$  takes up a large proportion of Singapore's GDP. As demand for workers is a derived demand, and more workers are hired due to greater production of goods and services, this would lead to lower demand-deficient unemployment. Higher net exports would also lead to an improvement of the current account under BOP.

**Thesis: Higher amount of imports has helped Singapore to achieve lower inflation and facilitates export-oriented growth**

Due to lack of natural resources, Singapore is heavily dependent on imports for final goods as well as inputs for production. With the removal or reduction of trade barriers, Singapore is able to import more goods. Singapore can import goods which require labour-intensive or land-intensive production, such as agricultural products e.g. vegetables and fruits. Therefore, Singapore imports such products from land-abundant and labour-abundant countries like Thailand and Malaysia.

With lower prices of imports, this would lead to lower marginal costs of production. Therefore, as seen in Figure B below, the horizontal portion of the AS shifts downwards. This leads to lower cost-push inflation in Singapore.

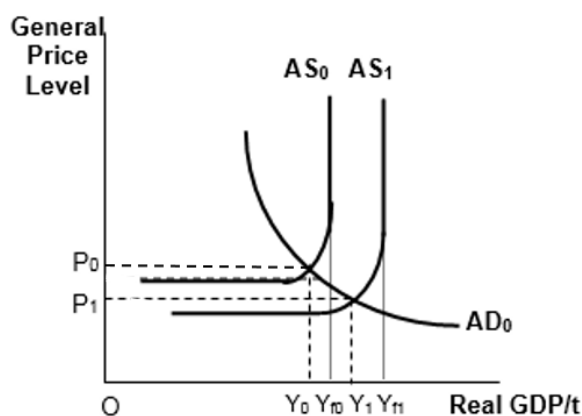


Figure B

Imports also enables Singapore to overcome her resource constraints. Although Singapore is not endowed with natural sources of oil, she is able to produce refined petroleum by purchasing crude oil imports from other countries. There is a high proportion of imported inputs in Singapore's exports, therefore imports also help to boost Singapore's growth through enabling greater production of exports.

**Thesis: Labour flows and capital flows has helped Singapore to achieve sustained growth (labour and capital flows) – lack of domestic capital, small population**

Globalisation has also led to relaxation of immigration laws and introduction of schemes, such as employment passes, to allow foreigners to work in the country. This helps to overcome Singapore's constraint due to her small population, and an ageing population. This would lead to a tight labour market and push up wage costs, leading to higher costs of production and loss of competitiveness for Singapore firms.

With more foreigners coming to work in Singapore, this has led to a increased quantity of labour in Singapore. This has led to a rightwards shift of the vertical portion of the AS curve, as the productive capacity (max amount of goods and services an economy can produce) has increased. This has led to potential growth in Singapore, enabling sustained growth (growth at low rates of inflation) to occur. This is important especially, as Singapore economy is operating near full-employment, and is hence vulnerable to demand-pull inflation.

The influx of foreign labour, ranging from low-skilled labour such as construction workers and cleaners, to high-skilled labour such as nurses and scientists, has helped to ease the manpower crunch. This has prevented wages from rising further due to a tight labour market, hence leading to lower marginal costs of production. The horizontal portion of the AS curve would shift downwards.

With foreign direct investments, this would lead to technological transfer as MNCs would bring in new technology and methods of production. This would lead to greater productivity as more output can be produced with the same amount of inputs. With greater amount of capital, this would also lead to higher quantities of factors of production. This would lead to potential growth, as productive capacity has increased.

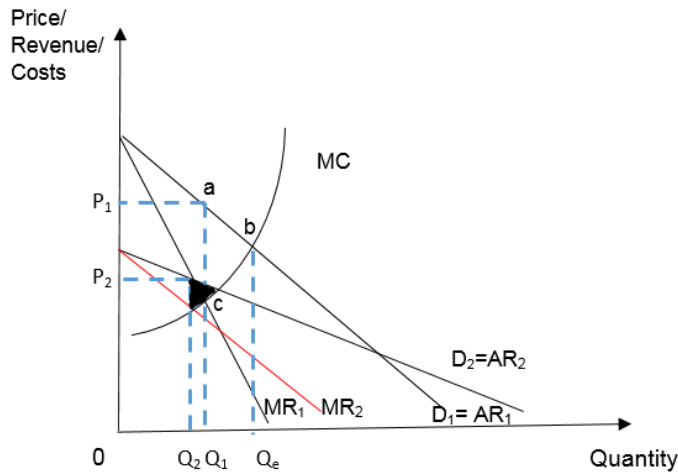
As seen in Figure B above, the overall effect would be a shift of the AS curve from AS0 to AS1. This has led to lower cost-push inflation, and a fall in the general price levels from  $P_0$  to  $P_2$ .

**Thesis: Greater trade flows has helped Singapore to achieve greater efficiency (competition from MNCs)**

The reduction of trade barriers would also mean that local firms are exposed to foreign competition. Therefore, firms are incentivised to compete on the basis of price as well as quality of goods. If local firms are less competitive, they would lose out in the export market or local consumers would switch to consuming imports instead. This would lead to a fall in revenue as well as profits for the firm, *ceteris paribus*. Hence, firms would embark on R&D projects to use more technology to enable them to increase productivity and able to produce at lower cost, so that they can pass it on to consumers in terms of lower prices. This would lead to greater efficiency.

As domestic firms are exposed to global competition, they may experience a fall in the demand for their own products as well as increased price elasticity, as consumers turn to imported goods. This would lead to a fall in welfare loss due to market dominance.

Assume that domestic firms were initially producing at  $MR = MC$  at price  $P_1$  and quantity  $Q_1$ . A fall in demand shifts their demand curve from  $D_1$  to  $D_2$ , *ceteris paribus*. This would lead to a new price  $P_2$  and quantity  $Q_2$ . The amount of welfare loss has fallen to the shaded area from the bigger area of  $abc$ .



Trade also enables countries to specialise based on their comparative advantage(CA), resulting in a more efficient allocation of resources. A country possesses comparative advantage in a particular good if it can produce the good at a lower opportunity cost, hence allowing for mutually beneficial trade to occur between countries. Singapore possesses CA in capital-intensive production due to her high-skilled labour and would hence produce goods such as refined petrochemical products as well as pharmaceuticals. Singapore would import goods which require labour-intensive production, such as textiles from China. This would enable the production of goods to be carried out by the relatively more efficient producer, hence improving efficiency in the allocation of resources.

### **Anti-Thesis: Globalisation has led to higher income inequality**

Globalisation has also led to greater exposure to foreign competition. Certain industries might expand if they are able to cope with foreign competition while certain industries might suffer due to greater foreign competition. The factors of production in these two sectors will be subject to increasing and decreasing demand respectively.

Since Singapore's comparative advantage is in high-tech manufacturing and financial and consultancy services, demand for skilled labour, in particular, will rise, whilst demand for low-skilled labour will fall. Furthermore, with the influx of low-skilled labour from other countries, this has depressed the wages of low-skilled workers, such as cleaners.

Taken together, a further increase in demand for skilled labour and decrease in demand for unskilled labour widens the income gap between the two groups.

### **Anti-Thesis: Globalisation has led to higher structural unemployment**

Globalisation could also lead to higher structural unemployment. With the rise of emerging economies, Singapore lost her comparative advantage in producing labour-intensive goods such as garments and textiles, as the emerging economies were able to produce such goods at lower opportunity cost due to abundance of labour. This led to unemployment in such industries.

As Singapore moved towards a knowledge-based industry and more jobs were created in the finance and pharmaceutical industries, the unemployed workers were unable to find jobs in such sectors due to a mismatch of skills. Therefore, this led to higher structural unemployment.

### **Anti-Thesis: Globalisation has led to lower growth and higher inflation**

Singapore's heavy dependence on exports and FDI has also made her vulnerable to external shocks. For example, during the 2008 US subprime crisis, which led to a fall in national income in many countries. As countries experienced a fall in national income, consumers would cut back on spending and spend less on imports. This would lead to a fall in net exports for Singapore, leading to a fall in actual growth due to a multiple fall in national income. Foreign firms would also withdraw their investments in Singapore, threatening actual as well as potential growth.

Singapore's reliance on imports also makes her susceptible to imported inflation. If there is a supply shock such as conflict in oil producing countries that lead to an increase in prices of oil, this would lead to higher prices of imports, leading to higher costs of production. This would lead to higher cost-push inflation.

### **Conclusion**

Globalisation has helped Singapore to achieve her economic aims to a large extent. This is due to her small domestic market and lack of natural resources that necessitates an open approach towards development. Other factors such as pro-business policies (e.g. low corporate tax rate), a strong intellectual property rights framework, excellent infrastructure and a skilled workforce has helped to attract FDI to Singapore.

While Singapore does suffer from greater vulnerability to external shocks and imported inflation, there are policies that the government can implement to mitigate such effects. An example would be signing of FTAs with many countries to diversify her trade partners, as well as the use of XR policy to keep the Singapore dollar strong to curb imported inflation. Subsidies to send workers for retraining could also help to address structural unemployment and schemes such as the Workfare Income Supplement scheme could be used to provide additional income for low-skilled workers who are adversely affected.