

- 1 Recent developments, such as improvement in the state of technology, nation-wide wireless internet access and phenomenal growth in emerging economies like China and India, have affected the demand for and supply of netbooks, laptops, desktop computers and similar products.

Discuss how the abovementioned markets could be impacted by these developments. [25]

Intro

- Demand refers to the willingness and ability of consumers to buy a good at various prices, *ceteris paribus* while supply refers to the willingness and ability of firms to produce a good at various prices, *ceteris paribus*. The actions of buyers and sellers in the market will determine the market equilibrium price and output.

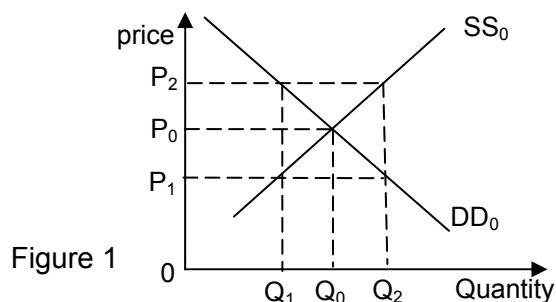


Figure 1

- From figure 1:
 - If the price is P_1 , quantity demanded $>$ quantity supplied \rightarrow shortage of $Q_1Q_2 \rightarrow$ consumers who are willing and able will bid up the prices in order to get the good while producers will respond to the higher prices by \uparrow quantity supplied.
 - If the price is P_2 , quantity supplied $>$ quantity demanded \rightarrow surplus of $Q_1Q_2 \rightarrow$ producers will lower prices in order to get rid of excess stocks while consumers will respond to the lower prices by \uparrow quantity demanded.
 - The above processes will continue until the shortage and surplus are eliminated at P_0 where quantity demanded is equal to quantity supplied. Hence, equilibrium price is P_0 and output is Q_0 .

Body

- a) With improvements in technology, it makes it possible for wireless internet access to be available to many people, thereby \uparrow supply of wireless internet service. Eg:
- Recent developments in mobile internet allow people to have access to broadband-on-the-go with the aid of a small device.

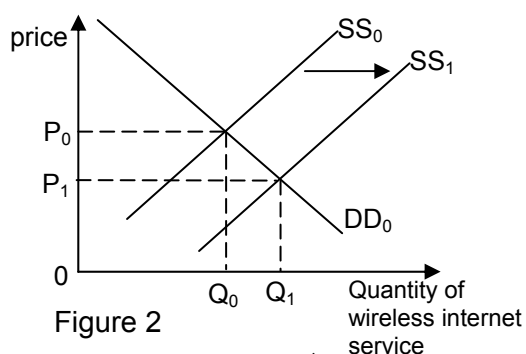


Figure 2

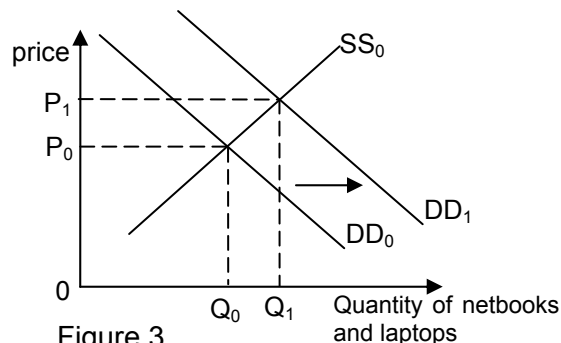


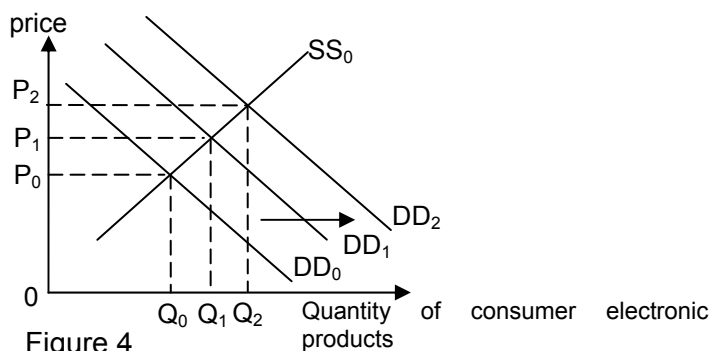
Figure 3

- From figure 2, such \uparrow in supply of wireless internet service from SS_0 to $SS_1 \rightarrow \downarrow$ price from P_0 to P_1 and \uparrow quantity from Q_0 to Q_1 . Since wireless internet service is a complement for wireless-enabled mobile devices such as netbooks and laptops $\rightarrow \uparrow$ demand for such mobile devices from DD_0 to DD_1 in figure 3 \rightarrow shortage \rightarrow Upward

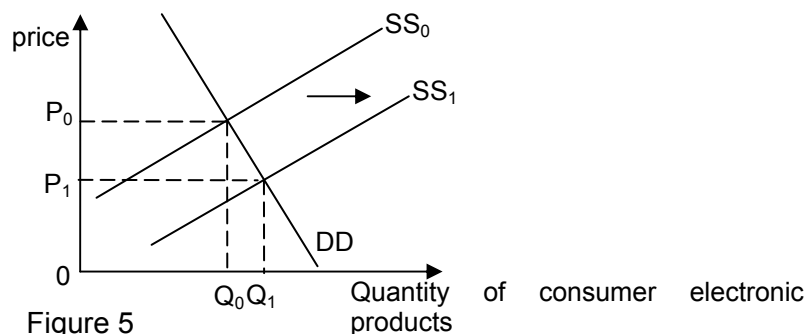
pressure on price. Eventually, a new market equilibrium is reached where quantity demanded will once again be equal to the quantity supplied $\rightarrow \uparrow$ equilibrium price from P_0 to P_1 and \uparrow equilibrium quantity from Q_0 to Q_1 .

Briefly explain IED

- Income elasticity of demand (IED) measures the degree of responsiveness of DD for a good due to a change in consumers' income, *ceteris paribus*.
- A good that has positive income elasticity of demand is one in which the demand for the good rises when the income rises and falls when income falls, *ceteris paribus*. Such goods are known as normal goods. A good that has negative income elasticity of demand is one in which the demand for the good falls when the income rises and rises when income falls, *ceteris paribus*. Such goods are known as inferior goods.
- For $0 < IED < 1$, DD is said to be income inelastic because these goods are necessities whereby \uparrow income \rightarrow less than proportionate \uparrow demand (there is only so much an individual needs to consume for a necessity), *ceteris paribus*. For $IED > 1$, demand is said to be income elastic because these goods are luxury goods. When incomes are rising strongly and consumers go ahead with "big-ticket" items, the demand for luxury goods will rise more than proportionately.
- DD for these consumer electronic products is likely to be income elastic as they are not a necessity and can be generally treated as luxury goods.
- Phenomenal growth in China and India $\rightarrow \uparrow$ national income $\rightarrow \uparrow$ purchasing power \rightarrow significant \uparrow demand for these consumer electronic products \rightarrow greater rightward shift in DD curve from DD_0 to DD_2 , rather than from DD_0 to DD_1 in figure 4 \rightarrow larger shortage at prevailing market price \rightarrow greater \uparrow equilibrium price and \uparrow equilibrium quantity from P_0 to P_2 and from Q_0 to Q_2 respectively



- a) With improvements in technology \rightarrow more output can be produced using the same amount of resources $\rightarrow \downarrow$ cost of production $\rightarrow \uparrow$ profits, *ceteris paribus* $\rightarrow \uparrow$ supply of these consumer electronic products



- From figure 5, \uparrow supply of consumer electronic products \rightarrow surplus \rightarrow Eventually a new market equilibrium is reached where quantity demanded will once again be equal to the

quantity supplied \rightarrow \downarrow equilibrium price from P_0 to P_1 but \uparrow equilibrium quantity from Q_0 to Q_1

Briefly explain CED

- Cross elasticity of demand (CED) measures the degree of responsiveness of demand for a good due to a change in price of a related good, ceteris paribus.
- If its sign is (-), both goods are complements because \uparrow price of good Y \rightarrow \downarrow quantity demanded for good Y \rightarrow \downarrow demand for good X. If its sign is (+), both goods are substitutes because \uparrow price of good Y \rightarrow \downarrow quantity demanded for good Y \rightarrow \uparrow demand for good X
- For $0 < CED < 1$, demand is said to be cross price inelastic because these goods are weak complements or substitutes whereby \uparrow price of good Y \rightarrow less than proportionate \downarrow demand for good X (complements) or less than proportionate \uparrow demand for good X (substitutes), ceteris paribus. For $CED > 1$, DD is said to be cross price elastic because these goods are strong complements or substitutes whereby \uparrow price of good Y \rightarrow more than proportionate \downarrow demand for good X (complements) or more than proportionate \uparrow demand for good X (substitutes), ceteris paribus.
- Netbooks and laptops are likely to be strong substitutes for desktop computers because they serve similar needs of performing work by students or office workers. In other words, the demand for desktop computer is highly cross price elastic with respect to the price of netbooks and laptops.
- With \downarrow price of netbooks and laptops \rightarrow more than proportionate \downarrow demand for desktop computers, ceteris paribus \rightarrow surplus \rightarrow downward pressure on prices \rightarrow new equilibrium price and quantity are lower

Conclusion

Improvement in technology is a key factor which drives the markets for the said items and similar products. This coupled with a busy lifestyle whereby people are required to access their work while on the move would mean that the markets for new mobile devices will only grow while the markets for old devices will shrink in the long run.

Marking Scheme

Level	Marks	Description
L4	20 – 25	<ul style="list-style-type: none"> • Thorough analysis on how all three recent developments can influence the markets and how the markets are related • Strong application of simultaneous shifts and elasticity concepts is evident
L3	15 – 19	<ul style="list-style-type: none"> • Good analysis on how the recent developments can influence the markets and how the markets are related • At least two recent developments are considered • Application of simultaneous shifts and elasticity concepts is evident • At least one elasticity concept is applied
L2	12 – 14	<ul style="list-style-type: none"> • Some analysis on how the recent developments can influence the markets and how the markets are related • Not all three recent developments are considered • Application of simultaneous shifts or elasticity concepts is evident
L1	10 – 11	<ul style="list-style-type: none"> • Some simple but accurate analysis, e.g. single shifts in demand/supply curve, is evident • No application of simultaneous shifts and elasticity concepts • How the markets are related are not considered
	1 – 9	<ul style="list-style-type: none"> • Smattering of points with limited understanding on how the recent

		<p>developments can influence the markets and/or how the markets are related.</p> <ul style="list-style-type: none"> • Glaring conceptual errors, e.g. label demand curve as supply • Incomplete diagrams
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Marker's Report

Question interpretation

- Some candidates state that the products similar to netbooks, laptops and desktop computers include computer tables, hard disks and thumbdrives. This is incorrect. The similar products refer to the substitutes such as tablet PCs like iPad or even smartphones that allow the users to surf the internet on the go.
- Some candidates explained how the cause of phenomenal growth could affect the stated markets by looking at abundance of low-wage workers and comparative advantage in labour-intensive products. They should have explained the impact of phenomenal growth in China and India on the market for netbooks, laptops, desktop computers and similar products, i.e. how rise in income could affect the demand for netbooks, laptops, desktop computers and similar products.

- 2 (a) Explain how firms in monopolistic competition and oligopoly compete in their respective market structure. [10]
- (b) Discuss whether there is more innovation and greater consumer welfare in oligopoly than in monopolistic competition. [15]

Introduction:

- Briefly state the key features of firms in monopolistic competition and oligopoly

Body:

Firms in monopolistic competition are price setters since they have some degree of market power and the demand for their good is highly price elastic due to their products being slightly differentiated from other close substitutes → engage in price competition via discounts → fall in price leads to a more than proportionate rise in Q_{dd} , ceteris paribus → rise in TR

Given that it is not sustainable to engage in price competition, these firms also engage in non-price competition → real or imaginary product differentiation as well as advertising → With advertising, demand for their product increases due to perceived superiority in the quality of their goods over their rivals → rise in TR → In the context that rise in TR > rise in TC → rise in profits.

Firms in oligopoly observe a mutual interdependence characteristic → price rigidity in non-collusive oligopoly market since any increase or reduction in price will lead to the firm experiencing a fall in its TR → Assuming constant cost, lower profits will result if oligopolistic firms engage in price competition.

Since the firms could not engage in price competition, they resort to non-price competition such as product development and branding. For example, the major aims of product development are to produce a product that will sell well (i.e. one in high or potentially high demand) and that is different from rivals' products, which means that it has a relatively price inelastic demand due to lack of close substitutes → rise in demand → rise in TR → Assuming cost constant, profit is higher.

Alternatively, firms in oligopoly may also collude to drive out other competitors in the market.

A4: Firms in oligopoly may collude by mutually agreeing to fix price or output → For example, collusion could take place informally under the price leadership model whereby the firm with the largest market share might choose to set a price that does not maximise short-run profits for the industry. The other firms in the collusion would also follow suit. Another purpose of limit pricing is to drive out the existing smaller competitors in the market since the smaller firms are not able to match the low price without incurring substantial losses

Conclusion:

In my opinion, competition to some extent is good for existing firms since it motivates them to be cost-efficient but when practised excessively, it may be detrimental to the consumers.

Marking Scheme

Level	Marks	Descriptors
L3	7 – 10	<ul style="list-style-type: none"> Thorough analysis of how firms compete in terms of price and non-price competition in their respective market structures based on their

		features <ul style="list-style-type: none"> • Explained price rigidity concept in detail as a basis of why firms in non-collusive oligopoly do not engage in price competition • Good usage of relevant examples
L2	5 – 6	<ul style="list-style-type: none"> • Able to provide a relatively detailed analysis of how firms compete in terms of price and non-price competition in their respective market structures based on their features • Some explanation of price rigidity concept in oligopoly
L1	1 – 4	<ul style="list-style-type: none"> • Smattering of points, some conceptual errors evident • Vague understanding of how firms compete in terms of price and non-price competition in their respective market structures based on their features

Marker's Report

Areas for improvement:

1. Poor question focus:

A number of candidates spent a good section of essay on explaining the characteristics of the 2 market structures in detail, when the question focus should be on that of how firms in the 2 market structures compete – through price or non-price competition methods.

2. Most candidates did not have a clear introduction to explain the rationale of why firms will want to collude – which is that of profit-maximisation or to increase market share – this can help to guide students in their analysis later on when they explain how oligopolistic and MC firms can compete to achieve their objectives.

- (b) Discuss whether there is more innovation and greater consumer welfare in oligopoly than in monopolistic competition. [15]

Introduction:

The level of innovation could depend on the amount of profits that firms in both market structures earn in the long run. Consumer welfare could depend on the following variables such as price and quality of the product and variety of products available for the consumers.

Body:

An oligopolist has the incentive and ability to invest in large-scale research and development (R&D) programmes for his product. This is because firstly, he is likely to have the funds due to his ability to earn supernormal profits in the long run as there are high barriers to entry.

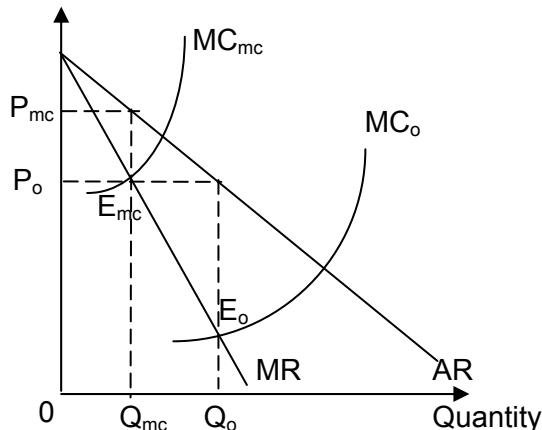
Since R&D brings about cheaper methods of production and new products, consumers can enjoy better quality products. In addition, more innovative methods of production → cheaper production methods → lower unit cost of production → pass on to consumers in the form of lower price → consumer surplus higher → greater consumer welfare

Monopolistic competition may not have the excess profits to engage in R&D. In the long-run, new firms can enter and existing firms can exit from the industry in response to the level of profits due to low barriers to entry and exit → make normal profits → lack of funds to engage in R&D → lack of innovation → quality of products may be compromised → lower consumer welfare in monopolistic competition

Oligopoly has greater consumer welfare than monopolistic competition due to economies of large scale production.

Firms in oligopoly tend to dominate the market → tend to produce on a larger scale of production since they cater to a larger market demand compared to firms in monopolistic competition → firms in oligopoly able to enjoy economies of large scale production since they can buy inputs in bulk at a discounted price since suppliers are keen to maintain business relation with big buyers → lower unit cost of production in oligopoly than in monopolistic competition

Price, Revenue, Cost



Since the costs in oligopoly are lower than those in monopolistic competition, the former will produce and sell a higher output, which is Q_o , at a lower price of P_o → higher consumer welfare in oligopoly

There could be greater consumer welfare in monopolistic competition than in oligopoly due to the differences in market power.

The degree of market power for firms in an oligopolistic market is relatively greater than that of firms in a monopolistically competitive market → firms in an oligopolistic market have a greater tendency to exploit consumers due to greater degree of market power → price set by firms in an oligopolistic market tend to be higher since demand for the goods/services tend to be relatively more price inelastic as compared to firms in a monopolistically competitive market → Oligopolistic firm charges a higher price → Greater consumer welfare in monopolistic competition

Monopolistic competition offers a greater variety of products due to many close substitutes available, But in oligopoly, due to a few dominant sellers in the market, there could be a lack of variety of goods/services → consumer welfare greater in monopolistic competition than in oligopoly

Monopolistic competition can also have greater innovation and consumer welfare due to the number of firms in the industry compared to oligopoly.

Since there are many firms in monopolistic competition, there is a competitive pressure on profit → More efficient methods of production → lower prices for consumers. Additionally, engage in R&D → improve quality of product and expand variety of product

Conclusion:

Given the possibility of reaping large economies of scale and supernormal profits in the long run in oligopoly, there could be more innovation and consumer welfare in the latter than in

monopolistic competition. However, for certain goods and services, monopolistic competition could bring about more consumer welfare.

Marking Scheme

Level	Marks	Descriptors
L4	12-15	<ul style="list-style-type: none"> In depth discussion of how oligopoly can bring about greater innovation and consumer welfare compared to monopolistic competition with insightful evaluation evident Good integration of diagrams and examples in answers is evident
L3	9-11	<ul style="list-style-type: none"> Good analysis of how oligopoly and monopolistic competition can bring about greater innovation and consumer welfare with some evaluation evident Diagrams are drawn and are adequately explained
L2	7-8	<ul style="list-style-type: none"> Some comparison between the 2 types of market structures evident Some analysis of how oligopoly and/or monopolistic competition can bring about greater innovation and/or consumer welfare but with little or no evaluation evident Diagrams are not drawn or are incomplete
L1	1-6	<ul style="list-style-type: none"> Smattering of points, some conceptual errors evident No/limited comparison between the 2 market structures Vague understanding of how each market structure can bring about greater innovation and/or consumer welfare

Marker's Report

1. Wrong focus:

In comparing consumer welfare based on grounds of pricing and output, candidates often compared perfectly competitive industry when question is on oligopoly versus monopolistic competition. Respond clearly to question and not just regurgitate class notes!

2. Lack of a good balance:

Many students seemed to run out of time for this question and spent much time explaining why oligopolists have greater innovation and consumer welfare than MC but did not spend adequate time explaining why MC market structure can have greater consumer welfare due to less market power compared to oligopolistic market structure.

- 3 Living in a global city comes with costs; worsening traffic congestion and income inequality.
- (a) Explain why traffic congestion and income inequality may lead to market failure. [10]
- (b) Assess the policies currently used by the Singapore government to deal with the above market failures. [15]

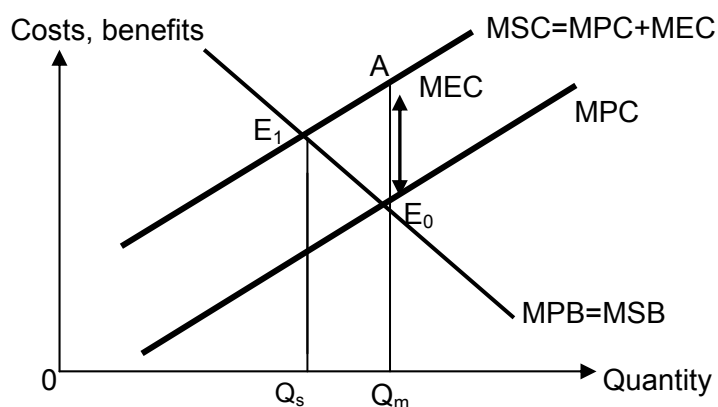
Part (a)

I. Introduction

1. Market Failure is undesirable because resource allocation concerning what, how, how much and for whom to produce using the market/price mechanism fails to achieve efficiency in allocation of scarce resources. Hence society's welfare is not maximised.
2. Equity in income distribution is to ensure a more equal distribution of income and wealth. It is usually measured by the Gini coefficient where the closer the value is to 1, the higher the income inequality in the country.

II. Body

- Negative externalities are external cost to third parties who are not directly involved in using the car, and they are not compensated for the damages incurred by them. For example, traffic congestion generates noise and air pollution that adversely affect the quality of living for residents living near the congested roads and increase their medical cost.
- Because of the presence of negative externalities, there is a divergence between marginal private cost (MPC) and the marginal social cost (MSC) by the extent of the marginal external cost (MEC). In order to obtain MSC, MEC is added to MPC.



- Assuming that there is no external benefit, marginal private benefit (MPB) is equal to marginal social benefit (MSB).
- When left to the free market, motorists only consider their private cost and benefit but ignore the external costs they impose on third parties. The satisfaction-maximizing motorists only consider their own private benefit and cost and will ignore the external costs incurred in using their car. Hence they will use their cars (or road) to a point where $MPB = MPC$ i.e. at point E_0 . Thus the market equilibrium

quantity of car usage is $0Q_m$. The social optimum level is obtained when MSB equals to the MSC at point E_1 with a level of car usage at $0Q_s$

- If left alone, the price mechanism will bring about a level of car usage ($0Q_m$) that is higher than what is deemed to be socially desirable ($0Q_s$). There is an over-usage of cars by Q_mQ_s as Q_m is greater than Q_s , leading to an inefficient allocation. Thus there is a total welfare loss (deadweight loss) of area E_0E_1A to the society.
- Market may fail to the extent that they fail to achieve other social objectives such as greater equality in the distribution of income. Even if resources are efficiently allocated, their effect on equity may not be optimal from the social or political perspective.
- In a market-based economy, price mechanism solves the basic problems of what and how much, how to and or whom to produce. As resources are allocated through the price mechanism, the free play of market forces of demand and supply determines the price which then acts as a signal to firms to allocate scarce resources. In addition, different people are willing and able to pay different prices. This difference in purchasing power determines for whom the goods are produced. Since the price mechanism is driven by consumer sovereignty, only goods that people are willing and able to buy are produced.
- Consumers' money votes determine what is actually produced and those with more money will be able to consume more of the goods produced. As the rich has more dollar votes than the poor, resources would be allocated through the price mechanism such that more luxury goods such as golf courses would be produced.
- In such a situation, there is unsatisfactory or unfair allocation of resources. The society's welfare is not maximised as certain needs of the population are not fulfilled. As such, the free market has failed to achieve a socially desirable allocation of resources to maximize social welfare. The greater the income inequality (i.e. the closer the Gini coefficient is to the value 1), the more socially undesirable is the allocation of resources.

III. Conclusion

3. In both cases, market failure results and society's welfare is not maximised. Traffic congestion is a result of an over-usage of road space. On the other hand, for income inequality, it results in an unsatisfactory allocation of resources as the price mechanism fails to take into account the needs of the low-income earners.

Marking Scheme

Level	Marks	Descriptor
L3	7 – 10	<ul style="list-style-type: none"> • Detailed explanation of how market failure arises, with in-depth analysis of both cases, including: <ul style="list-style-type: none"> ○ Clear examples ○ A properly drawn diagram to illustrate market failure and ○ The use of Gini Coefficient to illustrate degree of income inequality
L2	5 – 6	<ul style="list-style-type: none"> • Some explanation of why traffic congestion and income inequality may lead to market failure, though there is no in-depth analysis. <ul style="list-style-type: none"> ○ E.g. Limited examples to highlight the given two subjects or evidence

		of some conceptual errors in analysis.
L1	1 – 4	Smattering answers with scant elaboration

Markers' Report

AFIs:

- Poor understanding of market failure: many students did not recognise market failure means the failure of the market/price mechanism in resource allocation.
- Due to incorrect understanding of market failure, many students misinterpreted the question. Instead of writing on resource allocation, these students wrote on reasons/causes of income inequality.

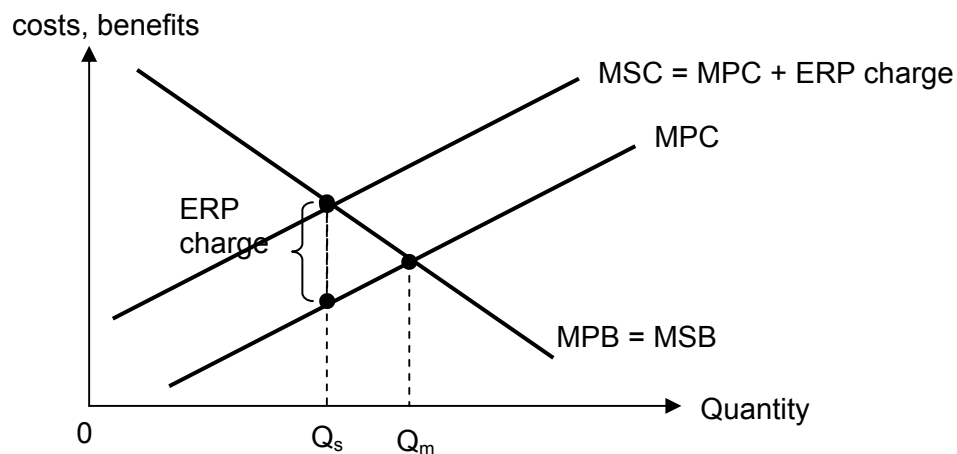
- (b) Assess the policies currently used by the Singapore government to deal with the above market failures. [15]

I. Introduction

1. As income inequality and traffic congestion result in market failure and thus society's welfare is not maximised, there is a need for the Singapore government to intervene.

II. Body

- Singapore is probably the first city in the world to invent a full electronic road pricing (ERP) scheme. All cars are fitted with a tracking and charging device. The electronic device mounted on a car is triggered if the car enters a congested area and appropriate charge will be levied according to the amount of congestion. ERP allows government to charge different rates at different times of the day based on the severity of the traffic congestion.



- If the ERP charge is calculated to reflect accurately the marginal external cost, then the motorist is said to internalise the external cost. The resulting higher total cost of car usage will shift MPC to the left to $MSC = MPC + \text{ERP charge}$. Hence there is a reduction in car usage from OQ_m to the socially optimal level of OQ_s , where the marginal social cost is equal to the marginal social benefit ($MSB = MSC$). The welfare loss arising from over-usage of cars is thus eliminated.
- ERP is a fair system as the charges are based on usage so that who contributes more to congestion pay more, which is similar to the "polluter pays" principle. Those who use roads less frequently or who travel during non ERP hours pay less.

- The aim of the Singapore government is to make public transport an attractive alternative to driving cars. This is being carried out by improving the existing infrastructure through building a more efficient public transport system.
- In addition the government also makes use of technology in the area of shortening waiting time and making information on waiting time more readily available for consumers through investment in the latest technology.
- Difficult to balance between providing quality nationwide accessible public transport and keeping costs low and hence, affordable for users. The burden of the costs of providing public transport (if government has to subsidise) will eventually fall on taxpayers.
- By taxing the rich proportionately more than the poor, the post-tax distribution of income will be more equal than the pre-tax distribution. The more progressive the tax system, the more incomes will be equally distributed.
- The imposition of progressive income tax could have a negative impact on the incentive to work. High marginal tax rates can create disincentives for people who are close to the next tax bracket to work harder and gain more income. If this happens, scarce resources are not being used to their effect and there is inefficiency.
- Subsidies, such as cash benefits like Workfare Income Supplement (WIS) are also given by the Singapore government. Subsidies would lessen inequality as they account for a larger proportion of a poor person's income than a rich person's.
- For WIS:
Since it requires one to be employed to receive the benefits, it fails to target the elderly and sickly poor who are genuinely unemployed.

III. Conclusion

As far as dealing with traffic congestion is concerned, the Singapore government has implemented a package of policies that seeks to reduce traffic congestion by addressing car usage and quality of public transport. In the area of addressing the issue of income inequality, the policies supported by a multi-tier social security system could turn the tide on inequality and ensure that the gains from economic growth are more widely shared.

Marking Scheme

Level	Marks	Descriptors
L4	12-15	<ul style="list-style-type: none"> • Thorough explanation of at least 3 policies , demonstrating excellent application with relevant economic analysis and evaluation on how the measures correct the 2 causes of market failure • Make a judgement of the relative appropriateness of measures and able to justify the judgement made in terms of the more appropriate policies implemented • Insightful conclusion
L3	9-11	<ul style="list-style-type: none"> • Thorough explanation of at least 2 policies, demonstrating excellent application with relevant economic analysis and evaluation on how the measures correct the 2 causes of market failure • Make a judgement of the relative appropriateness of measures
L2	7-8	<ul style="list-style-type: none"> • Some explanation of policies with evaluation • Without clear application of measures to the 2 sources of market failure

L1	1-6	<ul style="list-style-type: none"> • Smattering of ideas or descriptive answers of policies, with limited evaluative comments.
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Markers' Report

Question Misinterpretation

- Question clearly states traffic congestion in the context of Singapore but students wrote on:
 - Tradable pollution permit, green technologies policies to reduce pollution level and demerit goods such as smoking.
- Question asks for policies to reduce income inequality but
 - Students wrote on policies to increase consumption of merit goods such as education and healthcare.

- 4 To be considered successful, an economy needs to achieve long-term economic growth and stability.
- (a) Explain this statement. [10]
- (b) Discuss whether supply-side policies are the most effective way for Singapore to sustain a successful economy. [15]

Part (a)

I. Introduction

1. According to the above preamble, the key macroeconomic objectives of a successful economy are achieving long term economic growth and stability. The attainment of these macroeconomic objectives is important to any economy as the respective macroeconomic objective can individually lead to the attainment of other economic objectives.

II. Body

2. Economic growth takes place when there is an increase in the country's real GNP.

To increase the standard of living: Economic growth means that national income increases. *Ceteris paribus*, this means that people's purchasing power has increased. Hence, they are able to buy and enjoy more goods and services, leading to a rise in their material aspect of standard of living. Economic growth means that government can collect more tax revenues to finance expenditure on infrastructure, education and health care. All these will mean that the citizens are able to enjoy a higher level of economic welfare which is especially beneficial for developing countries.

To bring about greater equality in income distribution: Where there is economic growth, there will be an increase in government tax revenues. This makes it easier for govt to redistribute income to poor, without the need to raise tax rates. These tax revenues can be redistributed to the poor in the form of subsidies.

3. Low inflation represents price stability and creates confidence in people within the economy. It creates a more certain environment in which both businesses and households can plan and operate more efficiently. It is an essential ingredient for sustainable growth in investment, output and jobs.

With low inflation, firms are better able to predict future revenue, costs and thus profits with greater certainty. Foreign investors may also be attracted to invest in the country due to relatively lower costs compared to other countries with higher inflation rates.

With low inflation relative to other countries, this allows a country to enjoy export competitiveness, where exports become relatively cheaper. This would lead to an increase in the demand for exports. Hence total revenue from exports increases. As such there is an improvement in BOP.

4. An open economy will have a balance of payments account. The balance of payments is a record of a country's international transactions between its residents and those of the rest of the world over a period of time. It records the flow of goods and services, gifts and assets between the residents of a country and those of other countries over a period of time. One of the aims of the government is to maintain a

healthy balance of payments, which is usually associated with a balance of payments surplus

A BOP surplus could reflect an economy that is fundamentally strong. This will enable the economy to increase its international competitiveness. Attracts investment which increases AD propelling greater employment and economic growth. Since rise in investment in capital goods, increases productive capacity of economy which increases LRAS. Thus sustained economic growth goal achieved.

III. Conclusion

Achieving the three key macroeconomic goals has always been important. Without growth, peoples' standard of living will not increase, and if inflation is too high then the value of money falls, negating any increase in money incomes. It is worth-noting that one of the missions of the Monetary Authority of Singapore is to promote sustained non-inflationary economic growth.

Marking Scheme

Level	Marks	Descriptor
L3	7 – 10	<ul style="list-style-type: none"> • Clear criteria stated to determine the importance of achieving the 3 key macroeconomic goals • Detailed explanation of the three key macroeconomic goals required, with good application to an economy, e.g. Singapore • Some judgement on attainment of main economic goal for an economy, e.g. Singapore • Detailed explanation of the 3 key macroeconomic goals but with limited application to an economy
L2	5 – 6	<ul style="list-style-type: none"> • Some explanation of the macroeconomic goals associated with long-term economic growth and stability is evident • Thorough explanation of at least two of the three key macroeconomic goals
L1	1 – 4	Smattering answers with scant elaboration of its impact to other economic goals

Markers' Report

I. Question Interpretation

1. Question is NOT on how to achieve LT growth and stability (i.e. not on causes and policies to achieve the objectives). Rather it's on why the need to achieve LT growth and stability (ie positive consequences)
2. Many students did not address question directly. For example benefits of LT growth and stability (both internal and external) are required rather than costs.

- (b) Discuss whether supply-side policies are the most effective way for Singapore to sustain a successful economy. [15]

I. Introduction

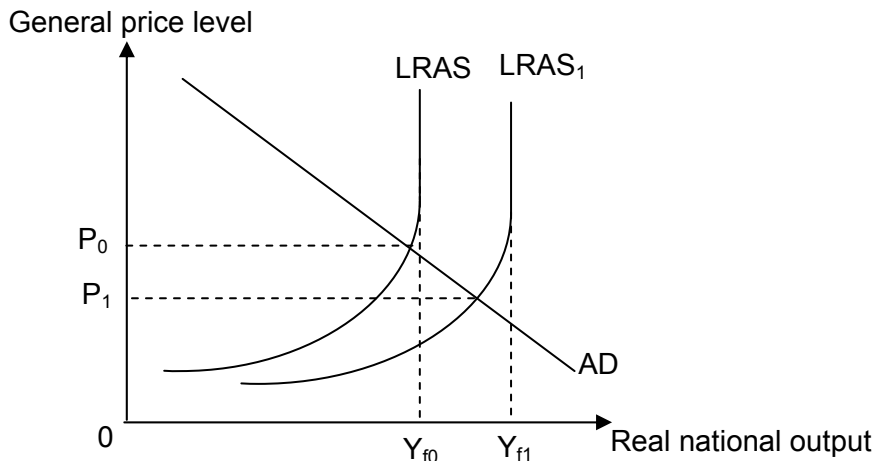
1. As Singapore lacks natural resources and is heavily dependent on international trade, long-term economic growth and stability in Singapore hinge on the quality of its human labour and its export competitiveness and the quality of its human capital. In this light,

effective supply-side policies can be used to achieve both long-term economic growth, internal stability, i.e. low inflation, and external stability, i.e. satisfactory BOP.

II. Body

2. Supply-side policies can achieve long-term economic growth in Singapore.

- In order to achieve sustainable rates of economic growth and thus avoiding overheating of the economy, we must increase the productive capacity of the economy by increasing the quantity of resources (i.e. natural resources, labour or capital) and efficiency with which these resources are used, through advances in technology, improved labour skills or improved organisation.
- Interventionist supply-side policies are adopted by the Singapore government to increase AS. For example, intervention can take the form grants for research and development. Successful R&D could bring about an improvement in the state of technology.
- By doing so, the aggregate supply increases. Hence, LRAS will increase and the LRAS curve will shift to the right from LRAS to LRAS₁. There is an increase in the full-employment level of national output or potential output from Y_{f0} to Y_{f1} , which represents long-run economic growth.



3. Evaluation

- Supply-side policies help to reduce inflation because there is a fall in the general price level from P_0 to P_1 . At the same time, they promote long term growth and a satisfactory balance of payments via increased export competitiveness and creating a more conducive environment for foreign direct investment. Hence there is no conflict with the macroeconomic goals of long term economic growth and stability. As such, supply-side policies are vital in sustaining a successful economy.

4. Demand-side Policy (e.g. Fiscal Policy)

Expansionary fiscal policies such as lowering of personal/corporate income taxes and/or increasing government expenditure can stimulate actual growth.

- ❖ $\uparrow G$ on final goods & services such as building infrastructure, spending on education and healthcare $\rightarrow \uparrow AE$.
- ❖ $\uparrow AE \rightarrow \uparrow$ incentive of firms to produce more due to higher expected profits \rightarrow assuming economy is at less than full employment, multiplied \uparrow real national output, $\uparrow NY$ and employment, thus boost economic growth. With strong actual economic growth, there would be a rise in investors' optimism, which would lead to a rise in investment. When this happens, the productive capacity in the economy would expand, shifting LRAS curve to the right, hence achieving long-

run economic growth and stability.

5. Evaluation

- Small size of Singapore's multiplier, which is due to high MPW arising from high MPS and MPM.
 - Hence expansionary fiscal policy is ineffective to stimulate growth because with a small multiplier value, the final rise in national income is limited. Therefore, government may have to spend even more or reduce tax further in order to achieve the desired outcome. This will pose a financial strain on government during lean budget years.

6. Exchange Rate Policy

- Singapore is very dependent on trade. As such, exchange rate policy also plays a vital role in helping Singapore achieve long-term economic growth and stability.
- The Singapore government allows the Singapore dollar (SGD) to appreciate. When SGD appreciates, the price of imported raw materials would fall in domestic currency. This would reduce the cost of production, leading to a rise in AS. When this happens, general price level would fall, contributing to a fall in import-price-push inflation. This would help to achieve price stability in Singapore.

7. Evaluation

- However, unlike supply-side policies, exchange rate policy only addresses the issue of the price competitiveness of exports. In addition, it also has possible negative impact on export price competitiveness when the price of exports rises in foreign currency due to appreciation of SGD. Hence, this is only a short-term measure.

III. Conclusion

In order to achieve long-term economic growth and stability so as to sustain a successful economy, it appears that supply-side policies are the main policy of choice.

However, the government must anticipate and respond to external events well. In today's rapidly changing situation, the government must be swift in recognising the current economic climate, so as to help them to identify their top priority and address the most urgent problems first, usually via demand-side policies such as the fiscal policies, in order to stabilize the economy and eventually achieve sustained growth and stability in the long run.

Marking Scheme

Level	Marks	Descriptors
L4	12-15	<ul style="list-style-type: none"> • For an accurate and developed explanation of the use of supply side policy for Singapore and at least two other relevant policy, with an excellent ability to describe and explain this in a precise, logical, reasoned manner • Excellent attempt at evaluation by examining the effectiveness of supply side policy and 2 other policies for Singapore set in the context of the root cause and the underlying nature of the Singapore economy • Make a stand with insightful comments, with evidence of a substantiated value-judgement made in terms of comparing the effectiveness of the supply side policies and the other government policies, to attain a successful economy
L3	9-11	<ul style="list-style-type: none"> • For an accurate and developed explanation of the use of supply side policy for Singapore and at least one 1 other relevant policy in achieving

		the macroeconomic goals for a successful economy
L2	7-8	<ul style="list-style-type: none"> • For some explanation of policies that are adopted by a government to achieve long-term economic growth and stability • Little reference to the nature of the Singapore economy or no attempt at evaluation
L1	1-6	<ul style="list-style-type: none"> • Where the answer is mostly irrelevant and contains only a few valid points made incidentally in an irrelevant context • The question has not been properly grasped, and there is inadequate development of analysis AND application

Markers' Report

I. Question Interpretation

1. Question is NOT on any policy for S'pore to sustain a successful economy. The subject of this question is "supply-side policies". Hence students must start with this policy rather than any other policies in general.
2. Not just supply side policies per se. Need at least two other policies

5 Discuss the impact of globalisation and capital flows on the Singapore economy. [25]

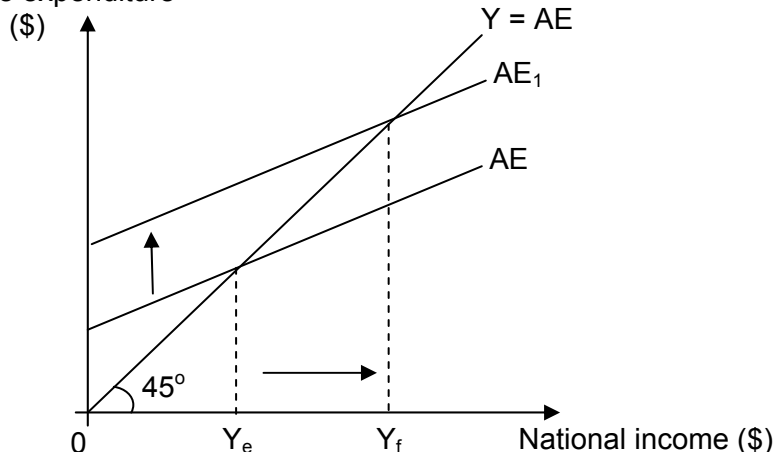
Introduction:

- Define globalization: a process of continuing integration of the countries in the world where national markets become increasingly interlinked
- Briefly state the factors which drive globalization: Accelerating pace of globalisation due to reduced trade barriers and technical progress especially in information technology and significant fall in transportation costs

Body:

Globalisation has led to a rapid expansion of international trade in goods and services through trade liberalisations and regional trading arrangements → trade creation as there is an increased in volume of trade → rising share of imports and exports in GDP clearly indicates the growing exposure of national economies to international trade → larger scale of production → allows for specialization to take place based on Singapore's comparative advantage → lower unit cost of producing final good/service → more price competitive exports → given demand for exports is price elastic due to many close substitutes available → quantity demanded for exports rises more than proportionately, ceteris paribus → rise in total revenue of exports → rise in (X-M)

Aggregate expenditure



The impact of a rise in net exports can be illustrated by an upward shift of the AE curve from AE to AE₁. Hence there is economic growth which is seen by the rise in national income from Y_e to Y_f. Additionally, unemployment would fall due to a rise in the derived demand for labour.

Given Singapore's nature of being heavily dependent on external demand to propel her economy due to her small domestic market, trade creation which increases her (X-M) will benefit Singapore's economy to a large extent.

Globalization allows sharing of expertise knowledge amongst countries and greater mobility of labour between countries → rise in quantity and quality of resources → rise in productive capacity of economy → rise in LRAS → rise in full employment level of real national output

Singapore benefits from this positive impact by a large extent as she needs to continuously be on par with the latest technological advancement in her production process so as to remain competitive in the international market since she is heavily reliant on external demand to propel her economy.

With greater capital flows in the form of FDIs and hot money → capital inflow → capital account improves

Given rise in (X-M) → current account improves, ceteris paribus

Since both capital and current accounts improve → BOP improves

Rapid globalization → developing countries such as China open their market to international trade and capital flows → made a breakthrough in producing low-end manufactured goods at lower opportunity cost with her relative abundance of low-wage labour → gained comparative advantage in producing low-end manufactured goods. Thus, Singapore lost her comparative advantage to China → fall in demand for Singapore's low-end manufactured goods since China's low-end manufactured goods are substitutes for Singapore's → occupational immobility → structural unemployment arises

This negative impact is cushioned by Singapore's appropriate measure of sending her workers for training/retraining → structural unemployment problem can be reduced in the future

With increasing interconnectedness among national markets, Singapore is more susceptible to economic recession or inflation due to trading partners experiencing changes in economic conditions.

However, Singapore was able to tide through these economic problems faced quite smoothly given the appropriate policies the government implemented to cushion the negative impact of recession

Globalisation has led to greater financial flows across national border. Total foreign direct investment (FDI) flows in the world increased. With the latter, it has resulted in exposure to new ideas, technology and products. New technology, in both advanced and developing economies, creates greater demands for those with higher skills. In advanced economies such as Singapore, the use of technology is widespread in both manufacturing and services, raising the skills premium in a substantial portion of the economy → widening income gap between the two groups of people → inequity in income distribution

Singapore has been taking pro-active approach to narrow income gap so as to minimize social tensions. For example, by making education compulsory for every resident, it ensures that they have basic literacy skills. Rebates and subsidies are also given to the lower-income group in order to raise their disposable income.

Globalization which allows for greater capital flows in terms of more FDIs in Singapore can impact Singapore negatively in future → when profits earned from the FDIs are taken back to their respective countries → large amount of income earned to abroad would flow out of Singapore → current account could worsen in the future

The negative impact is highly unlikely to occur in the near future because given the current trend in Singapore's BOP, her current account has been in a healthy surplus for a consistent period of time.

Conclusion:

Because of its small domestic market and lack of natural resources, Singapore is dependent on trade and FDI. With globalisation, there are more benefits than costs to the Singapore economy when it expands trade relations with more countries and experiences an improvement in the state of technology which has a positive impact on the quality of its exports.

Marking Scheme

Level	Marks	Descriptors
4	20 – 25	<ul style="list-style-type: none"> • Answer shows thorough knowledge of how globalization and capital flows have both positive and negative impact on Singapore's macroeconomic goals • Able to apply to Singapore context with good usage of relevant examples • Insightful comments/evaluation evident
3	15 – 19	<ul style="list-style-type: none"> • Answer shows ability to analyze in detail both positive and negative impact of globalization and capital flows on Singapore's macroeconomic goals • Application to Singapore's context clearly evident • Some evaluation evident
2	12 – 14	<ul style="list-style-type: none"> • Answer shows some knowledge of how globalization and/or capital flows has both positive and negative impact on Singapore's macroeconomic goals with some evaluation • Inconsistent application to Singapore's context • Lack of balance in positive and negative impact of globalization and capital flows on Singapore's economy.
1	10 – 11	<ul style="list-style-type: none"> • Answer shows some knowledge of how globalization and/or capital flows has both positive and negative impact on Singapore's macroeconomic goals with limited/no evaluation • Limited application to Singapore's context • Some conceptual errors evident
	1 – 9	<ul style="list-style-type: none"> • Answer shows little knowledge of how globalization or capital flows has both positive and negative impact on Singapore's macroeconomic goals • Several errors and inconsistencies occur in the explanation, showing lack of understanding of the economic concepts • Lack of economic analysis • No application to Singapore's context

Marker's Report

(1) Application to Singapore – demonstrate with the use of examples in analysis and evaluation of extent of impact

- Most students were not able to apply to the Singapore context consistently. They often gave a generic impact of globalisation without any examples or evaluation in the context of Singapore.

- 6 (a) Explain the main causes of a balance of payments deficit of a country. [10]
- (b) Discuss whether Singapore has the most to gain as a result of a depreciation of the Singapore dollar. [15]

Part (a)

Intro

- Balance of payments is a record of a country's international transactions between its residents and those of the rest of the world over a period of time.
- It is made up of the current account which records the total value of exports and imports of currently produced goods and services, investment incomes and unilateral transfers as well as the capital account which records the inflow and outflow of currency resulting from sales and purchases of assets.

Body

- In 2009, the US sub-prime crisis led to a world-wide recession including the US. Since US is a major trading partner of many countries, this will lead to
 - $\downarrow DD$ the country's exports $\rightarrow \downarrow$ export revenue
 - Ceteris paribus, with \downarrow export revenue and a constant import expenditure \rightarrow this would lead to a current account deficit and thus BOP deficit
- When there is higher inflation in the country relative to its trading partners
 - $\uparrow P$ exports \rightarrow assuming that the demand for exports is price elastic \rightarrow more than proportionate $\downarrow Q_d$ exports $\rightarrow \downarrow$ export revenue
 - Imports are now relatively cheaper $\rightarrow \uparrow DD$ imports $\rightarrow \uparrow$ import expenditure
 - Ceteris paribus, with \downarrow export revenue + \uparrow import expenditure \rightarrow this would lead to a current account deficit and thus BOP deficit, ceteris paribus.
- The business climate of a country depends on several factors such as government policies (tax rates, subsidies), labour productivity, infrastructure, etc.
- When there is a less conducive business environment such as a fall in labour productivity $\rightarrow \uparrow$ unit labour cost of production $\rightarrow \downarrow I \rightarrow$ since the expected rate of return falls \rightarrow capital outflow \rightarrow this will lead to a capital account and thus BOP deficit.

Conclusion

With globalisation, the world economies are increasingly getting more and more interconnected. This implies that the economic conditions of a country's trading partners such as income and price levels are likely to be the main causes of a country's BOP deficit.

Level	Marks	Descriptors
L3	7 – 10	<ul style="list-style-type: none"> • Thorough analysis on the possible causes of a country's BOP deficit • A balanced approach is adopted where the possible causes of both current and capital account deficits are included • A reasoned conclusion on the main causes of a country's BOP deficit is provided
L2	5 – 6	<ul style="list-style-type: none"> • Good analysis on the possible causes of a country's BOP deficit. • Limited or no attempt to address the main causes of a country's BOP deficit
L1	1 – 4	<ul style="list-style-type: none"> • Smattering of points with gaps in analysis

Markers' Report

1. General

- a) Most candidates were able to provide the factors leading to BOP deficit
- b) Most students did not give the definition of BOP. Where definition of BOP was provided, it was incomplete. Candidates are to note that "BOP consists of current and capital accounts" is not the definition of BOP.

- (b) Discuss whether Singapore has the most to gain as a result of a depreciation of the Singapore dollar. [15]

Intro

- The Monetary Authority of Singapore has been using the exchange rate policy where it allows a gradual appreciation of SGD to help achieve a non-inflationary sustainable growth. However, under some economic conditions, such as the 2009 recession triggered by the US sub-prime crisis, the SGD was allowed to depreciate.

Body

- During the 2009 economic recession, our government allowed SGD to depreciate because the most important economic goal back then was to cushion the impact of the US sub-prime crisis against a falling external demand which resulted in falling national income and employment in Spore.
- A depreciation of SGD results in a fall in prices of exports in foreign currency and rise in prices of imports in domestic currency. Assuming DD_x and DD_m are price elastic \rightarrow more than proportionate $\uparrow Q_d$ exports and more than proportionate $\downarrow Q_d$ imports $\rightarrow \uparrow$ export revenue + \downarrow import expenditure $\rightarrow \uparrow(X - M) \rightarrow$ ceteris paribus, improvement in current account.
- Since it was a period of recession, investors were generally pessimistic. A weak SGD would further result in a loss of confidence in the Singapore economy as it suggests that the economy is fundamentally unsound \rightarrow outflow of capital thus worsening capital account
- Ceteris paribus, overall BOP may improve if $\uparrow(X - M)$ can offset a worsening capital account.

Evaluation

- However, in the short-run, depreciation may worsen Singapore's current balance because the demand for exports and imports is very price inelastic. As a result, net exports would fall, rather than rise. This, coupled with the worsening capital account, would result in a worsening BOP for Singapore.
- With depreciation which leads to $\uparrow(X - M) \rightarrow \uparrow AD \rightarrow$ This rise in aggregate demand, ceteris paribus, will cause a shortage of goods and services and thus exert an upward pressure on prices. Firms will have more incentive to increase production and hire more workers. Hence, unemployment falls and national income increases.

Evaluation

- Depreciation of SGD only allows us to artificially obtain a competitive edge against others.
- A weak SGD may lead to a rise in the general price level because of $\uparrow AD$ as shown above if economy is near or at full employment.
- In addition, a weak SGD also leads to rise in prices of imported final goods and services

Evaluation

- However, if depreciation of SGD was done during periods of recession where demand is generally low, prices of imported final goods and services and raw materials may not increase substantially.
- The sub-prime crisis, which resulted in a fall in world incomes, led to a fall in the DD for our exports. If depreciating the SGD is a policy to address this, it allows us to boost our export competitiveness which results in \uparrow export revenue and at the same time, switching our expenditure on imports towards domestically produced import-substitutes. These led to a rise in domestic production and created employment since labour is a derived DD.
- Given that our domestic market is small with only five million people, growth and employment are contributed largely by selling our exports overseas. Depreciation does help to boost economic growth and employment substantially compared to other ways.
- As shown above, a depreciation of SGD allowed us to achieve 3 of the 4 macroeconomic goals.
- However, in the long run, a weak SGD could result in high import prices which erode our export competitiveness. This in turn leads to negative impact on BOP, growth and employment. Hence, it is at best an interim measure to revive our economy.
- Depreciation will increase Singapore's volume of exports and this may prompt foreign countries to retaliate by devaluing their currencies or impose trade barriers to discourage the exports of Singapore
- However, other countries may not retaliate if
 - they see us as a small country with limited impact on their economies

Conclusion

- Based on the above discussion, given the characteristics of Singapore and if SGD was allowed to depreciate to address recession due to fall in external demand, then we have the most to gain provided our trading partners do not retaliate. Having said this, if we do not suffer from recession, a depreciation of SGD would result in more harm than gain for our economy.

Level	Marks	Descriptors
L4	12-15	<ul style="list-style-type: none"> • Thorough analysis on the impact of a depreciation of SGD on the macroeconomic goals of Singapore with different possible outcomes • Explain whether Singapore has the most to gain from a depreciation of SGD
L3	9-11	<ul style="list-style-type: none"> • Good understanding of the impact of a depreciation of SGD on the macroeconomic goals of Singapore with different possible outcomes. • Explain whether Singapore has the most to gain from a depreciation of SGD
L2	7-8	<ul style="list-style-type: none"> • Some understanding of the impact of a depreciation of SGD on the macroeconomic goals of Singapore • Some attempts to explain whether Singapore has the most to gain from a depreciation of SGD but lacks depth in analysis, e.g. stated the criteria and provided a cursory explanation of how criteria could affect the extent of impact of depreciation of SGD on the Singapore economy

L1	1-6	<ul style="list-style-type: none"> • Smattering of points with gaps in analysis • Limited or no attempt to explain whether Singapore has the most to gain from a depreciation of SGD, e.g. merely listing the criteria
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Markers' Report

1. Question interpretation
 - a) Most students merely covered the consequences of a depreciation of SGD. There were limited attempts to discuss whether Singapore has the most to gain.
 - b) Some candidates misinterpreted the question to be a question on which policy is the most suitable and hence went on to discuss other policies which was not relevant at all.