

#### Question 1

The amount of goods and services that can be produced in an economy is insufficient to satisfy the wants of its population. This leads to the economic consequences of scarcity and choice.

- (a) Explain how a production possibility curve can be used to show the concepts of underutilisation of economic resources and the opportunity cost. [10]
- (b) Discuss whether it is possible to increase the total production of goods and services in an economy without resulting in environmental damage or other unintended consequences. [15]

#### **Suggested Answer**

#### (a)

#### Introduction

The Production Possibility Curve shows all the different maximum attainable combinations of goods and services that can be produced in an economy, when all available resources are fully and efficiently used at a given state of technology. When available resources are not utilized or underutilized (unemployed or underemployed?), production takes place at a point within the curve. Also, since resources are scarce, production of one good must imply trading-off the production of another good in that economy. Hence, all production of goods and services has an opportunity cost.

#### Body

#### R1: Explain how the PPC can show underutilisation of economic resources

When the economy is producing at a point within the PPC, the economy is not fully utilising its resources as any point on the PPC frontier shows the combination of the maximum amount of consumer and capital goods that can be produced with efficient use of all available resources. If the economy is producing at potential and fully utilising all its resources, the economy should be anywhere on the PPC frontier.

In diagram 1 below at point A, the economy is producing inside the PPC and thus is not fully utilising its resources. This is because firms and the government can decide to produce more consumer and capital goods by utilising greater use of existing resources (i.e. reducing unemployment of resources) and by utilising its resources more efficiently (i.e. reducing underemployment of resources). This will result in increased output of both capital and consumer goods as illustrated in the diagram at point C. Point C (along the curve) shows the combination of the maximum amount of consumer goods and capital goods that can be produced with efficient use of all available resources. Hence points on the PPC illustrate efficient and full employment of all available resources and points within illustrate possible underutilisation of resources. **Consumer goods (billion units)** 



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#### R2: Explain how the PPC can show opportunity cost

The standard PPC is usually concave to the origin, due to the Law of Increasing Opportunity Cost. From the diagram below, the opportunity cost of the 1st unit of capital goods is 5 units of consumer goods. To obtain the 2nd unit of capital goods, 10 units of consumer goods have to be foregone and so on. Thus, the opportunity cost increases together with the production of capital goods. The opportunity cost increases because resources in the economy are not perfectly homogeneous or equally suited in the production of all goods. Some resources are just better suited for the production of some goods than they are for other goods. For example, the steel which is used in car production will eventually get harder to procure. Car producers would then have to source for a similar metal with the quality not being as good as steel. This means that more and more of this metal would have to be transferred from the production of another good and taken from another industry (e.g. production of construction tools) to make up for the lack in quality of this substitute metal in making cars.

However, resources that are least suited for production of consumer goods will be deployed first. Hence, to produce the 1st unit of capital goods, the opportunity cost is only 5 units of consumer goods. As the production of capital goods increases, resources that are increasingly more suitable for consumer goods production have to be re-deployed. This leads to more and more units of consumer goods being sacrificed. i.e. increasing opportunity cost. Since the slope of the PPC represents the opportunity cost of an additional unit of the good on the horizontal axis, the increasing opportunity cost gives rise to a PPC that becomes steeper and steeper as we move from point A to E.



Level	Descriptors	Marks
L3	<ul> <li>Breadth</li> <li>Covers both (R1) on how the PPC shows underutilisation of economic resources and (R2) on how the PPC shows opportunity cost</li> </ul>	8-10
	<ul> <li>Depth</li> <li>Analyse and explain with the tools of analysis of a PPC diagram with accurate annotations and figures to illustrate the concepts</li> <li>Explain with rigour and in depth.</li> </ul>	
L2	Lacking in any one of the L3 criterions	5-7
L1	<ul> <li>Largely irrelevant response</li> <li>Descriptive response with non-existent or minimal or application of economic concepts or theories</li> <li>Serious and pervasive conceptual errors</li> </ul>	1-4

(b) Discuss whether it is possible to increase the total production of goods and services in an economy without resulting in environmental damage or other unintended consequences. [15]

#### R1: Explain how total production increases with no or minimal unintended consequences

An increase in total production of goods and services in an economy can be illustrated with both a shifting out of the PPC frontier and a movement of actual production within the frontier to a point on the frontier. In other words, the increase in total production of goods and services must represent both actual (movement of point A to point B) and potential (shifting out of the PPC frontier) growth. With both actual and potential growth and the resulting increase in production of goods and services, firms will increase their derived demand for labour. Hence, there will be no demand-deficient unemployment, ceteris paribus as the economy is producing on the PPC frontier at point B, utilizing all available resources in the economy at the full employment level. The economy can also be said to be productively efficient from the economy's perspective and the material standard of living will have increased. This is illustrated below in the diagram.





#### Ev1: Possible unintended consequences with an increase in total production

With an increase in total production of goods and services, there is depletion of the limited amount of resources. Hence the amount of factor inputs available could be reduced in the future. Subsequently, the outward shifts of the PPC frontier will be at a decreasing rate, and this will reduce the ability of the economy to increase the production of goods and services for future generations. This will have an unintended consequence where the general price level of goods and services will start to rise since the actual growth rate will now be greater than the potential growth rate. This would imply that the output gap, and hence demand-deficient unemployment will decrease but with a resulting rise in the GPL as a trade-off. <u>Alternative R1 using AD/AS framework:</u>

#### R1: Explain how total production increases with no or minimal unintended consequences

Non-inflationary sustained growth is achieved when AD shifts right in tandem with AS. This results in an increase in both actual and potential growth, an increase in employment or a decrease in demand-deficient unemployment and price stability.

Referring to the diagram below, an increase in AD from AD0 to AD1 will raise the real output from Y0 to Yf0, representing an increase in actual growth or output. An increase in AS from AS0 to AS1 will raise the potential full employment output from Yf0 to Yf1, representing an increase in potential growth. For continuous or sustained economic growth to occur there should be an increase in the productive capacity where AS0 shifts right to AS1. When AS shifts rightwards together with the increase in AD, real output increases further from Yf0 to Yf1, and there is actual growth. In this diagram, since the price level stays at P1, non-inflationary growth is achieved. However, low inflation (e.g. roughly between 1% to 3%) is also acceptable to be considered an non-inflationary growth.



#### Alternative Ev1 (growth with negative impact on the environment):

#### Trade-off between Growth and Sustainability

Economic growth is often accompanied by rapid industrialisation which, unless carefully managed, causes deterioration of the environment such as air and water pollution. The more rapid the growth, the more serious is the problem associated with negative externalities. China for example is amongst the countries which experienced the fastest economic growth, but it is also the top emitter of greenhouse gases each year. Development and growth may also bring about the problem of urbanisation and the destruction of green spaces and the depletion of natural and non-renewable resources such as over-fishing. This may lead to insufficient amounts of natural resources for future generations, thus impeding potential growth.

#### Other possible unintended consequences

(1) Trade-off between Growth and Price Stability

(2) Trade-off between Growth and Unemployment

(3) Trade-off between Growth and Inclusiveness

(4) Trade-off between present and future consumption

(5) Trade-off in terms of the strain on workers having to work longer hours and a potential deterioration of their living standards.

#### R2: Explain how total production in an economy increases with no or minimal impact on the environment

#### Explain actual growth using PPC framework

Actual growth is defined as the expansion or increase in an economy's level of output or real GDP over time. This can be illustrated with a movement of a point within the PPC to a point on the PPC frontier (as illustrated by the movement of

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point A to point B in the diagram above). This represents an increase in the total production of goods and services in the economy (i.e. actual growth).

#### Alternative explanation on actual growth using AD/AS framework

Actual growth is defined as the expansion or increase in an economy's level of output or real GDP over time. This can be illustrated with AD shifting to the right or with AS shifting down or both. Real GDP increases through the production of goods and services, thus decreasing DD-deficient unemployment as resources are utilised for production. This will also result in the narrowing of the output gap.

#### Explain actual growth with no or minimal environmental impact

Sustainable growth indicates a rate of growth that can be maintained without creating other significant economic problems. Usually this is achieved by government intervention. There are two main ways in which to achieve sustainable growth.

#### 1. Tradable / Marketable Permits

Tradable permits is a quota system where the government issues permits to firms allowing them to pollute during production. Firms may trade these permits by buying (when they pollute in excess) or sell them to other firms (when they have unused permits). For example, the use of tradable pollution permits to control discharge of wastes into the environment. This method is sometimes called a "Cap and Trade" system. The government places a "cap" (i.e. quota or limit) on the total permissible level of pollution. The government will estimate the socially efficient level of emission before it decides on the corresponding number of permits to issue to individual firms. The permits give the firms the legal 'right' to pollute. Firms are allowed to pollute up to the permitted level. Thus firms are able to produce within a socially acceptable pollution level and the government is able to achieve growth in a sustainable manner.

#### 2. Green technology

Firms can also utilise green technology which limits the amount of pollution during the production process. Using green technology would allow the socially optimal quantity of production (Qs) to be increased by firms while still adhering to the socially permissible amount of pollution. In other words, the quantity where MSB=MSC can increase without any negative externalities.



#### Lack of information with tradable permits

To achieve an efficient allocation of permits for the industry, the government must be able to determine the quota or optimal quantity of permits to issue accurately. This requires the government to have information on the level of permissible pollution corresponding to the socially optimal level of output. In reality, such information is not easy to obtain or estimate accurately. If too many permits are issued, pollution will be more than is socially acceptable. Too little, and production and actual growth would be impacted.

- Can also explain lack of compliance and high administrative costs
- For green technology, high R&D and implementation costs require LR supernormal profits. Possible trade-off with LR growth due to high costs for firms.

#### Summative Conclusion:

Sustainable growth is usually not possible without government intervention and policies. This is because firms tend to be profit-oriented, and mitigating the impact on the environment tends to be counterproductive to profit-maximisation. For example, investing in green technology is costly with high opportunity costs. Profits could have been channelled to boosting market share and power instead of taking a risk in new technology which may not bear dividends. Hence, whether sustainable growth is achieved or not will depend in part on the level of development and affluence of the country. More developed countries tend to have stricter regulation on pollution and the infrastructure and resources to enforce them. Consumers and producers tend to be more compliant as well with increased education and awareness.

The trade-off between growth and sustainability is also correlated in part with the level of development. Developing countries tend to place greater importance on growth and bread and butter issues as opposed to the developed countries who have already achieved an acceptable level of growth. Hence, overall, it is the developed countries who may be more successful at achieving sustainable growth and at mitigating the unintended consequences.

Level	Descriptors	Marks
L3	<ul> <li>Breadth &amp; Application         <ul> <li>Covers both the impact on unintended consequences and the environment from an increase in total production in an economy - non-inflationary sustained growth, tradable permits and green technology, or other other relevant measures, are analysed using the appropriate tool of analysis e.g. AD/AS diagram</li> </ul> </li> <li>Depth         <ul> <li>Applies relevant economic concepts or theories</li> <li>Explains with rigour and detail</li> <li>Explains and illustrates with relevant tool(s) of analysis (<i>e.g. diagrams and</i></li> </ul> </li> </ul>	8-10
L2	examples) which are accurate and thoroughly explained Lacking in any one of the L3 criterions	5-7
L1	<ul> <li>Largely irrelevant response (meaning of question not properly grasped)</li> <li>Descriptive response with non-existent or minimal or application of economic concepts or theories</li> <li>Serious and pervasive conceptual errors</li> </ul>	1-4
	Evaluation	
E3	<ul> <li>Takes a clear overall stand (a summative conclusion) that is comprehensively justified by providing convincing evaluative comments on the overall limitations of the respective impacts on unintended consequences and the environment from an increase in total production in an economy</li> <li>Some comparisons on the extent of the impacts between different economies (e.g. developed vs developing economies)</li> </ul>	4-5
E2	<ul> <li>Takes a clear overall stand which is only partially justified as only some of the requirements is well evaluated with supportive arguments presented in the answer and is linked to the context of the question</li> <li>Evaluates both requirements but the overall stand is unclear</li> </ul>	2-3
E1	Provides evaluative statement for 1 requirement	1

#### Question 2

	TYS N2023 Q2			
Bad	I weather and falls in consumer incomes can have different impacts on the prices of agricultural products			
suc	such as vegetables, rice and grain.			
(a)	Explain the different impacts on the prices of vegetables due to bad weather and falls in consumer			
	incomes. [10]			
(b)	Discuss the effectiveness of different measures that might ensure stability of food prices to			
	consumers. [15]			

#### Introduction: Key direction of essay

The market equilibrium price for food is the price exchanged when the quantity demanded equals the quantity supplied. The different impacts in terms of direction/extent of change on the prices of vegetables due to bad weather and falls in consumer incomes is due to factors that shift demand and supply curves and elasticities concepts.

#### R1: Explain the impacts on prices of vegetables due to bad weather (with consideration of PED)

When there are changes in climatic conditions and bad weather, poor harvest will cause the supply of vegetables to be adversely affected and fall. Supply of vegetables decreases from  $S_0$  to  $S_1$ , at  $P_0$  with negative supply shocks such as changes in climatic conditions and bad weather (Diagram). A shortage of  $Q_0Q_0$  is created at  $P_0$  since quantity supplied is lesser than quantity demanded at  $P_0$ .



The shortage creates an upward pressure on price and consumers respond by reducing the quantity demanded while sellers increase the quantity that they are willing to offer in the market, quantity supplied increases. Price adjustment process occurs until the new quantity demanded equals to quantity supplied at the new equilibrium P1 and Q1.

We assume that the demand for vegetables is price elastic (|PED| <1) as due to the high degree of necessity.

Following a bad harvest, when supply falls from S<sub>0</sub> to S<sub>1</sub>, it causes price to rise by a relatively large extent from P<sub>0</sub> to P<sub>1</sub> (Diagram 1) and results in a less than proportionate fall in quantity demanded by consumers with a relatively price inelastic demand (relatively gentle demand curve) for vegetables. For example, this could include vegetable lovers and vegetarians who have a high degree of necessity for vegetarians with little substitutes of vegetables.

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<u>R2:Explain the different impacts on prices of vegetables due to fall in consumer incomes (with consideration of YED)</u>

With fall in consumer incomes, disposable income and purchasing power of consumers fall. Depending
on the sign and magnitude of YED of vegetables, there are different degrees of responsiveness of
demand to a change in income of consumers, ceteris paribus.



Income inelastic (0 < YED < 1) - Necessities (House Brand Vegetables)

- If demand for necessities such as vegetables from supermarkets like Fairprice and Shengsiong is income inelastic, a fall in income leads to a less than proportionate fall in demand.
- When the demand decreases from D<sub>0</sub> to D<sub>necessity</sub> at P<sub>0</sub> (Diagram 2), there will be a surplus since quantity demanded is less than quantity supplied and the price of the good will decrease from P<sub>0</sub> to P<sub>0</sub> the quantity supplied will ultimately decrease from Q<sub>0</sub> to Q<sub>n</sub>. This involves a downward movement along the supply curve S<sub>0</sub> from point E<sub>0</sub> to point E<sub>1</sub> equilibrium price for the house brand vegetables (necessity good).
- As people have less disposable income, they may consume less staple vegetables but since vegetables are for sustaining essential nutrients, the fall in consumption for necessity will not be significant.

# <u>Note:</u> The consideration of different combined shifts of DDSS is not required in the scope of this 10m question as the R1 and R2 focus is on the 'different' impact of the two non-price determinants of DD/SS (bad weather and consumer income) in the question.

Students could also refer to a price inelastic supply curve or to explain the extent of the price fall following a fall in income.

#### **Conclusion:**

The different impacts on the extent of increase in price of vegetables is due to change in non-price determinant of supply such as bad weather, with consideration of PED of the vegetables. Depending on the nature of the good and the magnitude and sign of YED, there could be different impacts on the magnitude and direction of change in price of vegetables.

	Level	Descriptors	Marks
I	L3	Breadth	8-10
		<ul> <li>Cover both (R1) on the impacts on prices of vegetables due to bad weather (with consideration of PED)and (R2) Explain the different impacts on prices of vegetables due to fall in consumer incomes (with consideration of YED)</li> <li>Depth</li> <li>Analyse and explain with the tools of analysis of an DD/SS diagram, PED and YED concepts to illustrate the direction and extent of shift in price.</li> </ul>	



	Explain with rigour and in depth.	
L2	Lacking in any one of the L3 criterions	5-7
L1	<ul> <li>Largely irrelevant response</li> <li>Descriptive response with non-existent or minimal or application of economic concepts or theories</li> <li>Serious and pervasive conceptual errors</li> </ul>	1-4

#### b) Introduction: Key direction of essay

The government could implement various measures to ensure equity to keep prices of food stable and affordable to consumers. In this essay, we would discuss the extent to which price control and subsidies implemented in the food market are effective or limited in achieving the benefits they are supposed to achieve on the consumers to ensure stable food prices.

# <u>R1: Discuss the effectiveness of price ceiling (maximum price) to ensure stability of food prices to consumers</u>

 A measure such as maximum prices could be implemented to prevent food prices from rising above a certain level. An effective price ceiling is a legally established maximum price below the market equilibrium price. When the government sets this price on the food market, food producers are prohibited from selling above the stipulated price.

#### Effectiveness:

- Price ceiling is effective to stabilise food prices: The government may use price control as a measure to control higher general price levels with inflationary pressures caused by rising cost of food. Referring to Diagram 3, suppose the market of food was initially at equilibrium P<sub>e</sub> and Q<sub>e</sub>.
- After the government imposes a price ceiling P. (Diagram 3), prices of food are kept stable and affordable to the majority. This ensures equity and fairness to consumers especially in wartime, or times of famine, the government may set maximum prices for basic goods such as food so that poor people can afford to buy them, otherwise unaffordable at original P. without price ceiling.

#### Diagram 3: Price Ceiling on the market for food



 Price ceiling is effective to control rising prices of basic necessities charged by suppliers especially during food shortages or inflationary times. In recent years, food shortages have affected many countries and prices tend to skyrocket because of meager supply. In such a situation, a maximum price effectively makes the basic necessity affordable to the majority of consumers.

#### **EV1:** Black markets (Unintended consequence of price ceiling)

- A major problem with maximum prices is the likely emergence of a black market where food sellers ignore the government's price restrictions and sell illegally at a price higher than P. (Diagram 3).
- A black market creates a negative unintended consequence of an underground economy because unsatisfied consumers who were unable to buy enough food in legal markets may be prepared to pay very high prices. This is especially detrimental if it happens in the food market which are of important daily necessities to consumers for survival. The opportunity for food producers to make higher profits presents itself if food is bought at P<sub>e</sub> and sold at the black market price P<sub>b</sub>.

Referring to Diagram 3, when a price ceiling,  $P_{c}$ , below the equilibrium price is imposed, shortage of  $(Q_{c} - Q_{s})$  results. If all available supply,  $Q_{s}$ , is sold in the black market, the black market price will be  $P_{b}$  (Diagram 3).

A major problem with maximum prices is likely to be the emergence of underground markets, where customers, unable to buy enough in legal markets, may well be prepared to pay very high prices: prices above Pc in Diagram 3.

#### R2: Discuss the effectiveness of subsidies to ensure stability of food prices to consumers

#### Effectiveness:

- A per unit subsidy could be provided to food producers to artificially bring costs down for each unit of food sold in the market.
- The subsidies lower the cost of production and increase supply of food, shifting the supply curve upwards / rightwards by the amount of the subsidy. Subsidies are often given to agricultural producers e.g. to help raise their income levels.
- When the supply of food increases from S<sub>0</sub> to S<sub>1</sub>, at P<sub>0</sub>, there will be a surplus since quantity supplied (Q<sub>s</sub>) is greater than quantity demanded (Q<sub>0</sub>) and the price of food will fall from P<sub>0</sub> to P<sub>1</sub>.



Figure 3: Subsidies on food market

• Effective to ensure stability of food prices to consumers as consumers pay a lower price. In some countries such subsidies are provided to cushion the impact of rising cost of living e.g. soaring food prices in recent



years. In Malaysia, substantial food subsidies are provided to help buffer the adverse impact of rising cost of living on consumers.

<u>Ev2a</u>: When the market is subjected to further market forces of DD and SS, the equilibrium price will continue to change and the government will have to continue intervening through measures such as price ceiling or subsidies to stabilise the price at the desired level.

<u>Ev2b:</u> Varying subsidy amount for different categories of food market yields varying effectiveness to stabilise food prices for consumers

There are different categories of food, such as meat, vegetables and carbohydrates, that the government would impose varying amounts of subsidies. Due to lack of complete information by the government on the different markets of food categories and consumer groups (income levels, age, gender etc), government failure to impose the correct amount of subsidies in the different categories of food creates inefficiency, and may result in varying effectiveness to stabilise food prices for different groups of consumers.

**Note for alternative R2 that are acceptable:** Candidates could discuss other possible measures to increase or diversify supply of food (buffer stock scheme by government to stabilise prices in volatile food market where government buys surplus when supply of food increases or sells from buffer stock when supply of food falls, improved production techniques through technology improvements to protect crops from bad weather or increase crop yield, alternative agriculture methods, R&D ) **OR** to cope with demand of food by the production of more alternative goods (e.g. home-grown vegetables in times of war), education to reduce food wastage.

#### Summative Conclusion:

In conclusion, price ceiling and subsidies are overall effective to keep prices of food stable for consumers and improve equity in the short term. However, in many developing countries, governments control the price of basic food to ensure stable prices to consumers. The unintended consequence, however, is to reduce incomes for farmers in less-developed countries, who are then encouraged to leave the land and flock into the ever-growing towns and cities. There is an unintended consequence of possible lower supply with lesser food producers like farmers, raising equilibrium prices of food to consumers in the long term, hence reducing food price stability on consumers in the long run. Governments with a stronger budget surplus like Singapore could subsidise the various categories of food in the market could effectively ensure stability of food prices to consumers in times of crisis such as Covid-19 pandemic or poor harvest conditions. In the real world, complete government information on the appropriate price ceiling to implement in the different types of food, and the needs of different consumers are often hard to measure, resulting in less effectiveness on the stability of food prices on the intended consumers.

Level	Descriptors	Marks
L3	<ul> <li>Breadth &amp; Application <ul> <li>Covers two measures - price ceiling and subsidies, or other other relevant measures accepted, to ensure stability of food prices to consumers.</li> <li>Both effectiveness and limitations of a price ceiling on stability of food prices on consumers should be covered in R1.</li> <li>Both effectiveness and limitations of subsidies on stability of food prices on consumers should be covered in R2.</li> </ul> </li> <li>Depth <ul> <li>Applies relevant economic concepts or theories</li> <li>Explains with rigour and detail</li> <li>Explains and illustrates with relevant tool(s) of analysis (<i>e.g. diagrams and examples</i>)</li> </ul> </li> </ul>	8-10
L2	Lacking in any one of the L3 criterions	5-7

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L1	<ul> <li>Largely irrelevant response (meaning of question not properly grasped)</li> <li>Descriptive response with non-existent or minimal or application of economic concepts or theories</li> <li>Serious and pervasive conceptual errors</li> </ul>	1-4
	Evaluation	
E3	Takes a clear overall stand (a summative conclusion) that is comprehensively justified by providing convincing evaluative comments on overall effectiveness of the two measures on stability of food prices on consumers.	4-5
E2	<ul> <li>Takes a clear overall stand which is only partially justified as only some of the requirements is well evaluated with supportive arguments presented in the answer and is linked to the context of the question</li> <li>Evaluates both requirements but the overall stand is unclear</li> </ul>	2-3
E1	Provides evaluative statement for 1 requirement	1

### Question 3

A firm's decisions and strategies are influenced by the level of competition in the industry. Its decisions and strategies might also be affected by consumers' cognitive biases and concerns about the environment.

- a) Explain why a firm considers the level of competition in the industry when making decisions about the price and output level of its product. [10]
- b) If markets fail due to a lack of competition, discuss whether consumers will be disadvantaged and what might be the most appropriate form of government intervention. [15]

#### Suggested answer for part (a)

#### INTRODUCTION

All firms aim to maximise profits. A firm considers the level of competition in the industry when making decisions about the price and output level of its product as level of competition in the industry would affect its output level and ability to set prices in order to maximise profits

#### BODY

#### R1 Level of competition would affect a firm's market share and output level and its ability to set prices

A lower level of competition suggests each firm has higher market power and ability to set higher prices. A firm faces a relatively high demand curve, DD<sub>0</sub> which is also relatively price inelastic given the lack of close substitutes. To maximise profits, a firm facing a low level of competition in the industry will produce at the output level of Q<sub>0</sub> where MC= MR, where MC is rising and cuts MR from below as shown in Figure 1. Any production level less than Q<sub>0</sub> means that the firm can increase profits by producing more, since MC is lower than MR (additional revenue from producing an extra unit exceeds additional cost), similarly any production level beyond Q<sub>0</sub> means that firm's profits would fall since the additional cost of producing an extra unit exceeds the additional revenue earned. The low level of competition allows the firm to charge a price higher than MC at P<sub>0</sub> by restricting output.

However, with a higher level of competition in the industry, a firm would be facing a lower demand curve, DD, as its market share is carved out with more close substitutes, the demand for its products will also become more

price elastic. As a result, the firm will be producing less at  $Q_1$  and also charges a lower price at  $P_1$  in order to maximise profits.



# R2 Level of competition would affect the degree of mutual interdependence in the industry and a firm's pricing decisions

If a firm is operating in an oligopoly with a few large firms dominating the industry (low level of competition), its pricing and output decisions would depend on the other dominating firms. All firms tend to be mutually interdependent and exhibit a high level of rival consciousness amongst themselves. According to the kinked demand curve theory, when there is a high level of market dominance by a few large firms, there will be no incentive to increase or decrease prices because when the firm raises its prices, the rest will not follow which will result in a more than proportionate fall in quantity demanded for the firm that might have tried to increase prices. On the other hand, if it had lowered prices, the other firms would have tried to follow for fear of losing market share which would lead to a less than proportionate increase in quantity demanded for the firm. In both cases, total revenue falls for the firm. Hence, there is a limited tendency for a firm to deviate from the equilibrium price, even in the presence of small changes in marginal costs.

However, with a higher level of competition, there will be a lower degree of market dominance for the firm and a lower degree of mutual interdependence within the industry, less rival consciousness and a firm will start to act independently and compete on prices. The firm would then have to take note of the pricing of other firms and try to match it.

Level	Descriptors	Marks
L3	Breadth	8-10
	<ul> <li>Covers both (R1) on how level of competition would affect a firm's market share and output level and its ability to set prices</li> <li>and (R2) on how level of competition would affect the degree of mutual interdependence in the industry and a firm's pricing decisions</li> </ul>	

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	Depth	
	• Analyse and explain with the tools of analysis of a cost-revenue diagram with accurate	
	annotations and figures to illustrate the concepts	
	• Explain with rigour and in depth.	
L2	Lacking in any one of the L3 criterions	5-7
L1	Largely irrelevant response	1-4
	• Descriptive response with non-existent or minimal or application of economic concepts or	
	theories	
	Serious and pervasive conceptual errors	

Suggested answer for part (b)

#### INTRODUCTION

When there is a lack of competition, the product sold in a market is supplied by a single or few large firms. As a result, each firm has substantial market share or control over supply and the market price. A lack of competition allows firm to charge high prices by restricting output as explained in (a). Hence the market output is below the socially optimal level, resulting in a deadweight welfare loss to society and hence market failure. When markets fail due to a lack of competition, it will have an impact on consumer welfare in terms of price, quantity, variety and quality of products. Government may intervene to address the market failure.

#### BODY

#### R1 Impact on consumers when markets fail due to a lack of competition

Consumers will be disadvantaged

- The greater the lack of competition, the steeper and hence more price inelastic a firm's demand curve and the greater would be the price charged the firm restricts its output. **Consumer surplus falls** as they now pay a higher price and enjoy lower quantity of the product compared to a situation where there is greater competition.
- In addition, the firms with market dominance, insulated from the rigours of competition in the market, might become **more complacent and lack incentive to innovate or care for the environment**, for instance, engage in green, sustainable production methods that are environmental friendly. Hence, consumers will be disadvantaged in terms of lack of such products.
- There is also a **potential inequity** when the firm produces an essential good (such as insulin for diabetes patients) and reaps a larger income at the expense of the consumers who have no other alternatives.
- Furthermore, to secure market dominance, the firm may spend resources on advertisements based on saliency bias which could **distort demand**, **misleading consumers** into buying things that they may not necessarily require.

#### Ev1 Consumers may not be disadvantaged

Consumers may not be disadvantaged when markets fail due to a lack of competition, as cost savings and innovation are possible. Firms with supernormal profits may engage in innovation to benefit the consumers in terms of better quality and variety of products and services. In some cases, lack of competition would allow firms to reap internal economies of scale with high initial capital or small size of market, hence consumers may also benefit in terms of lower prices if firms pass on the cost savings. (Can show movement along LRAC resulting in fall in unit cost with the expansion of scale)

#### R2 Appropriate forms of government intervention (Any 2 of the below)

Competition Laws/ Antitrust Laws

Government intervention in the form of competition laws or anti-trust laws will lower the barriers to entry in many of the industries such as telecommunication, technology industry, pharmaceutical, banking industry that face high statutory and strategic barriers to entry. With lower barriers to entry, the entry of new firms would lead to an increase in the number of firms in the industry and reduce the market share of the incumbent firms, assuming the market size remains constant. As competition increases, each firm faces a gentler and more price elastic demand curve, hence the prices charged in the market would be lower. **Consumer surplus rises** as they now pay a lower price. With lower prices, lower income households will also enjoy these products that were previously inaccessible. This will **reduce inequity**.

#### Regulations (Price and Non-price)

A government can regulate the behaviour of dominating firms, for example, to adhere to sustainable practices and produce eco-friendly products or to regulate the pricing of natural monopolies, such as water and electricity firms where one large firm can supply the entire market at a lower long run average cost. This is because of the nature of costs in a natural monopoly where there are very high fixed costs and low marginal costs. With a natural monopoly, the internal economies of scale available to one large firm means that there is a tendency for one firm to dominate the market in the long run with a lack of competition. These firms are not allowed to charge any price they want. Instead, government agencies regulate their prices. One might conclude that the price should equal the natural monopoly's marginal cost to maximise social welfare and achieve efficient allocation of resources. Consumers pay lower prices.

#### **Deregulation**

The government may choose to deregulate the industry to subject the incumbent firms to competition so as to keep prices more competitive and improve efficiency. For example, in Europe, the 'open skies' policy of a deregulated airline market has led to **lower fares** and a **greater choice** of airline for passengers. Similarly, the deregulation in the telecommunications industry in Singapore by licensing to Mobile One and Starhub has led to lower subscription plans and better services such as free-incoming calls for consumers, benefiting consumers.

#### Ev2 Limitations of government intervention

Competition and antitrust laws are blunt instruments. Sometimes firms merge and gain greater market dominance not to reduce competition but to lower costs through more efficient joint production. These benefits from mergers are sometimes referred to as the creation of synergies. For example, the merger of many banks helps to reduce administrative staff.

If regulators set price equal to marginal cost, that price will be less than the firm's average cost and thus the firm will suffer losses (subnormal profits) and may eventually leave the market. Regulators could respond in various ways. One way is to subsidise the natural monopoly. However, to pay for the subsidy, the government needs to raise funds through taxation.

#### SUMMATIVE CONCLUSION

Whether consumers will be disadvantaged due to a lack of competition hinges on the **presence of a contestable market** and the industry's inherent **characteristics**. The greater the threat of a contestable market, the less likely consumers will be disadvantaged. When consumers face disadvantages, such as saliency bias due to misleading information, regulatory interventions, such as consumer protection laws and mandatory disclosure requirements are an appropriate form of government intervention. In markets with natural monopolies or high barriers to entry, antitrust measures may be necessary to foster competition. Conversely, in industries with low barriers, promoting contestability through deregulation and encouraging innovation may prove more effective to improve market outcome. In conclusion, determining the most appropriate form of government intervention to address market failure resulting from a lack of competition is a nuanced process contingent upon the extent of consumer disadvantage and the nature of the industry in question.



Level	Descriptors	Marks
L3	Breadth & Application	8-10
	Covers both the impact on consumers when markets fail due to a lack of competition and two appropriate forms of government intervention, analysed using the appropriate concepts of consumer welfare and equity	
	Depth	
	Applies relevant economic concepts or theories	
	Explains with rigour and detail	
	<ul> <li>Explains and illustrates with relevant tool(s) of analysis (e.g. diagrams and examples) which are accurate and thoroughly explained</li> </ul>	
L2 -	Lacking in any one of the L3 criterions	5-7
L1	Largely irrelevant response (meaning of question not properly grasped)	1-4
	<ul> <li>Descriptive response with non-existent or minimal or application of economic concepts or theories</li> </ul>	
	Serious and pervasive conceptual errors	
Evalua	ation	
E3	<ul> <li>Takes a clear overall stand (a summative conclusion) that is comprehensively justified by providing convincing evaluative comments on the overall impact on consumers when markets fail and the appropriate forms of government intervention</li> </ul>	4-5
	<ul> <li>Some comparisons on the appropriateness of government intervention</li> </ul>	
E2	<ul> <li>Takes a clear overall stand which is only partially justified as only some of the requirements is well evaluated with supportive arguments presented in the answer and is linked to the context of the question</li> </ul>	2-3
	Evaluates both requirements but the overall stand is unclear	
E1	Provides evaluative statement for 1 requirement	1



#### **Question 4**

The exchange rate is a key policy tool in managing the economy of Singapore.

- a) Explain how an appreciation of the exchange rate might affect aggregate demand and aggregate supply in an economy. [10]
- b) Discuss whether management of the exchange rate is the most appropriate way of controlling inflation in Singapore. [15]

#### **Suggested Answer**

. Explain how an appreciation of the exchange rate might affect aggregate demand and aggregate supply in an economy. [10]

#### Introduction: Key definitions

The summation of the demand for all goods and services produced by an economy is called Aggregate Demand (AD), which consists of the demand for goods and services by domestic households i.e. consumption (C), firms i.e. investment (I), the government i.e. government spending (G) and by foreigners i.e. net exports(X-M). The Aggregate Supply (AS) shows the total output of goods and services that domestic firms would like to produce and sell at each general price level for a given period of time. An appreciation of the exchange rate will cause AD to shift left and AS to shift down.

#### R1: Explain how appreciation affects AD

In an economy, an appreciation of the currency will cause its export to be more expensive in foreign currency. This will cause the quantity demanded of the economy's export to decrease. Given that the price of export in domestic currency does not change, this decrease in quantity multiplied by price in local currency will definitely lead to a decrease in export revenue. Price elasticity of demand for export will affect the extent of the decrease. Hence, the X component of AD to decrease. At the same time, the economy's import from trading partners will become cheaper in domestic currency. This will cause the quantity demanded of import to increase more than proportionately, assuming PEDm>1, causing M component of AD to increase. Overall, (X-M) component of AD will decrease.

The initial fall in injection causes a fall in income which cuts consumption based on the value of the MPC. The fall in induced C causes another round of fall in income and this cycle continues till the change in C becomes negligible. The reverse multiplier effect causes the AD to shift to the left more than the initial fall in injection from AD0 to AD1 in Figure 1 below.



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#### R2: Explain how appreciation affects AS

As Singapore' import from trading partners becomes cheaper in SGD due to the appreciation of SGD, Singapore will also experience a fall in cost of production as we import many raw materials and capital goods from our trading partners. This will cause the AS curve to shift down from AS0 to AS1 in figure 1 above.

Level	Descriptors	Marks
L3	Breadth	8-10
	<ul> <li>Cover both (R1) on the impact of appreciation on AD and (R2) the impact on AS.</li> </ul>	
	Depth	
	<ul> <li>Analyse and explain with the tools of analysis of an AD/AS diagram, to illustrate the shifts in</li> </ul>	
	AD and AS due to appreciation of currency.	
	Explain with rigour and in depth.	
L2	Lacking in any one of the L3 criterions	5-7
L1	Largely irrelevant response	1-4
	<ul> <li>Descriptive response with non-existent or minimal or application of economic concepts or</li> </ul>	
	theories	
	Serious and pervasive conceptual errors	
		1

# b) Discuss whether management of the exchange rate is the most appropriate way of controlling inflation in Singapore. [15]

#### Introduction: Key direction of essay

Inflation refers to the sustained increase in the general price level of an economy over time. Whether exchange rate management is the most appropriate way of controlling inflation in Singapore depends on the nature of Singapore's economy as well as the root cause of inflation. We will compare and discuss whether exchange rate management or supply side policies is the most appropriate way of controlling inflation in Singapore.

#### R1: Explain how appreciation of exchange rate controls both cost-push and demand-pull inflation

As explained in part (a), with appreciation, AD of Singapore falls due to the fall in X-M and AS increases due to the fall in COP with cheaper imports.

The combined effect of a rise in AS and a fall in AD will lead to a fall in general price level from P0 to P1 in Figure 1, easing inflationary pressure.

#### EV1a: Exchange rate management is appropriate for SG's small, open economy

Singapore's lack of natural resources causes it to import most of the raw materials it needed for producing goods and services and also import final consumer goods and services. This makes our economy very susceptible to imported inflation. Not only will this adversely affect the cost of living for households but also severely affects the country's export competitiveness if most of the exports require substantial imported inputs to manufacture. As appreciation of the exchange rate is therefore appropriate as it is able to target and curb imported inflation in Singapore

#### EV1b: Limitation of exchange rate appreciation – unintended consequence on BOT and EG

However, in the previous analysis, we assumed PEDm > 1. This may not hold true for Singapore given our demand for imports can be argued to be price inelastic as we are dependent on imported goods from daily necessities to raw materials used in production. Hence it is possible that import expenditure may fall as a result as quantity demanded for import rise less than proportionately to the fall in price, leading to BOT to improve instead.

Even if PEDm<1 in Singapore's case, as long as the Marshall Lerner conditions holds i.e. PEDx+PEDm > 1, BOT will still worsen given the appreciation of the currency. And NI also falls from Y0 to Y1 in Figure 1.

#### EV1c: Root cause of inflation

Appreciation of exchange rate mainly affects the (X-M) component of AD when dealing with demand-pull inflation. If the root cause of demand-pull inflation in Singapore was due to housing price inflation for instance, since housing price takes up a huge proportion of Singapore's CPI, then appreciation of SGD will arguably not be the most appropriate policy in tackling the root cause of the demand-pull inflation.

#### R2: Explain how supply side policy controls both demand-pull and cost-push inflation

When the economy is facing cost-push inflation, referring to Figure 2, the government could implement policies that can reduce unit production costs to increase AS and this shifts ASO down to AS1. General prices level (GPL) will fall from PO to P2, curbing inflationary pressures. Examples of such supply side policies to lower the production costs include subsidies for wages which was commonly used by the Singapore government during the COVID19 induced recession.



On the other hand, supply side policies to raise productive capacity, which can be achieved through spending on infrastructure and capital to raise the quantity and quality of resources, can help to ease both demand-pull and cost-push inflationary pressure. As seen in Figure 3, a rightward shift of ASO to AS1 will reduce GPL from P0 to P1, controlling inflation.

#### EV2a: Limitations of wage subsidies and SSP to raise productive capacity

Wage subsidies and spending on infrastructure and capital are usually very costly and may not be affordable should Singapore accumulate large fiscal deficits and debt. In addition, it will incur opportunity cost as the fund used could have been spent on other sectors of the economy such as in healthcare.

#### EV2b: Limitations of cut in employers' CPF contribution

Cut in employers' CPE contribution can disrupt the long-term finances of households (for CPF cuts) and viability of social security insurance schemes in Singapore.

#### EV2c: Long-run nature of SSP to raise productive capacity

SSP to raise productive capacity are usually considered long-run policy because they take time to bear fruit. The eventual rise in productive capacity might take years to happen especially if we are looking at spending on infrastructure.

#### Conclusion

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In conclusion, whether exchange rate management is the most appropriate policy to control inflation in Singapore depends on the root causes of the inflation. With a small, open economy, Singapore is often more susceptible to imported cost-push inflation and therefore exchange rate management will be an appropriate tool to tackle such inflation. Although currency appreciation may lead to worsening of BOT, this can be resolved through implementing supply-side policies to increase both the price and non-price competitiveness of Singapore's exports. In times of complexities when Singapore is facing different sources of inflation due to tight labor market and imported inflation, it will be more appropriate for Singapore to adopt a combination of both currency appreciation and SSP such as wage subsidies to tackle the respective sources of inflation.

Level	Descriptors	Marks
L3	<ul> <li>Breadth &amp; Application <ul> <li>Covers both exchange rate management and one other alternative policy to control inflation</li> <li>Both easing of demand-pull and cost-push inflation pressures should be covered in both R1.</li> <li>R2 policy should link to either easing of demand-pull or cost-push inflation pressures, or both.</li> </ul> </li> <li>Depth <ul> <li>Applies relevant economic concepts or theories</li> <li>Explains with rigour and detail</li> <li>Explains and illustrates with relevant tool(s) of analysis (<i>e.g. diagrams and examples</i>)</li> </ul> </li> </ul>	8-10
L2	Lacking in any one of the L3 criterions	5-7
L1	<ul> <li>Largely irrelevant response (meaning of question not properly grasped)</li> <li>Descriptive response with non-existent or minimal or application of economic concepts or theories</li> <li>Serious and pervasive conceptual errors</li> </ul>	1-4
	Evaluation	
E3	<ul> <li>Takes a clear overall stand (a summative conclusion) that is comprehensively justified by providing convincing evaluative comments on the relative appropriateness of R1 and R2 policies.</li> </ul>	4-5
E2	<ul> <li>Takes a clear overall stand which is only partially justified as</li> <li>Only some of the requirements is well evaluated with supportive arguments presented in the answer and is linked to the context of the question</li> <li>Evaluates both requirements but the overall stand is unclear</li> </ul>	2-3
E1	Provides evaluative statement for 1 requirement	1



TYS	N2023 Q5			
Residents in densely populated, rapidly growing cities expect annual improvements in standards of living				
but whether this is achievable or sustainable in the long term is uncertain.				
(a)	Explain how improvements in a country's material and non-material standard of living can be			
	measured. (10)			
(b)	Discuss whether increases in the living standards of residents in densely populated, rapidly growing			
	cities are achievable and sustainable in the long term. (15)			

# (a) Explain how improvements in a country's material and non-material standard of living can be measured. (10)

#### Introduction

- Standard of living refers to the level of well-being enjoyed by an average resident of a country. This includes both material and non-material well-being.
- In this question, we will examine how improvement in a country's SOL can be measured **over time** with the aid of **economic indicators**.

#### R1: How improvement in material SOL can be measured

- Material (or tangible) well-being refers to the quantity and quality of goods and services available to the residents for consumption.
- **Real Gross Domestic Product per capita** across different time periods is commonly used to measure improvement in material well-being over time, as it measures the output of the country per person.
- Explain why data must be real:
  - Nominal GDP is insufficient as an indicator of economic growth. Real national income should be used as it measures the value of output at constant prices, and any increase must mean a rise in output and hence living standards. On the other hand, a rise in nominal national income could be due to increases in prices with negligible increase in output. For example, when Zimbabwe faced hyperinflation in 2008, its nominal GDP would be the highest in the world if we did not discount the effects of inflation.
- Explain why data must consider population growth:
  - There is also a need to take into account **population growth**. If population grows faster than real national income, the average individual's share will fall. Thus, a more accurate indicator of changes in the standard of living over time is real GDP calculated for **per capita**. For example, Singapore's average annual population growth hovers around 2% over the years, but its economic growth is *usually* above 2%. Singapore's GDP per capita has therefore increased over time.

#### R2: How improvement in non-material SOL can be measured

# **R2** should ideally include pollution and disamenities and include explanation of indicators for sufficient scope and depth.

Note: Green GDP, HDI, and NEW are actually all composite indicators which add on a layer of measuring non-material SOL on top of material SOL.

• Non-material well-being includes working hours, stress level, pollution level in the country or what is generally referred to as 'intangibles' or quality of life, which cannot be measured by real GDP per capita.

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- Changes in negative externalities (e.g. pollution or destruction of the environment) can worsen nonmaterial SOL. Many production processes accompanying higher economic growth create harmful byproducts which harm the environment.
  - PM2.5, PSI to measure air pollution
  - One index that can be used to measure whether non-material SOL has improved is Green GDP, which has environmental consequences factored into conventional <u>GDP</u>. Green GDP monetizes the <u>loss of</u> <u>biodiversity</u>, and accounts for costs caused by <u>climate change</u>. If countries manage to successfully reduce carbon emissions following commitments to COP28, their Green GDP may increase, indicating an improvement in non-material SOL.
- Changes in Disamenities (e.g. longer working hours & a more stressful lifestyle)
  - Increases in national income may arise as a result of people having to work harder or longer hours and hence having less time for leisure. In this case, a growth in national income will overstate the improvement in the quality of life. It is therefore necessary to consider indicators such as suicide rates and divorce rates which relate to stress in a fast-paced, rapidly growing affluent economy.

#### • Human Development Index (HDI)

- The HDI is a composite indicator that is intended to capture what is typically considered to be key dimensions of human development: decent material well-being, a long and healthy life and being knowledgeable. Apart from real GNP or GNI per capita (PPP), it factors in non-economic aspects such as life expectancy at birth and educational attainment.
- Net Economic Welfare (NEW)
  - Net Economic Welfare (NEW) is a composite indicator that adds to GNP certain items such as leisure and non-marketed activities (e.g. housewives' services). It also subtracts from GNP undesirable costs of pollution and other disamenities of modern urbanisation (e.g. longer worker hours/ environmental degradation).

#### Conclusion

To sum up, real GDP per capita can be used to measure improvements in material standard of living. However, as it is unable to measure improvements in non-material standard of living, indicators such as HDI and NEW need to be considered.

Level	Descriptors	Marks
L3	<ul> <li>Breadth</li> <li>Cover both R1 on how material SOL and R2 on how non-material SOL can be measured.</li> <li>Depth</li> <li>Analysis must include real GDP per capita on measurement of material SOL, and explanation of concrete indicators to measure non-material SOL.</li> <li>Explain with rigour and in depth.</li> </ul>	8-10
L2	Lacking in any one of the L3 criterions	5-7
L1	<ul> <li>Largely irrelevant response</li> <li>Descriptive response with non-existent or minimal or application of economic concepts or theories</li> <li>Serious and pervasive conceptual errors</li> </ul>	1-4



# (b) Discuss whether increases in the living standards of residents in densely populated, rapidly growing cities are achievable and sustainable in the long term. (15)

#### Introduction

- Clarify meaning of "densely populated" and "rapidly growing"
  - Densely populated: larger number of people living there compared with another similar-sized area.
  - Rapidly growing cities (*not economy as a whole*): rapid urbanisation, industrial expansion and population growth.
- Interpret meaning of "achievable and sustainable"
  - Both material and non-material SOL can <u>continue to improve over time</u> due to reasons such as fiscal sustainability and environmental sustainability.

#### R1: increase in SOL in such cities is achievable and sustainable in the long term

#### Material SOL may increase over time

- Rapidly growing cities: rapid industrial expansion and population growth
  - Rapid increase in consumption, investment, and government spending in infrastructure.
  - Rapid increase in demand for labour compared to other cities required for industrialisation and construction etc -> increasing upward pressure on wages
- Densely populated
  - Relatively higher supply of labour compared to other cities
- AD increase due to C, I, G increase -> increase in actual growth via multiplier effect
- AS increase assuming government increases spending on infrastructure e.g. roads, bridges, improves power grid, communications -> increase in productive capacity
- Draw diagram showing both AD and AS increasing, and real Y increase -> increase in quantity of goods and services for consumption -> improvement in material SOL assuming AS increases in tandem with AD
- Rapid economic growth in rapidly growing cities that are densely populated will also bring about **greater fiscal sustainability** through increasing tax revenue for the government. This enables the government to implement economic policies that can further increase actual and potential growth.

#### Non-material SOL may improve over time

• With greater fiscal sustainability, if the government uses the tax revenue to increase its spending to improve the well-being of the people by improving infrastructure (e.g. build more green spaces, greater convenience in travel through improvement of transport system), sanitation, healthcare etc, it may also lead to an improvement in non-material SOL over time.

#### EV1: Improvement in SOL may not be very significant

- Increase in real Y and **material SOL** may not be significant if AD increase outstrips AS increase, which is likely given the difficulty in updating urban planning according to changing needs of growing cities (e.g. case of flooding in Chennai due to outdated master plan).
- Real Y per capita increase may also not be very significant given rapid increase in number of residents in the cities.
- Industrial needs are also likely to be prioritised over government spending in other areas, hence nonmaterial SOL may not improve significantly.

#### R2: increases in SOL in such cities are NOT achievable and sustainable in the long term

#### Material SOL is likely to worsen over time

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Suggested Answers to A Level 2023 H2 Economics (ESSAYS) by Hwa Chong Institution Economics Unit

- Given rapid expansion of the city, increase in demand for labour is likely to outstrip increase in supply, leading to rising wages. This potentially leads to wage push inflation and higher cost of living, due to AS falling -> rise in GPL and fall in real Y.
- Intensive urban growth can lead to greater poverty and rise in income inequality as demand for higher skilled labour is likely to increase faster than demand for lower skilled labour (migrating peasants attracted to prospects of growing cities). Coupled with a relatively lower supply of skilled labour and a relatively larger pool of low skilled workers, the income gap will likely widen over time. (Can use labour market diagrams to explain this)
  - Failure of the government's anti-poverty policies in urban areas will also worsen poverty

#### Non-material SOL is likely to worsen over time

- Rapid urbanisation leads to the following problems that **impact environmental sustainability** and worsen the living conditions and **non-material SOL** of the people
  - Sound, air, water pollution from rapid industrial expansion or construction projects in cities
    - Development of Slums (e.g. Jakarta, Indonesia)
    - Water and Sanitation Problems
    - Poor Health and Spread of Diseases (e.g. West Bengal, India)
    - Traffic Congestion (e.g. Bangkok, Thailand)

#### EV2: Extent of problems created will only escalate over time

- In many economies, continual migration from rural areas to the growing cities in search of better job
  opportunities ends up worsening the decline of job opportunities in rural areas. This ends up reinforcing
  the migration trend, which only worsens the above-mentioned problems it creates in the cities.
- If the migration from rural to urban areas happens at a faster pace than expansion of city, this will cause
  wages to fall instead and hence wage push inflation may not happen.

#### Summative Conclusion

- Overall, even with the trickledown effect of rapid economic growth, the negative impacts of rapid urbanization in densely populated cities on both material and non-material SOL are inevitable.
- However, long-term sustainability and achievability remains possible for governments in densely
  populated and rapid growing cities, if they are able to implement potential mitigating measures, especially
  as they enjoy greater fiscal sustainability.
  - For e.g. Singapore was rapidly growing and densely populated but ranks among the top liveable cities in the world today (6th in the Quality of Life Survey in 2022) given its political stability, low crime rates, and excellent healthcare, education, housing, recreation and transport options.

Level	Descriptors	Marks
L3	<ul> <li>Breadth &amp; Application <ul> <li>Considers implications of both high population density and rapid growth of cities</li> <li>Analyses both positive and negative impacts on material and non-material SOL</li> <li>Must recognise that question is on impact on residents of cities, not of economies as a whole</li> </ul> </li> <li>Depth <ul> <li>Applies relevant economic concepts or theories</li> <li>Explains with rigour and detail</li> <li>Explains and illustrates with relevant tool(s) of analysis (e.g. diagrams and examples)</li> </ul> </li> </ul>	8-10
L2	Lacking in any one of the L3 criterions	5-7
L1	<ul> <li>Largely irrelevant response (meaning of question not properly grasped)</li> <li>Descriptive response with non-existent or minimal or application of economic concepts or theories</li> </ul>	1-4

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	Serious and pervasive conceptual errors			
Evaluation				
E3	• Takes a clear overall stand (a summative conclusion) that is comprehensively justified by providing convincing evaluative comments on the relative importance of the requirements covered in the body.	4-5		
E2	<ul> <li>Takes a clear overall stand which is only partially justified as</li> <li>Only some of the requirements is well evaluated with supportive arguments presented in the answer and is linked to the context of the question</li> <li>Evaluates both requirements but the overall stand is unclear</li> </ul>	2-3		
E1	Provides evaluative statement for 1 requirement	1		

#### Question 6

The use of expansionary demand-side policies designed to achieve economic growth or to lower unemployment may lead to undesirable consequences.

- a) Explain **why** expansionary fiscal policy designed to achieve economic growth or lower unemployment may lead to **undesirable consequences**. [10]
- b) Discuss whether expansionary supply-side policies would be effective in achieving the macroeconomic policy aims of an economy. [15]

#### Part (a)

Intro

Expansionary fiscal policy can help achieve economic growth or lower unemployment through raising government spending and/or reducing taxes to boost AD. However, this may lead to undesirable consequences due to conflict in macro goals and budget availability.

#### <u>Body</u>

#### Possible Approaches:

- R1: conflict in macro goals; R2: other undesirable consequence, such as budget availability
- R1 and R2: 2 different sets of conflicts in macro goals

# R1: Expansionary fiscal policy designed to achieve economic growth or lower unemployment may lead to undesirable consequences <u>due to conflict in macro goals</u>

Expansionary fiscal policy involves running a budget deficit as government spending is raised while direct taxes are reduced. Higher spending by government (e.g. on healthcare, education, and infrastructure) will directly raise government spending (G), a component of AD. Reducing personal income tax raises the disposable income of households while reducing corporate taxes increases the post-tax profits of firms, thus further stimulating consumption (C) and investments (I).

As G, C, and I increase, AD will increase, leading to a rise in output. Households will spend part of the additional income, causing consumption to rise further. However, as some of the income is saved, taxed, or spent on imports, each additional round of consumption will become increasingly smaller. The cycle stops when the rise in induced consumption becomes negligible. Eventually, through this multiplier process, national income and

output will rise several times more than the initial rise in G. As shown in figure 1 below,  $AD_{\circ}$  shifts rightwards to  $AD_{\circ}$ , causing real national output and income to rise from Y<sub>o</sub> to Y<sub>o</sub>, achieving actual economic growth. With the increase in output, the derived demand for labour will also increase, lowering the demand deficient unemployment.



However, when the economy approaches the full employment level, the pursuit of economic growth and low unemployment through expansionary fiscal policy will result in supply capacity constraints in the short-run and lead to higher demand-pull inflation.

Thus, in the short run, there might be demand-pull inflationary pressures illustrated by the rightward shift of the AD curve from AD<sub>0</sub> to AD<sub>1</sub> to AD<sub>2</sub>. When the economy is near full employment, it means that most of its resources (such as labor, machinery, and raw materials) are already near fully utilized. In this context, the ability to increase production to meet rising demand is constrained. Firms cannot easily increase production in response to higher demand for goods and services. Hence, the economy "overheats" and the general price level rises from  $P_0$  to  $P_1$  to  $P_2$ , resulting in demand-pull inflation.

# R2: Expansionary fiscal policy designed to achieve economic growth or lower unemployment may lead to undesirable consequences <u>due to budget availability</u>

As expansionary fiscal policy involves running budget deficits, these are typically financed from borrowing (e.g. issuing of government bonds). This generates government debt which needs to be paid back with interest in the future. There are opportunity costs / trade-offs incurred as the tax revenue used to pay off such debt can instead be used for other productive purposes e.g. spending on education. If a government were to accumulate so much debt (typically more than 60% of GDP) such that financial markets become concerned about its ability to pay back, it will be difficult to borrow more funds for further fiscal expansion.

Moreover, when the debt needs to be paid back in the future, it may incur opportunity costs as more resources are allocated into paying the debts and less resources are available in the future for the government to spend on social and developmental needs. This implies that there is an intergenerational transfer of welfare from future generations to the present generation.

Additionally, to finance expansionary fiscal policy, the government might need to implement austerity measures in the future where the government cuts spending and increases taxes. Future growth will be compromised.

#### Other possible reasons:

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Suggested Answers to A Level 2023 H2 Economics (ESSAYS) by Hwa Chong Institution Economics Unit

- Impact on environment (sustainable economic growth)
- Impact on inequality (inclusive economic growth)
- Conflict with BOT

#### **Conclusion**

Expansionary fiscal policy designed to achieve economic growth or lower unemployment may lead to undesirable consequences. Hence, the use of expansionary fiscal policy is dependent on the context and issues faced by the economy.

#### Mark scheme

To score L3 your need to address the two requirements:

- Explain the impact of expansionary FP on 1 unintended consequence
- Explain the impact of expansionary FP on another unintended consequence.

#### Part (b)

Discuss whether **expansionary** supply-side policies would be effective in **achieving the macroeconomic policy aims** of an economy. [15]

#### <u>Intro</u>

There are four macro aims that an economy wants to achieve: economic growth, low unemployment, price stability, and favourable BOT. The term expansionary usually refers to growth so expansionary SSP can be seen as a policy that targets actual growth during an economic downturn. Hence, this essay will explore the effectiveness of SSP to lower costs in achieving internal macro goals and SSP to increase productivity in achieving external macro goals so as to cover all four macro goals.

#### <u>Body</u>

# R1: Expansionary supply-side policies would be effective in achieving the internal macro aims of an economy: economic growth, low unemployment, and price stability

In times of economic downturn, the government might implement SSP to lower costs of production, such as subsidies for wages, rentals and utilities, which were implemented by the Singapore government during Covid19 induced recession. The decrease in costs of production will increase AS and this shifts AS<sub>0</sub> down to AS<sub>1</sub> as shown in figure 2 below. As a result, real national output increases from Y<sub>0</sub> to Y<sub>1</sub>, boosting economic growth and job creation, thus reducing demand-deficient unemployment. General prices level (GPL) will fall from P<sub>0</sub> to P<sub>1</sub>, curbing inflationary pressures.

Figure 2: Supply-side policies to lower the cost of production



#### Ev1: Limitations of effectiveness of expansionary SSP in achieving internal macro aims of an economy

SSP to lower costs of production are highly costly in nature so they can at best be used as short-term measures to temporarily stabilise the economy. Furthermore, it may not be affordable for many governments who lack reserves or who already have large fiscal deficits and debt, especially in times of economic downturn.

# R2: Expansionary supply-side policies would be effective in achieving the external macro aims of an economy: favourable BOT

The last macro policy aim is to achieve favourable BOT. An economy, such as the US, could be suffering from a BOT deficit and expansionary SSP can be used to correct the trade deficit.

Expansionary SSP can be implemented to improve exports competitiveness (both price and non-price) by improving quality and productivity. The government can provide grants, subsidies or tax incentives to encourage innovation and investment in R&D. For example, the Singapore government provides many different types of grants and subsidies to encourage automation and/or R&D. E.g. National Productivity Fund (NPF) provides grants to help enterprises in all sectors, with special emphasis on sectors where there is potential for large gains in productivity. Another example is Productivity Solutions Grant (PSG) which helps firms adopt off-the-shelf technology. In the long run, with higher levels of technology, the firms will be able to improve product design and quality of the exports, resulting in exports being highly differentiated from other countries' exports. This will lead to an increase in the demand of exports.

Additionally, with better production methods or processes, the firms will be able to improve productivity and generate more output with the given inputs, thus lowering costs of production. This will improve the price competitiveness of the exports and result in a rise in quantity demanded of exports, assuming demand for the exports is price elastic (i.e. many close substitutes in the global market). This can increase the export revenue and reduce the BOT deficit, ceteris paribus.

Furthermore, with higher productivity resulting in lower prices and better quality of domestic products, residents might switch from buying imported goods to consuming locally produced products, reducing the import expenditure and improving BOT.

#### Ev2: Limitations of effectiveness of expansionary SSP in achieving external macro aims of an economy

The degree of effectiveness of expansionary SSP in improving BOT depends on the root cause of the issue. If the root cause of the trade deficit is due to a lack of export competitiveness due to a loss in comparative advantage, supply side policies can be implemented to improve exports competitiveness. However, if the deterioration of BOT is due to low world demand, such as during the recent pandemic, the use of expansionary SSP can only be effective to a certain extent. But, this could also be addressed through subsidies to reduce costs of production which lead to increase in AS, reducing the GPL, making export more price competitive. This solution is only effective in the short run as it is not sustainable for the government to continually subsidise to maintain export price competitiveness.

#### Summative Conclusion

Whether expansionary supply-side policies would be effective in achieving the macroeconomic policy aims of an economy depends on:

- Time period (SR vs LR): expansionary SSP will be effective in achieving macro goals if the issue faced is less urgent and not time-sensitive.
- Root cause of the issues:
  - E.g. If the issue faced is demand deficient unemployment, expansionary demand management policy will be more effective to be used to address the situation.

• To curb demand-pull inflation, contractionary demand management policy is required. Although expansionary SSP can help to achieve non-inflationary growth, it can only be achieved in the long run. The consequences of high inflation can be severe and hence this issue needs to be addressed immediately (*this point can also be written under time period*)

In the context of Singapore, the government uses various types of expansionary SSP. During recession, Singapore uses SSP to lower costs of production to tide over the effects of recession. Singapore also utilises foreign labour policy to attract foreign talents and foreign workers to support Singapore's economy as it continues to grow over time, amidst challenges such as ageing population. This is also supported by other SSPs to improve productivity by encouraging the use of technology and continuous skills upgrading. To achieve growth, Singapore also uses other policies to complement expansionary SSP, such as expansionary fiscal policy by increasing government spending (G) to boost AD, so that AD will grow in tandem with AS to achieve the macro goals.

#### Alternative approaches:

<u>Approach 1</u>: (focus on how SSP to lower cost of production (SR SSP) can achieve macro goals) R1: SSP to lower cost of production will lead to increase in real national output, alleviating the impact of economic

downturn → achieve economic growth, lower unemployment, and lower GPL

*Ev1: limitation of the effectiveness: costly, unlikely to be sufficient to fully curb the fall in AD R2: SSP to lower cost of production can improve export price competitiveness, improving BOT Ev2: its effectiveness is temporary as prices of export will increase again once the measure is lifted SC: limited effect in the SR + recommendation of other policy to complement* 

<u>Approach 2</u>: (focus on how SSP to improve productive capacity (LR SSP) can achieve macro goals) R1: SSP to improve productive capacity can lead to a rightward shift of AS, leading to non-inflationary growth (achieve economic growth, lower unemployment, and price stability). Ev1: limitation of the effectiveness: long run, costly R2: SSP to improve productive capacity can improve BOT Ev2: extent of effectiveness depends on the root cause of issue faced by BOT SC: effectiveness depends on the urgency of the issues (SR vs LR)

#### Mark scheme

To score L3 your need to address the two requirements:

- Explain how SSP help at least 1 macro goal
- Explain how another SSP help another macro goal.
- To score E3 you need to

• Make a substantiated stand whether SSP helps achieve macro goals.