

- 1 The oil price has fallen by more than 40%. The Organisation of Petroleum Exporting Countries (OPEC) failed to reach an agreement on production curbs. Demand is low because of weak economic activities, and a growing switch away from oil to other fuels. Source: *The Economist*, 8 December 2014

Using economic analysis, discuss how these events are likely to impact the market for oil and related markets. [25]

Suggested approach

Events given:

- OPEC failed to agree on production curb – a short term / current impact
- Weak economic activities led to low demand for oil – short term / current impact
- Oil price fallen by more than 40% (should be an outcome of above two events)
- Growing switch away from oil to other fuels – short and long term impact

Only students who are familiar with the crude oil market and are able to identify the related markets should attempt this question. In fact, for all demand and supply questions, do not attempt them if you are not sure about the product. There is no room for a theoretical answer. This kind of question definitely weighs heavily on real life application and analysis.

Background knowledge:

- *OPEC member countries produce about 40 percent of the world's crude oil. Equally important to global prices, OPEC's oil exports represent about 60 percent of the total petroleum traded internationally. Because of this market share, OPEC's actions can, and do, influence international oil prices. In particular, indications of changes in crude oil production from Saudi Arabia, OPEC's largest producer, frequently affect oil prices. (from US Energy Information Analysis, EIA)*

Impact of events on oil market in the short term / current impact

- OPEC failed to agree on production curb
 - supply of crude oil will not decrease
 - neither will supply increase as price of oil is currently experiencing a decrease of more than 40%
 - world supply will remain largely unchanged – other oil exporting countries will not be able to influence world supply
 - supply of oil is price inelastic in demand as storage is costly and production cannot be easily increased or reduced as the rate of oil extracted from the oil wells cannot be controlled easily
 - supply curve remains at SS_0
- Weak economic activities led to low demand for oil
 - demand for oil is derived from demand for all goods and services as power and energy is needed to the produce of all goods and services
 - globalization has led to the economies to be interconnected and dependent on each other through trade and investment flows
 - weak economic activities in major economies like US, China and Eurozone will have ripple effect on other economies leading to weak global demand
 - the low of demand for goods and services will mean a low and falling demand for oil as most firms all over the world cut down on production
 - demand curve shifts right from DD_0 to DD_1
- Growing switch away from oil to other fuels
 - this happens mainly in the transportation industry, ground and air and also in

- the power generation industry
- many years of past and current research and development have led to the availability of alternative fuels for the above purposes, especially in the area of ground transportation and power generation
- demand for oil is likely to decrease as consumers switch to alternative fuels to power their vehicles and firms switch to cleaner forms of energy e.g. wind, gas, hydro and nuclear power
- contribute to shifting demand to DD_1
- conclude the above discussion using a demand and supply diagram to explain a situation of surplus at original price leading to a significant downward pressure on price (due to a price inelastic supply – unable to cut back sufficiently on quantity supplied as price falls) and a lower equilibrium quantity.
- a lower price and a lower quantity sold will mean a lower revenue for oil exporting countries but for buyers like oil refining firms, their expenditure on oil inputs will thus be lower

Impact of switch away from oil to other fuels on oil market in the long term

- extend discussion into the long term
- environmental degradation and global efforts in sustainable economic development led to Kyoto Protocol and C40 (C40 Cities Climate Leadership Group)
- governments in the world are committed to switching away from oil to other fuels
- continued efforts in R&D in search of cleaner alternative fuel will in future allow for less dependence and less use of oil for power and energy
- highly likely that such an event will contribute towards slowing the rate of increase in demand for oil when world demand for oil increases when economies get back on their long term economic growth path
- will have the impact of reducing rate of price increase and slow down the increase in oil consumption too

Markets related to oil market

Background knowledge:

Oil refineries buy crude oil to refine them into various petroleum products.

Petroleum products include transportation fuels, fuel oils for heating and electricity generation, asphalt and road oil, and the feedstocks used to make chemicals, plastics, and synthetic materials found in nearly everything we use today. About 74% of the 6.89 billion barrels of petroleum that we used in 2013 were gasoline (petrol), heating oil/diesel fuel, and jet fuel.

Petroleum products and their relative share of total U.S. petroleum consumption in 2013:

- Gasoline (petrol) 46%
- Heating Oil/Diesel Fuel 20%
- Jet Fuel (Kerosene) 8%
- Propane/Propylene 7%
- NGL & LRG¹ 6%
- Still Gas 4%
- Students need to identify at least two related markets that will allow them to apply different economic concepts and show different impacts the given events can have on different markets
- Oil being crude oil is not processed at all and so the buyers of crude oil will be oil refining firms like Shell. Oil refining firms are thus suppliers in many different petroleum product markets

- **Diesel / petrol market**

- input cost (oil price) has fallen by 40% which would mean the firm is able to supply much more at the same price, that is increase the supply of petrol and diesel
- weak economic activities will mean slow or negative economic growth where household incomes may be falling and unemployment rate increasing
- private transport is a normal good with positive income elasticity hence demands for petrol and diesel are likely to fall with a fall in income levels (make fewer journeys with private transport)
- with a decrease in demand and increase in supply of petrol and diesel, the prices for both products are likely to see a fall due to a surplus and less of both good will be purchased
- diesel, however, may have a different outcome
 - diesel cars can run on petroleum diesel or biodiesel
 - petroleum diesel may be an inferior good with negative income elasticity as clean fuel is more expensive and hence a luxury to be able to afford to be clean
 - decrease in income level will cause a switch from biodiesel to petroleum diesel, causing an increase in demand for petroleum diesel and a decrease in demand for biodiesel
 - increase in demand for petroleum diesel will be less than the increase in supply of diesel as the input cost has fallen drastically (40%) causing a significant increase in supply
 - eventually, the decrease in price of petroleum diesel will be less than the decrease in petrol prices
- suppliers are able to increase their supply significantly but they may not be willing to do so (do not want to pass the lower cost to consumers)
 - oil being a primary product is both price inelastic in demand and supply thereby causing oil price to fluctuate a great deal as historical oil price would attest to
 - suppliers need to hedge against such volatility in oil price and indirectly their cost of production
 - suppliers will not be willing to immediately increase their supply significantly but may increase supply nominally hence price of petrol will not fall as much as if no hedging was undertaken by suppliers
 - when the fall in oil price occurs over a longer period of time and suppliers feels they have sufficiently hedge against future oil price increase, only then will supply begin to increase further bringing about a larger decrease in price of petrol

- **Aviation / air travel market**

- Jet fuel used for aviation industry
- Likewise, lower oil price will lower production cost of jet fuel thereby increasing the supply of it
- Oil refiners will most likely pass the cost savings to airlines as they know that in times of oil price hike, they are able to pass higher cost to the airlines which will then pass the higher fuel cost to consumers in the form of higher fuel charge
- again, weak economic activities will cause demand for air travel to decrease (positive income elastic demand for air travel)
- significant increase in supply of air travel (follow through the discussion)

- **Jet fuel market**

- **switch away from oil to other fuels**
 - with more economies developing and global trade and investments set to

increase in the future, demand for air travel is predicted to increase significantly, fear of pollution

- aviation industry has committed themselves to a plan to reduce emission significantly through the use of greener biojet fuel
- R&D in this area has been encouraging and some airlines and airport are already using biojet fuel
- In future, demand for jet fuel will decline and if supply remains, there will be less jet fuel bought and sold at a lower price

Other markets that students may consider

- Biofuel market (for both diesel and biojet diesel)
- Power generation market i.e. market for generation of electricity
 - Power and energy generation from oil, biofuel, wind, hydro (water), solar
- Plastics market

	Descriptors	Marks
L3	<ul style="list-style-type: none"> • consistently accurate use of economic concepts • has good variety of impact of all events on at least three different markets • links between related markets are clearly established and explained • able to distinguish between long term and short term impacts 	19-21
	<ul style="list-style-type: none"> • good and accurate use of demand, supply and elasticity concepts • choice of markets allows for a discussion of different impacts of events given in the stem • impact of markets well linked to different events given • considers long term vs short term impacts 	15-18
L2	<ul style="list-style-type: none"> • Oil market and a related market • accurate use of basic demand and supply concepts • may include elasticity concepts but application of these concepts are superficial • analysis of impact on various markets lack depth (one dimensional e.g. one event on one market) • may discuss long term and short term impacts 	12-14
	<ul style="list-style-type: none"> • correctly applies basic demand and supply concepts shifts and movement along demand and supply • applied events on markets where answer as a whole is generally relevant but stated rather than explained • conceptual explanation contains some inaccuracies 	10-11
L1	<ul style="list-style-type: none"> • answers may refer to demand and supply but with poor understanding of the concepts • basic errors in demand and supply concepts especially demand and quantity demanded and supply and quantity supplied • largely superficial understanding of demand and supply concepts • does not address all events given in the stem 	5-9
	<ul style="list-style-type: none"> • Most parts of answer irrelevant or illogical in reasoning • No use of demand and supply concepts 	1-4
E2	<ul style="list-style-type: none"> • a reasoned judgement of what would be the impact on the markets 	3-4
E1	<ul style="list-style-type: none"> • a statement of what may happen without good reasoning 	1-2

- 2 (a) Explain how society can benefit from mergers of firms. [10]
- (b) Globalisation increases the level of competition among firms in a country, thereby making markets more competitive.
Discuss the extent to which merging is the best strategy for domestic firms to deal with the threat of globalization. [15]

Introduction

Society: consumers, the merged firms and other firms

Definition of Mergers: A voluntary agreement between two or more firms to combine their assets into a single firm.

Types of mergers: Horizontal and vertical mergers; lateral integration and conglomeration

Benefits of mergers: Producers of the merged firms may gain higher revenue and lower COP while consumers could benefit in the form of lower price, better and more variety products.

Body

Lower average COP and Price

Mergers of firms could lead to internal EOS benefitting both consumers and producers. When firms such as US Airways and American Airlines merged, the newly merged firm is now larger in size and could enjoy internal EOS, which is cost savings arising from the benefits of expanding the size of the firm. The new airline company could enjoy marketing EOS where the firm can promote sales through bulk advertising of the multiple flights available within the country and between countries. This allows the new merged airline company to achieve larger customer base and higher sales. Thus, the large firm's advertising costs can be spread over a larger output sold, lowering the average COP benefitting the merged firms with higher profit. Consumers will also gain from such mergers too. As the average COP is lowered, the new airline could pass on the cost saving to the consumers in the form of lower price, increasing consumer surplus. Thus mergers could benefit both consumers and producers.

Dynamic efficiency

In addition to lower average COP and pricing, society may also benefit from more variety of products. The newly merged firm will acquire existing brand loyalty and gain larger consumer base brought along by the original firms. The overall larger consumer base could bring about higher total revenue for the merged firm, which could be used to carry out research and development on better products. The larger market share of the merged firm and better product produced from R&D may prompt other firms to also conduct R&D which will further increase the variety of goods and services in the country, benefitting the consumers. This situation is present in the airline industry when we see how the merger of US Airways and American Airlines prompt many competitor airlines such as Delta Airlines and Phoenix Air reviewing their airline services to improve their services and providing attractive loyalty program for their customers.

While both producer of the merged firm and consumer may benefit from the merger, it is likely that the merged firms may gain more out of the merger. The better products from the R&D and few competitors in the market could make the demand for their products more price inelastic. Thus the merged firm with their stronger market power and price inelastic demand curve could increase their price, leading to a less than proportionate fall in quantity demanded for the products and hence an increase in total revenue and possibly profit, assuming no change in the COP. Overall we would see that the merged firm benefited from such merger. However, consumer may also benefit despite this increase in the price. With increase profit, there is also a possibility that the merged firm use it for further R&D creating better products for the consumers, benefitting the consumers at the same time.

Conclusion

Mergers could benefit the society in various ways such as lower COP and price as well as more variety of products and higher profit. However, the merged firms would likely benefit more out of the merger as they are likely to enjoy lower COP, higher TR and hence increased profit. Consumers may possibly gain from the merger but the extent of the benefits would depend on the competitiveness as well as the contestability of the market. If the merged firms exist in a highly competitive market and/or contestability, the merged firms may most likely pass on the lower COP to the consumer in the form of lower price and carry out R&D.

Level Descriptors for 2(a)		
L3	For a comprehensive and well-developed answer explaining the benefits of mergers to both the consumers and producers, supported with appropriate examples.	7 – 10
L2	For an answer that shows understanding of the benefits of mergers but is lacking in elaboration. <u>Or</u> Well-developed answer explaining the benefits of mergers to either the consumers or producers, supported with appropriate examples.	5 – 6
L1	For an answer that is too general and mere listing of benefits without elaboration. Answer contains conceptual errors.	1 – 4

- b) Globalization increases the level of competition among firms in a country, thereby making markets more competitive.

Discuss the extent to which merging is the best strategy for domestic firms to deal with the threat of globalization. [15]

Introduction

Globalization sees the development of an increasingly global economy marked especially by free trade, free flow of capital, and the tapping of cheaper foreign labour markets. With globalisation, countries see an expansion of the volume and variety of cross-border transactions of goods and services, and in international capital flows, as well as greater mobility of labour between countries. As a result of globalization, domestic firms may find themselves facing stronger competition when the country allows for a greater volume and variety of goods and services into the country and foreign firms setting up their companies in the country. In response to this stronger competition from larger foreign firms, domestic firms may consider merger as a possible strategy to deal with such competition.

Body

Argument: Merger could be the best strategy

1. Threats of competition: Lower price & better products

- Foreign firms tend to be larger and able to better exploit EOS. Thus they are capable of pricing their goods at a relatively lower price than smaller domestic firms. Furthermore, the foreign firms are likely to have larger consumer base, allowing the firms to earn higher TR and possibly higher profit. This means that those foreign firms are in a better position than those domestic firms to engage in price competition to drive out competition. Given such threat, it may be a better option for domestic firms to merge to order to better compete against foreign firms.
- Domestic firms do not just face competition in the form of lower price. They may also face competition in the form of possible better quality product brought over by the foreign firms. Foreign firms with their sufficient profit could carry out R&D which might lead to better efficient production method and products. This would make foreign products better and possibly cheaper substitutes to domestic products.

2. Benefits of mergers: Increase competitiveness (lower price & better products)

- In face of with such competition, it would be better for domestic firms to merge to so that they could better exploit EOS. In Singapore, domestic banks were encouraged to merge when Singapore government was contemplating the move to allow foreign banks into the country. And subsequently, banks such as OCBC and Keppel Bank, UOB and OUB, DBS and POSB merged before entry of foreign banks. Such merger between banks would allow the firms to better enjoy internal EOS allowing domestic banks to provide banking service at a competitive rate compare to foreign banks.

- In addition to lower cost, the merged banks will likely have larger revenue and profit allowing domestic firms to face any potential price competition by foreign firms.
- The merged firms could also utilise their larger profit for R&D and possibly produce better products and more efficient production method. This would allow domestic firms to thrive when faced with foreign competition. Hence merger would be a good strategy to adopt when face with foreign competition.

Evaluation

Given the threat of lower price and better product from the foreign firms, it could be the best approach as this method of growth allows the firms to grow large quickly given a short time. Internal growth through higher sales and profit without merger would take a longer time especially if the government has removed the barriers to trade, allowing inflow of foreign products and foreign firms. Thus mergers could be the best approach when faced by competition.

Counter Argument: May not be the best approach (Disadvantage of mergers)

- Furthermore the larger domestic firms may not be able to respond quickly to the changing needs of the consumers. Small firms may be able to provide personalised services to meet the needs of the consumers which would put them at an advantage compare to the foreign firms who may be larger and unable to response quickly to the needs of consumers. The small domestic firms can therefore target niche domestic markets to lower their PED and raise their demand to be profitable. Hence merger may not suite such firms.
- While benefits such as internal EOS and higher profit could be reaped through merger, not all merged firms will thrive and survive. Merger between firms may lead to dis-EOS where firms experience cost disadvantages from the expansion. The larger firm may be bogged down by rules, regulations and standard procedures and as such decision making is slowed down by red-tape and bureaucracy. This results in low productivity and increased costs which then prevents domestic firms from competing effectively against foreign firms. Hence mergers may not be the best strategy to deal with competition.
- Not all domestic firms should see merger as the best approach to compete against foreign firms. It would depend on the types of industry and the MES of the firms. The MES gives us a rough measure of the appropriate degree of competition in an industry. Expressing MES as a percentage of total output gives an indication of how competitive the industry could be. If the MES is small relative to industry demand, the degree of competition in that industry is likely to be high because there is room for many efficient small sized plants. Such firms should not merge and should adopt alternative approach to compete against foreign firms. Mergers would only cause them to incur diseconomies of scale.
- In additional to these potential problems, the merged firms will be holding larger market share, possibly becoming a dominant firm or even a monopoly in the market. Such large firm may be perceived as a potential threat to the welfare of the society and could be forced to adhere to stricter control and scrutinization of the government and/or anti-competition bodies. Such stricter control may prevent the merged firms from focusing their attention on increasing their competitiveness against the foreign competitors.

5. Other strateies

Internal growth – price and non-price competition

- Since not all firms should merge, such firms should consider alternative approach internal growth through higher sales and lower cost. Firms can increase R&D on cost efficient production process and better products. Alternatively, firms could also advertise their products increasing their brand loyalty and capturing new markets. On one hand, it would increase the quantity and sales of the product, increasing the firms' revenue.
- On the other hand, it would make the demand for the firms' products more price inelastic and cross elastic as the foreign products would be perceived as a weaker substitutes to domestic

products. This would reduce the possibility of consumers switching to foreign demand when foreign firms reduce the price of their products. Hence when prices of foreign products decrease, quantity demanded for domestic goods will reduce by less than proportionate and this prevents the huge loss of revenue and hence profit. This will allow the domestic firms to survive against foreign firms without having to merge.

Conclusion

While domestic firms can grow internally, it will definitely take time for it grow larger and to carry out R&D. This would have been possible if there is additional help or intervention by the government. Subsidies could be given to firms to help increase their competitiveness. These alternative approaches of R&D and advertisement are possible strategies which firms can turn to instead of merger.

The success and benefits from the merger also depends on the type of industry and type of merger. For example, firm's that are involved in horizontal mergers are more likely to gain economies of scale as opposed to those involved in lateral mergers.

	Descriptors	Marks
L3	Accurate, well-developed and balanced analysis which considers these: <ul style="list-style-type: none"> ▪ The threats pose to domestic firms due to globalization ▪ Mergers allow domestic firms to better deal with the threats of globalization ▪ Alternative strategies could be adopted to deal with the threats of globalization ▪ Able to recognize that mergers may and may not be the best strategy. 	9-11
L2	<ul style="list-style-type: none"> ▪ Balanced but primarily undeveloped arguments OR <ul style="list-style-type: none"> ▪ Developed analysis but one-sided 	6-8
L1	<ul style="list-style-type: none"> ▪ Primarily descriptive, not using economic concepts/terms in reasoning ▪ Limited explanation and elaboration. ▪ Major errors although there is relevance to question 	3-5
	<ul style="list-style-type: none"> ▪ Most parts irrelevant to question 	1-2
E2	Well-reasoned and supported judgement, using valid factors/criteria to assess whether merger is the best approach.	3-4
E1	<ul style="list-style-type: none"> • Lack of clarity in focus of evaluation • Making some judgement, but mainly not supported 	1-2

- 3 The Gini coefficient decreased from 0.478 in 2012 to 0.463 in 2013. After adjusting for Government transfers and taxes, the Gini coefficient in 2013 fell from 0.463 to 0.412, reflecting the redistributive effect of Government transfers.

Source: Singapore Department of Statistics, 18 February 2014

- (a) Explain how labour immobility and market dominance may lead to income inequality. [10]
- (b) Discuss the economic role of the Singapore government in addressing income inequality. [15]

Define the concepts of labour immobility, market dominance and income inequality.

- Labour immobility:
Movements of factors of production, in this case, labour movement are limited due to lack of skills to enter different industries (occupational labour immobility) or hindered by geographical barriers (geographical immobility) → labour not efficiently allocated across industries or country.
- Market dominance:
Due to lack of competition, firms have the ability to charge higher price and reduce output → under-allocation of resources.
- Income inequality:
Refers to the extent to which income is distributed in an uneven manner among a population (illustrating the gap between the rich and poor). Unequal distribution of income and wealth adversely affect the ability of lower income group to consume goods while high income group is able to pay and obtain the goods → market failed to achieve equitable distribution of goods → Gini coefficient can be used to assess disparity in income inequality.

Explain how labour immobility lead to income inequality

Occupational immobility

- **Rapid technological advancement** → gives rise to jobs requiring new skills while making other jobs obsolete → rise in the demand for skilled labour (as shown in Figure 1) and fall in the demand for the unskilled labour (as shown in Figure 2). E.g. Singapore economy transited from low-value adding manufacturing to an economy that demands for knowledge, innovation and service-based economy.

Labours face difficulty in seeking employment opportunities in other industries when **economy undergoes structural changes** → skills that labour possesses are not needed in growing industries → mismatch between skills required from unemployed labour and skills required by industries/employers → structural unemployment.

Wages like any other product markets are determined by the forces of demand and supply.

Wages of skilled labour tend to be higher than unskilled labour → because demand for skilled labour from higher-value adding industry increases more rapidly (DD for skilled labour shift right in Figure 1) while the **demand for the low-skilled labour falls** (DD for unskilled labour shift left in Figure 2).

Figure 1

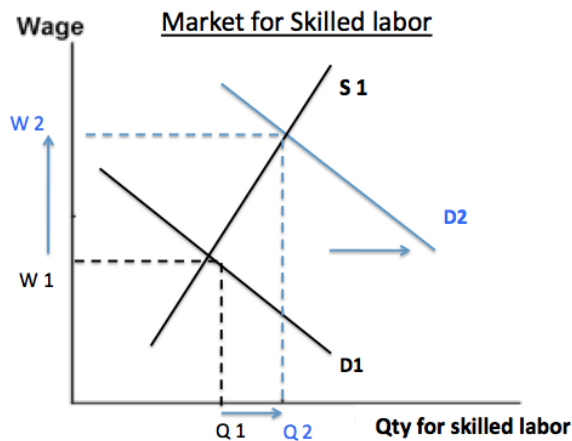
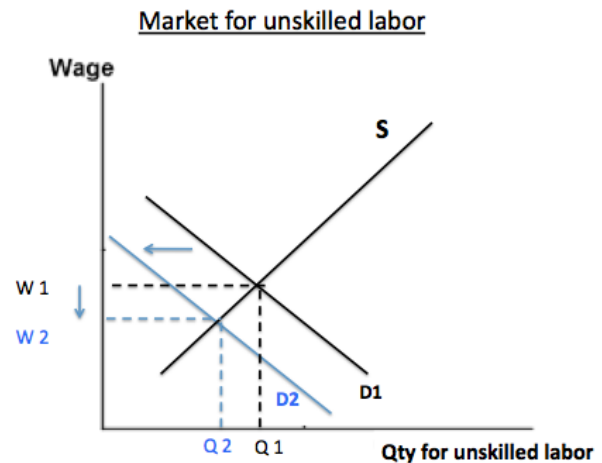


Figure 2



- **Wage gap widen further given that the supply of skilled labour tend to be more price inelastic** as unskilled labour unable to take on higher demand jobs in higher-value added industries. Given the increase in DD for skilled labour, lead to a more than proportionate increase in wages (vice versa for the low-skilled labour market where the supply of unskilled labour tend to be more price elastic given a fall in the demand for unskilled labour).

[Without the explanation of PES, answer can still attain L3]

Geographical immobility

- Workers are **not willing or able to move from area to another** → due to language & cultural barriers, financial difficulty, migration controls by government or strong family ties. There are still countries such as India and China etc. where geographical immobility remains evident.

E.g. in India, the attachment among the native locale remain deep, the caste system in India can impede movement of people, thus, people tend to avoid moving too far from the family → income gap still exist between rural and urbanised areas, and may even widen as wages of labour in urbanised areas tend to rise more rapidly than those in rural areas that focuses mainly on lower-paid jobs such as farming.

Explain how market dominance lead to income inequality

- Market dominated by large firms, in the case of monopoly has high BTE which prevent entry of firms → since there is no close substitutes → firm is able to price its goods highly given its demand is price inelastic → thus able to **enjoy supernormal profit even in the long run**. (Represented by the shaded area in Figure 3). **This widens the income gap between shareholders or asset/ firms owners and the wage earners.**
- Income disparity tends to also widen **among producers of different market structure**. **Firm owners of monopoly would be able to earn supernormal profit** (represented by the shaded area in Figure 3) **in the long run while monopolistic competitive (MC) firm owners face with lower BTE tend to earn normal profits** (as shown in Figure 3 where the shaded region representing the supernormal profit was eroded as MC firms are only able to price the goods at P_{MC} which coincide with cost, C_{MC}). Thus at new equilibrium output and price, MC firm earns normal profit given that price per unit = cost per unit). Thus, with more markets that have dominant firms, income inequality may worsen.

(b) Discuss the economic role of the Singapore government in addressing income inequality. [15]

Introduction:

Globalization and technological advancements that enabled rapid economic growth → have led to many changes in Singapore's labour market. While Singapore on average have gain from Singapore economic growth, the low-income group may not have enjoyed the fair share of the economic pie. Singapore's Gini coefficient currently hovering at 0.463 to 0.412 (between 2012 to 2013) → suggesting Singapore has relatively high income inequality issues. Thus, this calls for government to take on the role in addressing income inequality issues. The degree of government intervention could range from **direct intervention**, **joint provider** or even **regulator** in ensuring resources are allocated and redistributed more equitably. This can be done by:

1. **Improving labour mobility** (raise labour productivity by encouraging retraining & education as well as maintain a healthy workforce),
2. **Reducing market dominance** (legislation to raise market competitiveness)
3. **Increasing availability of essential goods (such as merit goods)** to everyone, especially to the lower-income households
4. Other domestic measures include having a more **progressive tax system**

Body Paragraph: Explain and evaluate how govt. measures can tackle income inequality in Singapore

1. Improving labour mobility

Rapid technological advancement and growing trend of urbanisation globally → lead to some skills being obsoleted more easily (occupational immobility) and Singaporeans labour increasingly shunning away from some industries. To improve labour mobility, government can:

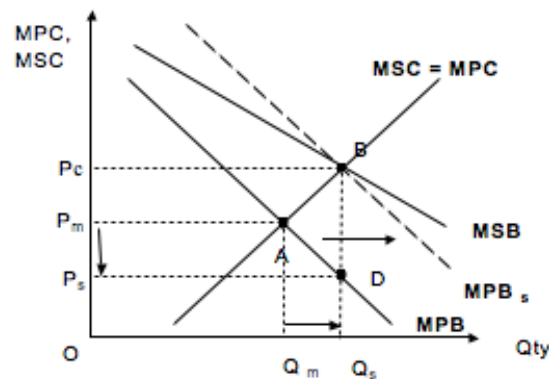
- a) Subsidy re-training & education to tighten income gap between skilled & unskilled labour.
- b) Encouraging firms to redesign jobs to attract more Singaporeans to enter some industries

a) Subsidy re-training & education:

- To **help low-skilled labours equip with required skills to transit into the sun-rise or growth industries** → subsidise retraining & education programmes to increase affordability and incentivises labours to take-up these programmes (price lowered from P_m to P_s, in Figure 4) → the improvement in the labour productivity enable low-skilled labour to demand for higher wages (greater occupational mobility) → reduce wage - gap between low-skilled and high-skilled labour
- **Role of the government: an enabler by directly providing subsidies to encourage and spearhead the training programmes in getting labours to take up these training programmes**
 - E.g.: Workforce Development Agency (WDA) provides programme such as Workfare Training Support (WTS) scheme for low-wage workers with enhanced support of up to 95% of course fee funding
OR Continuing Education and Training (CET) to enable acquiring of new skills by raising labour employability in emerging and growth industries such as healthcare, tourism and manufacturing sectors; Chemicals and Biomedical, Aerospace and Marine & Offshore.

- Evaluation: However, the effectiveness of these measures is subjected to the receptiveness of labours towards education and retraining. In Singapore, retraining programmes is likely to be well-received given
 - Positive attitude towards lifelong learning among many Singaporeans → the culture of lifelong learning developed across the years through measures such as Lifelong Endowment fund set up to encourage continuous learning
 - An educational system that provides up-to-date training materials to narrow gap between skills required in workforce and skills taught in educational institutions

Figure 4



b) Subsidy to firms in redesigning jobs to attract more Singaporeans to enter some industries

- Singaporeans tend to shun away from harsher working environments jobs such as construction, marine and waste management industries, cleaning industry etc. → resulting in many of these industries having little local supply of labour.
- **Role of government: an enabler by directly providing financial support to assist firms in redesigning work processes and mechanisation as well as equipping labour with the skills to fit into redesigned jobs (e.g. the use of machineries)** → this may enable previously deemed “unpopular” sectors to be restructured to raise labour productivity → labour would be able to work more efficiently in such redesigned work environment and command for higher wages → able to attract more locals to take up these jobs with higher wages and a more professional image.
 - E.g.: WorkPro, a one-stop scheme to help employers adopt progressive workplace age management practices, facilitate job redesign and improve workplace practices, as well as to encourage employers to recruit and retain back-to-work locals and mature workers to meet their manpower needs.
 - OR** Enhanced Productivity and Innovation Credit Scheme (PIC) setting aside \$2 billion to the National Productivity Fund (NPF) for more targeted support to industries in restructuring → increase competitiveness of firms
- **Evaluate:** However, to effectively redesign jobs, it **requires the cooperation of firms**. It may not be easy to convince firms to do so as firms may be concern about business disrupting/ rising cost of production in redesigning workplace and production mechanism, in turns hurts profit margins.
Hence, important for such measures to be **widely publicised among firms** in raising awareness of measures available and should be **well-thought out** to convince firms about the long- term benefits; enhancement in firm’s competitive

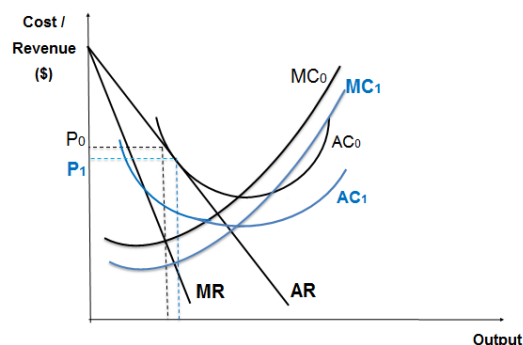
edge and profit margins.

2. Reduces market dominance to prevent consumers from being exploited

Legislation:

- **Role of government: the regulator by having legislations such as Competition Law to promote efficient functioning of Singapore's markets** → by **enhancing the competitiveness of the economy** and encouraging privatisation to raise degree of competition in market → this can **prevent firms from exploiting consumers by setting high prices and even seek ways to be more cost-efficient** → cost-savings enjoyed can be passed on to consumers in terms of lower prices → ensure goods is more affordability for consumers especially the lower-income households → improve income inequality. Thus, it is important that government to maintain close monitoring and ensure legislations are enforced.

Figure 5



- E.g. Public bus services in Singapore has been structured to have two major operators (duopoly), SBS Transit Ltd (SBST) and SMRT Buses Ltd (SMRTB) → encourage greater competition in public bus services market → ensures companies compete to provide consumers with affordable and quality bus ride services. Apart from the use of legislation, government also monitor firms' behaviour closely by having independent regulatory body such as Public Transport Council (PTC) to ensure high quality bus services and affordability of fares. Especially since public transport is an essential mode of transport for many, including the lower-income households.
- **Evaluate:** However, in the case of **natural monopolist**, it **would not be appropriate to encourage the entry of more firms** → one firm is sufficient to supply for the entire market's demand instead of having two or more firms in the markets which would like to little EOS enjoyed. This would result in consumers paying higher prices. Thus, in the case of natural monopolist, where firm's production is usually highly capital-intensive with high cost of production, **economies of scale** are very significant such that minimum efficient scale is not reached until firm has become very large in relation to the meeting the total demand of the market. These are often essentials industries such as utilities → e.g. Public Utilities Board (PUB) in Singapore that coordinates the supply of electricity, piped gas, and water. Because there is the potential to exploit monopoly power, governments tend to **nationalise** or heavily **regulate** them.

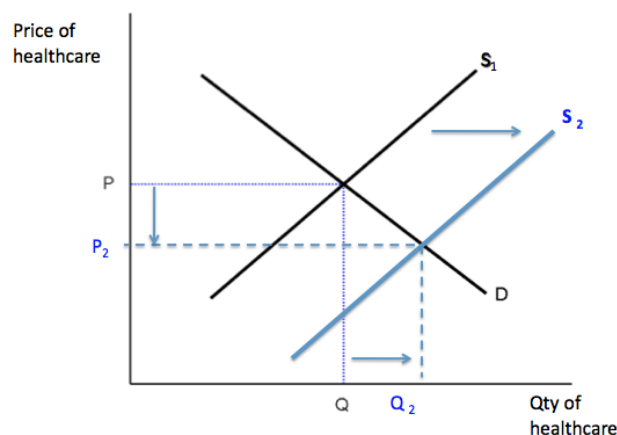
3. Availability of essential goods to everyone (especially the lower-income

households)

Subsidising healthcare services (merit goods)

Role of government: joint provider of healthcare services by providing subsidised healthcare services → leads to lower price of healthcare services that consumers have to pay (P_m to P_s , in Figure 4) thus, encourage higher consumption level as MPB curve shifts to the right to MPB_s (demand increases) → market-optimal output now coincides with the social-optimal output → more consumers can afford healthcare services after subsidy given. [OR Figure 6, SS shift to right as government provides subsidy to hospitals and polyclinics]. With greater affordability of healthcare services (especially to the lower-income households)

Figure 6



Social supports

- **Role of government: directly provision of financial assistance to lower-wage and low-skilled labours** → by strengthening social safety net but it is **important for government to ensure it does not results in disincentive to search for jobs and strain in government budget.**
 - E.g.: In Singapore, the Workfare Income Supplement (WIS) programme is structured such that labour must demonstrate efforts to upgrade their skills, seek employment and stay employed in order to be eligible for the programme → the aim is to enable labour raise their employability and thus the ability to demand for higher wages
 - OR** Cash-transfer: direct cash payments such as GST offset packages – GST cash vouchers, seniors' bonus, medisave top-up, utility rebates for lower and middle income Singaporean households. **OR** Welfare programs: medifund, schools financial assistance for low-income households
- **Evaluation:**
 - Possibility of government failure as there may be over/under estimation of the social supports provided. Nevertheless, it is still essential that such safety net are made available to help to low-income households
 - To ensure government's spending to help the lower-wage and low-skilled labour's needs, instead of just providing cash pay-out, Singapore government also explore the use of food vouchers (in-kind transfers) → this enables government to have **greater direct control of the policy outcome**, in this case, ensuring low-income households spend the government's assistance on food

items.

- It is important to ensure that social support does **not provide disincentive for labour to work**. These **supports must be short-term measures** as it is not sustainable for government to constantly give out cash pay-outs. Hence, it should at best be provided as a temporary relief for low-income households' in-need of government assistance. Ultimately, a **more sustainable and long term measure would still be for the low-income and low-skilled individuals to improve on their employability through retraining**.

4. Others domestic measures to address income inequality:

Progressive tax system to enable redistributing of wealth

- o Higher income earners pay a proportionately higher tax → **tax revenue collected enables government to finance various measures** such as access to subsidised housing, a good education and high quality health care, financing of training programmes **for everyone (inclusive of lower-income households) to progress up the social ladder** → address income inequality and enable more lower-income households to maintain a decent standard of living
 - E.g. Singapore adopts a progressive tax system → highest personal income tax rate at 22% and the bottom-end labour earning less than \$20,000 per annum would be exempted from the paying of personal income tax.
- o **Evaluation:** Excessive government spending on redistributive programmes can increase pressure to raise income tax rate for middle and/or higher-income, leading to disincentive to work. It is important to avoid overly raising personal income tax rate → may lead to brain drain issue where professionals migrate abroad to countries with lower cost-of living and lower tax rates. *This was the case in UK (where tax rates are among the highest in the world); business leaders blamed high rates of income tax as the reason for the rise in professionals leaving Britain.* Hence, it is important that Singapore learn from others and past lessons, especially since Singapore have to rely heavily on skilled-labour in the higher-value-adding industries for its economic growth.

Conclusion:

Government needs to recognise that **there is a limit to how much direct control government has in creating employment for the unskilled labour (and even the skilled labour)**. It can play the role of being a **direct provider, joint provider** or even **regulator** in ensuring resources are allocated more equitably to address income inequality. But at best, government could only *hire people to do government jobs and provide assistance*, government is unable to directly influence the increase in the private sector job creation in the near or medium term and provide financial assistance in the long term.

Ultimately, it **requires the efforts of not only the government but also the firms and labours to address income inequality**. Hence, it is utmost important that government: encourage firms to play their parts to retain their workers and redesign their jobs.

- o In the case of Singapore, there are already presences of many measures that have been in placed to address income inequality. Perhaps, it is **not just about designing measures but awareness of existing measures need to be raised** → to increase the take-up rates by the firms and labours (i.e. reducing imperfect information)

Marking Scheme:

Knowledge, Application, Understanding, Analysis		
L3	<ul style="list-style-type: none"> Well-explained (of at least 2 measures) to illustrate how income inequality can be improved. (<i>students should be encouraged to give 3 measures</i>) Answer should make explicit reference to the roles of government. Well-explained examples provided. Answers able to contextualise to Singapore economy. 	9-11
L2	<ul style="list-style-type: none"> Under-developed explanation in illustrating how measures can improve income inequality. Answer made some weak attempt to consider the roles of government. Some conceptual errors in explanation but economic concepts used are appropriate. Some examples provided but not well-explained. Some attempt to contextualise but under-developed. 	6-8
L1	<ul style="list-style-type: none"> Little / no usage of economic concepts. Answer is descriptive with major conceptual errors. No examples given. Little or no contextualisation. 	1-5
E2	<ul style="list-style-type: none"> Judgment with clear justification <i>For instance, showing understanding that while government can improve the issue of income inequality, it would be more effective if firms and individuals recognise that they have a role to play in addressing the issue of income inequality.</i> 	3-4
E1	<ul style="list-style-type: none"> Judgement with unclear justification 	1-2

4 (a) Explain the possible causes of an increase in household consumption. [10]

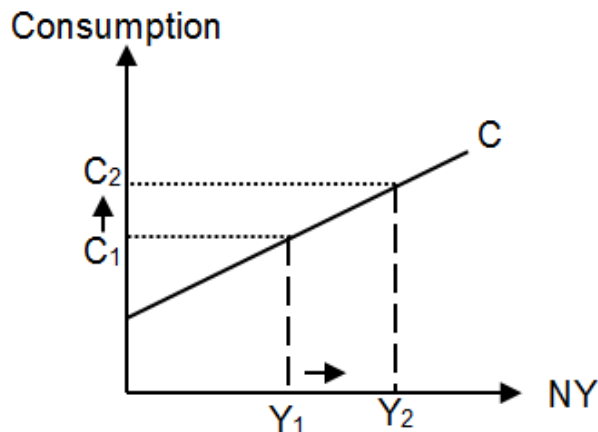
(b) Assess the view that raising household consumption is more effective than encouraging exports in achieving economic growth. [15]

a) Explain the possible causes of an increase in household consumption. [10]

Introduction

Household consumption refers to expenditure by households on goods and services. Consumption can be induced by income changes (induced consumption) or influenced by non-income factors (autonomous consumption).

A change in any one of the determinants will lead to a change in consumption expenditure; reflected in a pivoting of C and AE (if induced consumption changes) or a shift of C and AE (if autonomous consumption changes, or both a pivot and shift if both autonomous and induced consumption were to change. Consumption depends on the **willingness** and **ability** of the households to consume. And there are various factors which determine the willingness and ability of households to consume.



Body Paragraph

Income factor (price factor):

Change in national income will induce a change in consumption.

- The Singapore economy has been enjoying a healthy average annual growth of 6% since 2000.
- As a result, the average income in Singapore has risen. The higher income would mean higher purchasing power for Singaporeans, thus **greater ability** to consume more goods and services, or to spend more on luxury goods and big-ticket items in addition to necessities.
- All these would result in a higher level of consumption expenditure.
- This is represented by a movement along the C function from C1 to C2 when income increases from Y1 to Y2.

Hence a change in level of national income will change the household expenditure in Singapore.

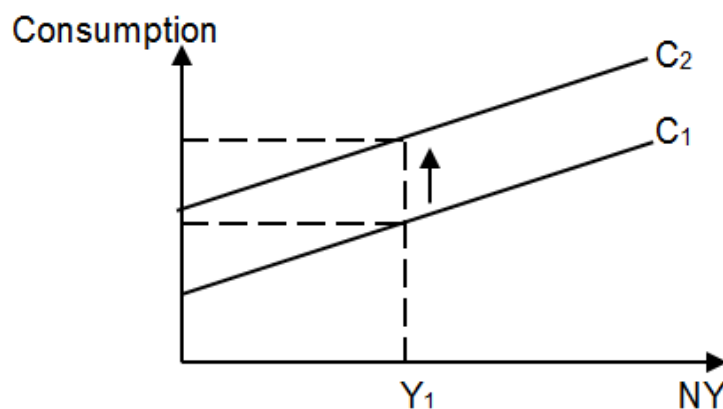
Wealth (non-price factor):

When households spend, they would consider the level of income earned as well as the amount of wealth available. Quite a number of households possess wealth such as assets, both physical (e.g. houses, cars, art pieces, etc.) and financial (e.g. shares, bonds, etc.).

Thus changes in the wealth of the household could also influence the ability of households to consume.

- A change in the value of assets will affect the purchasing power of households thus affecting their **ability to consume**.
- An increase in the value of financial assets can result from a global boom which improves the confidence in the economy thus prices of shares of companies will increase. With the increase in share prices, value of financial assets will increase leading to higher purchasing power. Individuals will thus increase consumption of goods and services.
- On the other hand, during the 2008 Global Financial Crisis, many households in Singapore find their wealth shrinking due to the falling values and returns of shares and bonds while some lost all their financial investment in risky shares and bonds. The fall in wealth may force households to tighten their belt, reducing their autonomous consumption.

Thus a change in wealth of households will shift the C function.



Expectation of future income (non-price factor):

While a change in current NY will induce a change in consumption, **consumers' expectation** about the future economic outlook and performance will affect their **willingness and ability** to consume as well.

- If future economic conditions are expected to be good, that is employment and national income are expected to improve, households will expect to maintain their current income or even see an increase in income and thus their **ability** to consume, thus consumption spending will increase.
- This increase in consumption spending is represented by an upward shift of the C function.
- Singapore's economic growth for 2015 is estimated to be about 3.1 per cent and it is expected to be a bumpy year ahead for Singapore's small and trade-dependent economy due to the tight labour market and slow global growth. Such uncertain economic outlook would prompt household to be more cautious in their spending.
- Prolonged recession → pessimistic outlook of the economy → less willing to spend → may cause a fall in MPC
- While on the other hand, when economic recovery is insight → more optimistic outlook → more willing to spend → MPC may ↑

Hence expectation of future economic performance can determine the household expenditure in Singapore.

Interest rate & availability of credit facilities (non-price factor):

Household consumption is limited by their income and wealth but banks allow households to consume beyond the limit by offering low interest rates. While first two factors play a large role in determining consumption, households' ability to consume is also influenced by external factors such as interest rate and availability of credit.

- Low interest rates encourage Singaporean to spend on luxury goods and big-ticket items.
- Low interest rates discourage saving by decreasing the returns from saving and encourage spending now as the cost of borrowing is low.
- With the low interest rates, households would be keener to take up a loan for big ticket items like housing and cars as the opportunity cost of borrowing is lower.
- In addition to the low interest rates, banks lower the minimum income requirement to own a credit card and provide many benefits, such as rebates and loyalty points, for the use of the cards. Such change has encouraged more households to take the offer of a credit card and spend, increasing consumption.
- Some retailers are making it easier for households to access their goods by providing zero or low interest rate instalment when they purchase goods from them.
- For example furniture retailer like Courts offer a Flexi Zero Plan and Flexi Lite Plan which allow household to pay for their goods in instalment at zero interest rates and 10.9% p.a. respectively. Such actions will encourage household to consume.

Hence, the low interest rates coupled with availability of credit will increase the autonomous consumption, shifting the C function upward from C1 to C2

Government intervention (non-price factor):

External factor such as government intervention plays a role in determining household consumption.

- Government intervention may come in different forms such as reduction in the income tax, redistributive measures and provision of better social security.
- In the 2015 Singapore Budget, the government has announced a one-off income tax rebate of 50% capped at \$1000. Such reduction in personal income taxes will increase households' disposable income, leading to higher purchasing power and thus a higher level of consumption.
- A redistribution of income from the rich to the poor through transfer payments will increase consumption in the country as a whole.
- In 2015 budget, Singapore government announced an increase of \$50 cash for the GST Vouchers for both the low and middle income households while a higher income tax rate for the top 20% of income earners.
- Lower income group generally has higher MPC than higher income group
- Therefore, tax on higher income \rightarrow their disposable $Y \downarrow \rightarrow \downarrow C$ by a smaller extent due to lower MPC.
- And the transfer payments to lower income group \rightarrow their disposable income $\uparrow \rightarrow \uparrow C$ by a larger extent due to higher MPC. Hence the country's overall $C \uparrow$
- Improvement in social security: 2015 Singapore Government Budget
 - Silver Support Scheme: Singapore government will be providing income supplement for Singaporean age 65 & above. These Singaporean will obtain a cash supplement of \$300 to \$750 every three month
 - Full fee waiver for examinations

- Higher healthcare subsidies for healthcare
- Such improvement in social safety net provide more confidence among the households
→ ↑consumption & MPC

Given such intervention, government may be able to influence the ability and willing of households to spend, determining the level of household expenditures in the country.

	Level Descriptors for 4(a)	Marks
L3	For a comprehensive and well-developed answer explaining the causes of an increase in consumption, both income factor and non-income factors, supported with appropriate examples.	7 – 10
L2	For an answer that shows understanding of the causes of an increase in consumption but is lacking in elaboration.	5 – 6
L1	For an answer that is too general and mere listing of factors without elaboration. Answer contains conceptual errors.	1 – 4

b) Assess the view that raising household consumption is more effective than encouraging exports in achieving economic growth.

Introduction

- Unpack conceptual terms in the question
 - Definition of household consumption: expenditure on goods and services by households, inclusive of import content in the expenditure.
 - Components in consumption: (1) autonomous consumption (rise in consumption due non-income factors) and (2) induced components (rise in consumption due to rising national income).
- Actual economic growth: rate of increase in real GDP. Economic growth in a country is due to growth in aggregate demand (AD) or aggregate AE
- Raising household consumption and encouraging exports are possible approaches to increase AD (or AE) and stimulating EG.

Body Paragraph

Raising consumption

- Growing through raising consumption refers to growth strategy that is domestic-led, possibly through continuous expansionary fiscal and monetary policies which encourage household spending on domestic goods
- Increasing households' consumption to achieving economic growth is indicated by an increase in autonomous and induced C

Encouraging export

- Government could encourage exports to foreign markets possibly through various policies such devaluation of exchange rates, signing of free trade agreement, domestic subsidies and even supply-side policies to make export more competitive.
- Encouraging exports would see exports becoming a larger proportion of GDP

Thesis: Raising household consumption may be more effective than encouraging exports in achieving economic growth

Argument 1: Raising household consumption will **reduce vulnerability** of the economy to external shocks unlike raising exports to foreign countries.

- Raising consumption on domestic consumption could reduce vulnerability of the economy to external shocks such as the Global Recession in 2008-09.
- Thus should there be an external shock, the impact on domestic growth would be reduced as the domestic consumption is able to support EG - the extent of fall in national income could be minimal due to the high APC in the country.
- However, by encouraging export, the export will constitute a larger proportion of GDP. Thus economic growth is largely dependent on external demand and performance. When there is strong external demand, export and AD will increase, increasing NY and hence EG in the country. However, when there is an external shock such as Global Recession in 2008-09, fall in external demand will lead to a **significant** fall in AD and NY leading to recession in the country. Thus countries who are raising export to achieve EG in the country are susceptible to external shocks.
- Given the danger of relying on exports for EG, countries should consider turning to raising domestic C since raising consumption could reduce the vulnerability of the country to external shock. Hence raising household consumption is more effective than encouraging exports in achieving economic growth.

Argument 2: Raising household consumption will increase the effectiveness of domestic management policies making it a better approach than encouraging export to achieve EG

- The size of multiplier depends on size of MPC.
- In order to raise consumption level in the country, government may need to implement policies that will raise the purchasing power of households so that households could consume. Government could raise the minimum wage, reduce tax and raise social security to encourage householders to consume more and save less. Such measures would raise the MPC while reducing the MPS and MPT. A larger MPC would mean that household would spend a larger proportion of the **increase** in income for consumption.
- Conversely, a smaller MPT and MPS would mean that household would save and be taxed a smaller proportion of the **increase** in income. This smaller MPS and MPT would mean that at each time the leakage out of the circular flow of income will be smaller.
- The larger multiplier will make the domestic policies such as fiscal and interest rate policies more effective as a counter cyclical approach to reducing volatility in economic growth.
- Thus during recession, when government implement expansionary domestic demand management policies, AD will increase causing an increase in NY by multiple time. However, countries like USA and Indonesia with a larger multiplier would see their NY increase by larger extent compare to countries such as Singapore with small multiplier.
- Unlike raising consumption, increasing exports to foreign countries will not increase the effectiveness of domestic management policies. By encouraging exports, countries like Japan and Singapore would find that expansionary domestic demand management policies have no impact on AD since exports constitute a larger proportion of the GDP than domestic C and I.

- Given the limitation of encouraging exports, countries would be better off at raising household consumption which could increase the effectiveness of domestic management policies and hence a better approach to achieve EG.

Anti-thesis: Raising household consumption may not be more effective than encouraging exports in achieving economic growth

Counter Argument: Effectiveness of raising consumption is limited by the small population size which means that encouraging exports would be a more effective approach to achieving economic growth.

- While there are definitely benefits of raising consumption to achieving EG, it may not be feasible for all countries especially when some countries like Singapore who has a small population. The smaller population size would mean that consumption as a proportion of GDP would still remain relatively small despite effort to increase it and hence limit the effectiveness of raising consumption to achieve EG.
- Whereas exporting goods and services to the rest of the world would see small countries selling their goods and services to a larger market compare to the domestic market. The larger foreign market would mean that encouraging export would see a larger increase in AD and hence NY compare to increasing C.
- Hence encouraging exports would be a more effective approach to achieving EG.

Counter Argument: Effectiveness of raising consumption is limited by the high import content which limits the effectiveness of increasing consumption. Hence encouraging exports would be a more effective approach to achieving economic growth.

- If the countries have limited resources and depend on imports, raising consumption may increase leakages as households may increase consumption of largely imported goods instead. Hence raising consumption may not obtain the desirable results.
- Given this context, encouraging export would be more effective in increase AD to achieve higher NY.

Conclusion

- Whether raising consumption or increasing export is more effective in achieving EG depends on the nature of the economy.
- For small economies like Singapore, Ireland and Japan, raising export may be a better approach than increasing consumption. And the aging population in Singapore and Japan make raising consumption even more difficult. Hence for such countries with small domestic markets and aging population, encouraging exports may be a more feasible and effective approach.
- Larger countries such as USA may have the options to choose which approach is better at encouraging EG as they could depend on their large population size as well as foreign demand. But given the nature of large economies like USA, it would be more feasible to increase their consumption to achieve EG as it would reduce the vulnerability to external shocks.

	Descriptors	Marks
L3	<ul style="list-style-type: none"> ▪ Balanced argument. ▪ Compares both approaches and provides a conclusion on whether and how increasing consumption is more/less appropriate than increasing exports in achieving growth. ▪ Conceptually sound and well-elaborated explanation using economic concepts/terms. 	9-11
L2	<ul style="list-style-type: none"> • Conceptually accurate and elaborated but non-comparative: only explaining how both policies work on achieving economic growth • not attempting to consider whether and how increasing consumption is more appropriate than increasing exports. 	6-8
L1	<ul style="list-style-type: none"> ▪ Primarily descriptive, not using economic concepts/terms in reasoning ▪ Limited explanation and elaboration. ▪ Major errors although there is relevance to question 	3-5
	<ul style="list-style-type: none"> ▪ Most parts irrelevant to question 	1-2
E2	<p>Uses criterion/criteria for comparative evaluation and giving a considered judgment at closure.</p> <p>Example: Whether raising consumption or encouraging export is more effective depends on the countries. Larger economies with potential large domestic consumption may have more options to choose from compared to small economies.</p>	3-4
E1	<ul style="list-style-type: none"> • Evaluation of the two approaches, without criterion/criteria. Leaves two sides of arguments suspended without considered judgement at the end. • Evaluation is not justified or supported with analysis. 	1-2

- 5 As our economy develops and undergoes major demographic shifts, sustaining high productivity growth will become harder.**

Source: Singapore Population White Paper, January 2013

- (a) Explain the consequences of ageing population and falling productivity growth on the Singapore economy. [10]**
- (b) In view of these problems, assess the relevance of supply-side policy as Singapore continues to face the problems of ageing population and falling productivity growth. [15]**

a). Explain the consequences of ageing population and falling productivity growth on the Singapore economy. (10m)

Introduction: Explain nature of Singapore economy; accounting for its' ageing population and falling productivity growth.

Ageing population is a phenomenon where the median age of a country or region rises. The biggest challenge for Singapore today is to support its ageing population and sustain economic growth through increases in productivity.

Reasons for ageing population and falling productivity growth:

Ageing population:

Declining birth rates due to rising singlehood, later marriages, higher education opportunities which also delayed entry into the workforce and family formation.

- Increase in Singapore's life expectancy from 72 years in 1980 to 82 years in 2010 → leading to larger proportion of elderly.

Falling Productivity:

- Ageing population means a smaller proportion of population is in the labour force and increasingly less energetic workforce, causing falling productivity growth.
- Older workers may find it more difficult to learn new skills and may not be very receptive to changes in technology, reducing efficiency in production
- Past policy of fuelling growth through importing large number of cheap, low skilled foreign workers also results in lower productivity.

Development:

Explain consequences of ageing population and falling productivity growth on Singapore economy.

1. Employment

- Singapore will continue to face a tight labour market as retirees leave the labour market and government continues to tighten the inflow of foreign workers.
- As Singaporeans continue to upgrade and retrain themselves, there will be greater shortages of the manual and low skilled workers.
- A rise in dependency ratio (ratio of those not in labour force over those in labour force) means an increasing tax and economic burden on our working-age population. This implies the need to retain the older workers longer in the workforce.
- The retirement age may need to be raised further from the present 62 years old and employers may need to accommodate older workers in their organisations.
- A larger proportion of the elderly will probably be employed in the low skilled, manual service sectors.

- Average weekly and/or annual working times could also be increased. Fewer workers have to work more hours. This implies, among other things, a higher share of women in the workforce or greater numbers in part-time jobs switching over to full-time positions.
- Singapore, apart from facing a smaller labour force will also face changes in the structure and composition of its labour force.

2. Economic Growth

- Declining number of population in the working age group. This could lead to lower consumption and investment expenditure in the future as society save up to prepare for retirement. AD may fall or increase more slowly, reducing or slowing down Actual Growth.
- Ageing population results in lower innovation and lower productivity as technical expertise is largely generated by young workers. Older workers are also usually less flexible and mobile than their younger counterparts. This restricted mobility of the labour force will in future slow down structural change, since it is mainly younger workers who facilitate the implementation of new product, process and management ideas. Productive capacity may stagnate or increase even more slowly than AD.

Hence, it will become even more difficult for Singapore to support productivity and economic growth. If AS lags behind AD, there could even be inflationary pressure, making it even harder to sustain EG in the LR.

3. Balance of Payment

- A less vibrant and less innovative workforce as the elderly are not willing to take risks may result in less competitive exports and less attractive place for tourists and investors. This may result in a worsening of our balance of payment.

4. Standard of Living

- Government revenue comes mostly from income taxes, consumption taxes and asset taxes, all of which are dependent on economic growth. A shrinking and ageing population and workforce will make it more difficult to sustain previous surpluses in public finance, especially when this is coupled with increasing needs for higher expenditure to support a much larger elderly population.
- The need to increase productivity also means greater spending to support training, higher education and skills development.
- As the economy stagnates, it will be a strain on our resources to invest in infrastructure, or to address the needs of lower-income Singaporeans. Without economic growth, social and welfare programmes can quickly become unsustainable. Hence, spending in some other areas may have to be foregone or taxes may need to be raised and these may mean a lower quality of life in the future.
- While Singaporeans can rely on their Central Provident Fund (CPF) savings to fund their retirement, the rising cost of living and higher cost of healthcare may result in such funds being inadequate to sustain their previous standard of living.

In conclusion: An ageing population and falling productivity will pose several challenges for the economy. There will be a slowing down of Economic Growth and with it a lower Standard of Living. A sustainable, albeit slower growth can still be achieved, depending on how responsive the labour and employers are to such demographic changes. The structure of the economy will change, principally to the benefit of the healthcare sector and other business

lines such as asset management, pharmaceuticals, bio-technology, medical technology, support and social services.

Level	Descriptors	Marks
L 3	Effective explanation of consequences of both ageing population and falling productivity using economic analysis (explaining in terms of macro- economic problems) Good application to Singapore economy	7-10
L 2	Adequate explanation of consequences of ageing population and falling productivity but not consistently using economic analysis (not explaining in terms of macro- economic problems) Inadequate application to Singapore economy	5 – 6
L 1	Descriptive and generalised answer with not much application to Singapore economy	1-4

b) In view of these problems, assess the relevance of supply side policy as Singapore continues to face the problems of ageing population and falling productivity growth (15m)

Intro: Brief explanation of Supply side policy.

- Short term policy that encourages competition through privatisation and liberalisation. Mainly aiming to reduce production cost, causing SRAS curve to move downwards.
- Long term policy that aims to increase efficiency and productivity, mainly aimed at shifting LRAS to the right.

Question Analysis: In view of the challenges faced by Singapore due to its ageing population and falling productivity, (as in part a), students are to evaluate if supply side policy is still relevant. In other words, can such policy help to tackle the problems of slow economic growth, lower living standards and falling government budget surpluses. Answer should also consider the relevance of other alternative policy in tackling such challenges.

Development:

Supply side policy is largely relevant:

1. Productivity improvements are necessary to sustain economic and real wage growth, as our workforce growth slows. Government has launched various programmes to help companies restructure and improve their productivity. For example, the enhanced Productivity and Innovation Credit Scheme (PIC) provides tax benefits to businesses which invest in productivity improvements and training for their workers. The 30% Corporate Income tax rebate to help companies restructure and innovate was extended for another two years. Workfare Training Support (WTS) Scheme and the Workfare Income Supplement (WIS) are avenues for older low wage workers to improve their employability, upgrade to better jobs and earn more.

2. Recognising the importance of continuing education and training (CET), the Government has committed in 2010 to invest \$2.5 billion over the next five years. In 2015, the government introduced new initiatives to support life-long learning and deepening of skills. The SkillsFuture Credit is available for all Singaporeans above 25 to enhance their skills in work related areas.
3. Top up national research fund by \$1bn to help companies develop new products.
4. Investing in infrastructure to meet growing and changing economic and social needs such as improving public transport and healthcare, particularly community hospital beds and nursing home capacity.
5. Other policies that enhance labour mobility such as providing flexible working arrangements for those with care-giving responsibilities but would like to work, and for older persons who prefer shorter and more flexible hours.
6. Labour policies: The government will have to continue to welcome immigration to slow down our projected shrinking population. This is to prevent an acute labour shortage which would cause a hike in labour cost,

Evaluation: These will ensure that our LRAS will continue to increase, so that wage can continue to increase without causing inflationary pressures and slow down economic growth further. Continual upgrading and improving the infrastructure capacity would help to and avoid congestions and lowered healthcare standards, maintaining a sustainable living environment.

However, the question is 1. whether the government finances can continue to support such spending and whether we can afford to keep on drawing down on past public sector surpluses. Shrinking labour force reduces government's ability to collect taxes and ageing population increases demand on government's welfare spending. Less government reserves would reduce government's ability to fight future economic downturns.

2. Spending on education, training and R&D are long term in nature where success is uncertain and not guaranteed. The elderly may not be very receptive to new methods of production or may be slow in adapting to new technology. In fact, Singapore's productivity growth had been quite dismal and in 2014 there was a fall in productivity growth.

3. Employers are willing to reemploy elderly workers and train them.

The counterargument is that it is precisely the long term nature of such policy that the result cannot be seen immediately. As firms are incentivised to upgrade and automate and workers are encouraged to upgrade their skills, if productivity can be increased, workers will move up the value chain and get better pay, increasing national income. This would enable government to keep a healthy budget balance, despite the smaller workforce.

Hence, supply side policies are largely relevant to help the economy overcome the problems of ageing population and falling productivity. *However, the type of supply side measures may have to vary and government may have to rely more on population and immigration policy to try to sustain the size of its labour force. The role of the employers also become important as they need to see the importance of making relevant changes to allow more mothers and elderly to re-join the labour force.*

Other policies required: (dd management policies)

1. Redistributive Fiscal policy to ensure an inclusive society. Government has to take care of the lower-income earners and outline strategies to assist them and help older workers stay in the workforce. Higher healthcare subsidy for the elderly, GST credits,

waiver for exams etc. The latest budget proposes to raise the top marginal tax rate (to 22%) to fund a social welfare programme for the poor and elderly -The emphasis of Singapore's growth policy on strengthening total factor productivity is also achieved partly through fiscal incentives. These include extending a wage credit scheme and corporate income tax rebates.

2. Fiscal Policy in the form of lowering corporate tax rate or grants to attract foreign investors into Singapore. This will not only increase AD and stimulate Actual growth but will help increase productive capacity in the long run if the investments are in real capital and technology.
3. Exchange rate policy- Allowing currency to weaken to boost exports or strengthening currency to overcome inflation due to inflationary pressures created by shrinking labour force.

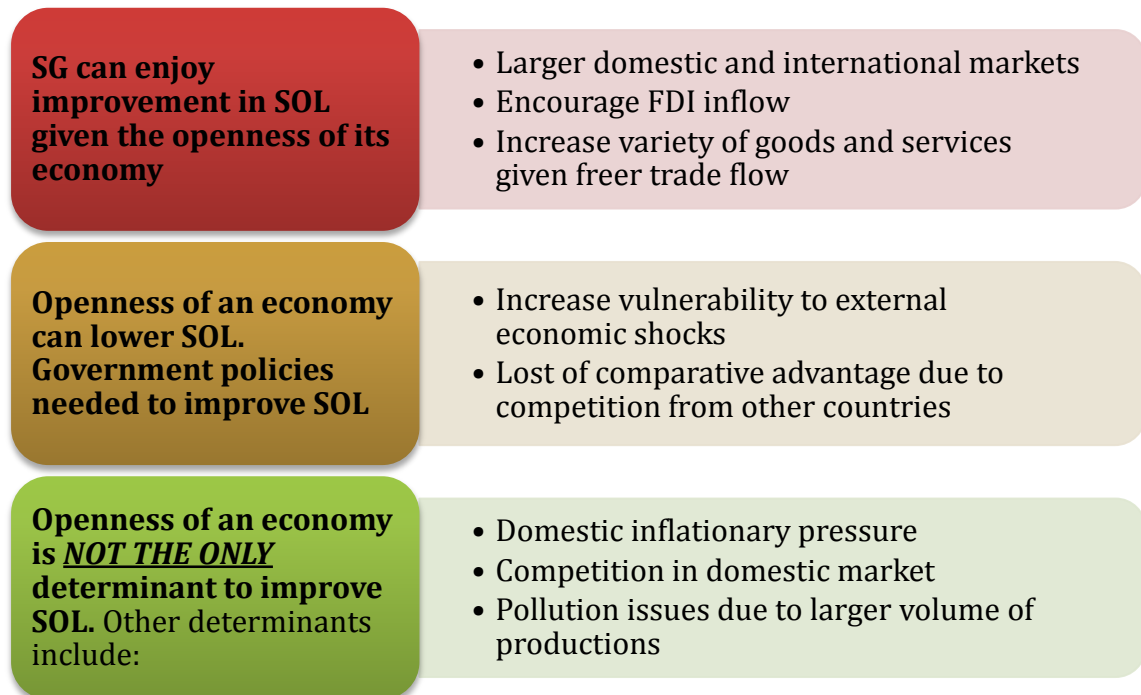
Evaluation: While supply side policies directly tackle the productive capacity affected by ageing population, these demand management policies are useful in tackling more directly, the problems of slow actual growth and falling export competitiveness. However ability to attract foreign investors also depends on other pull factors like political stability and quality of labour force. Hence foreign investors may be deterred by the shrinking and less productive workforce. Similar to supply side policies, Fiscal policy puts further strain on government's budget which is already limited by the shrinking workforce.

Synthesis: Supply side policy remains an important policy in the face of ageing population and falling productivity. Despite the financial constraint imposed on government, such policy is necessary to avoid a stagnant or a shrinking economy. To fully tackle all the challenges, some form of demand management policy is still required to boost the AD.

Level	Descriptors	Marks
L 3	Effective explanation of 2 or more supply side measures Good attempt at evaluating relevance of supply side measures in the context of Singapore Explain and assessed more than one other measure apart from supply side policy.	9-11
L 2	Adequate explanation of 2 or more supply side measures Some attempt at evaluating relevance of supply side measures but assessment is not consistently applying to Singapore context Explain at least one other measure apart from supply side policy but may not assessed it's importance or relevance	6-8
L 1	A one-sided answer – only looking at supply side policy Inadequate coverage of supply side measures- only 1 or 2 Not really evaluating the relevance of supply side policy in tackling the mentioned problems in the context of Singapore.	1-5
E1	Attempt to provide a reasoned conclusion as to whether supply side policy is relevant in tackling the problems Rehearsed evaluation of ss side policies, not particularly addressing the main issues discussed.	1-2
E2	A developed evaluation with good justification of the conclusion as to whether supply side policy is relevant. Good judgement/ evaluation specific to issues discussed.	3-4

- 6 Assess the extent to which the improvement of standard of living in Singapore is dependent on the openness of the economy. [25]

Overview of approach:



Suggested response:

I. Introduction, explanation of key terms & contexts:

Consider the economic characteristics of Singapore economy

- SOL: Comprises of both the material (income per capita) and non-material well-being (infrastructure etc.)
- Openness to the global economy varies based on the degree of government control over the movement of goods, labour and capital.

Singapore a small country with limited resources and market size. It is thus crucial for Singapore to maintain its openness so as to benefit from international trade and foreign investment to achieve its macroeconomics objectives which in turn, would have significant impact on the standard of living.

II. Thesis: Openness of Singapore economy can improve the SOL

1. Larger domestic and international markets

- Enable domestic firms to enjoy **economies of scale** with increase in production → increase cost-efficiency → consumers may gain from lower-priced goods (assume: firms passed cost-savings to consumers) → improve material SOL
- **Greater trade specialization** according to the principle of comparative advantage i.e. production of goods and services at a lower opportunity cost than its trading partners. Singapore focuses on the production of **High valued-added productions and service sectors** (such as Biomedical

products, computer equipment, machinery, petroleum products etc.) → enable skilled labours in sun-rise industries to gain from higher labour capability/mobility → ability to demand for higher wages → improve material SOL

- Widen export market for Singapore exporting firms given greater access to international market → increase in AD → achieve **actual growth** and generates **more employment opportunities** (assume: labours possess necessary skills to enter the growing export-industries; such as pharmaceutical, bio-medical, oil-refinery industries etc.) → improve SOL - higher material SOL due to higher purchasing power & higher non-material SOL due to lower unemployment rate hence greater **social stability**

2. Encourage greater FDI inflow

Attract foreign firms to invest in Singapore (one of the most favourable locations for investors globally) → **higher Foreign Direct Investment (FDI)**

- Transfer skills and technology to domestic country and raises competition in the domestic market + Higher investment funds and capital → encourage investment and boost productivity & efficiency → increase in AD and LRAS → enable actual EG and potential EG, raise unN → improve SOL

3. Increase greater variety of goods and services given freer trade flow

- Openness enable **freer flow of imports of goods and services across borders** → more varieties/ choices of goods and services enjoyed (domestic and imported goods) and imports prices could even be relatively cheaper → larger consumer surplus → improve SOL

Anti- Thesis: Openness of an economy can lower SOL. Thus, government policies needed to improve SOL

1. Increase vulnerability to external economic shocks

- More susceptibility to fluctuations due to **greater dependence on external trade and inflows of foreign funds and investment** → investors pessimism about future economy prospect can have adverse impact on SG → postpone investment plans/ reduce scale of production / foreign firms pull out of SG market → fall in I → fall in AD → fall in economic growth → cyclical unemployment → lower SOL
 - E.g. recent years, many downturns experienced: 2008 Global Financial Crisis- SG was the first Asian country to slip into a technical recession due to its heavy reliance on exports **OR** Euro Crisis- Sovereign debt crisis in the euro zone & weak growth in the US economy crimped SG demand for goods and service → threaten SG's economic growth **OR** Oil shock in 2007 where oil prices increased significantly causing cost of production to increase significantly and prices of general goods and services to climb
- Policy needed to mitigate adverse impact due to openness:

Expansionary Fiscal Policy:

 - Increase government expenditure and ensure tax rates remain low (competitive) → **Smart targeting of fiscal measures is needed to mitigate adverse impacts of external shocks despite the openness has reduced the effects of fiscal policy on AD.** E.g. In 2009- massive S\$20.5 billion Resilience Package aims to help Singaporeans keep jobs

and viable companies stay afloat → but will not get SG out of the recession so long as the global economy continues to contract.

- Ev: Nevertheless, using expansionary fiscal policy is essential to help avert sharp downturn which is more damaging to the economy. The use of expansionary fiscal policy in Singapore was possible due to significant accumulation of past budget surplus for rainy days. Without sufficient reserves, borrowing would be required and this may lead to lowering of future SOL.

OR

Modest & gradual appreciation → *affordability of relative cheaper imported inputs, goods and services*

- Modest & gradual appreciation enable Singapore to manage imported inflation
 - Raise consumers' purchasing power to purchase imports goods and service hence improve SOL
 - Enable firms relying on imported inputs to lower cost of production → maintain comparative advantage → stimulate EG and employment → improve SOL

2. Competition from other countries leading to loss of comparative advantage

- Increase global competition given rapid technological advancement & low-cost countries (such as China, India with lower labour cost) → Failure to adjust to structural changes in technological advances → **loss of Comparative Advantages (cost-efficiency)** → fall in export-competitiveness and rise in unemployment → lower SOL. Hence, it is important Singapore continue to improvise on its competitive edge.
- Policy needed to mitigate adverse impact due to openness:

Trade policy → *gain from larger domestic and international markets*

 - By active engagement in **Free Trade with more countries** → continuous gain in accessing into new international exports markets as well as to purchase relatively cheaper imported inputs for production.

OR

Supply-side policy

→ *Improvement on labour productivity to attract greater FDI inflow*

- Strong emphasis on the need to **raise labour productivity by skills upgrading, re-training and education** as well as spending of improving the infrastructure in key sectors → enable more cost-efficient production thus lower per unit labour cost → enable Singapore to continue to attract specific higher value-adding foreign firms into SG → stimulate EG and employment → improve SOL

→ *Maintain competitiveness of products in domestic and international market*

- Raise productivity by engaging in **R&D to improve on production methods** as well as spur **product innovation** → improve firms 'competitive edge and explore new areas of comparative advantage → failure to do so would even result in firms shutting down → raise unemployment → lower SOL
- Ev: However, should inefficient not be able maintain its competitiveness in the market; allowing the firms to shut down may be beneficial as it can improve on the allocation of the resources.

III. Anti-thesis: Openness of Singapore economy is not the only determinant to improve the SOL.

Other determinants include:

1. Domestic inflationary pressure

→ Inflation can erode the purchasing power of consumers and hence lower SOL. Hence, with growing concern of inflationary pressure that stems from **domestic factors such as:**

- **High consumption of cars and houses;** It is important to tame domestic inflationary pressure to ensure SOL is not eroded. In achieving this, government has been using measures such as **macro-prudential policy** (tighten the loan-to-value, uses additional buyer stamp duty etc.).
- **Wage-push inflation;** It is important that labour continue to **improve on their skills through retraining and education to raise labour productivity** → enable to demand for higher income to prevent erosion of income → increase SOL

E.g. SkillsFuture in Budget 2015 to help labour increase their productivity **OR** Workfare Income Supplement (WIS) to help lower-skilled workers acquire skills & employability to enjoy sustainable wage increases. Although retraining may take a longer time to improve SOL → labour are likely to do so as government has heavily subsidised many of these programmes.

2. Degree of competition in domestic market that can influence the quality and pricing of goods

→ Countries that ensure imperfect firms do not exploit the consumers would also see consumers' SOL being higher as well. In Singapore, government has used **legislation** such as having **Competition Law to protect the consumer welfare** and regulatory body such as Competition Commission of Singapore (CCS) to encourage market competitiveness

- E.g. SISTIC ticketing company was found to have abuse its market dominance by negotiating for exclusive agreement to be the sole ticketing providers. It was given a financial penalty for the infringement of the Competition Law. This has helped the market to be open and competitive, and has even encourage innovations such as print-at-home tickets → raising consumer welfare → high SOL
- Ev: in order for the legislation to work well, it is essential that there are **reliable and efficient regulatory bodies that consumers can seek help from** when being exploited/ harmed by firms' unfair practices.

3. Level of pollution

→ Pollution such as air, noise, water pollutions can adversely affect the quality of lives (negative externality). **With population size increasing, there are greater demand for more goods and services to be produced** → lead to **greater level of air pollutions etc. when firms increase in its productions** →

lower non-material SOL

- In Singapore, the main sources of air pollution in Singapore are from the burning of fossil fuel for heat generation in industries, electricity generation and transportation → poorer living environment → lower quality of life (non-material well-being) → lower SOL
- Thus, it is important that **firms, consumers and government are taking more proactive actions to conserve the environment**. In Singapore, firms and consumers are increase taking greater social responsibility to protect the environment by using less biodegradable materials and supporting recycling efforts.
 - E.g. More firms and consumers are participating in the annual event 'Earth Hour' to conserve the use of electricity as well as on-going programmes such as 'Bring Your Own Bag (BYOB)' to discourage consumers from using plastic bags. Such events are increasing welcoming and have garner much support and awareness among Singaporeans. **OR** Government has also implemented **legislation** to manage the pollution problems. Legislation such as 'The Hazardous Waste (Control of Export, Import and Transit) Act and its Regulations' are put in-placed to regulate the control of export, import and transit of hazardous wastes. Industries are also required to conduct source emission tests to ensure that industries monitor their exhaust emissions regularly and take remedial measures where necessary to comply with the air emission standards.
- Ev: While it is important for firms, consumers and government to play active roles to protect the environment so as improve the non-material SOL. There is **some pollution that requires cooperation between countries**. For instance, the air pollution (haze crisis in 2013 that hit Singapore) was caused by pulpwood, palm oil, and logging firms burning land to clear land for agriculture. Without the help of Indonesian government to crack down on such illegal practices, the air pollution would intensify → reducing the non-material SOL of neighbouring countries such as Singapore.

Conclusion:

Given that Singapore has no natural resources, the key to its survival is the openness of its economy. While the openness of Singapore economy can enable Singaporeans to enjoy improvement in the SOL. It is essential that Singapore not only continues to maintain its competitive edge through the use of appropriate policies, but also consider what are some (internal) domestic factors that need to be dealt with to improve Singaporeans' current and future SOL.

Marking Scheme:

Level	Marking Description
High L3 (18-21)	<ul style="list-style-type: none"> • Balanced answer providing well-developed explanation on positive and negative implications of openness in relation to trade, investment and economic well-being etc. of Singaporeans, with consideration of Singapore's measures to improve of SOL given its openness of the economy. • Good consideration of other factors that can improve the SOL apart from the degree of openness of economy. • Answer is well contextualised to Singapore. • Examples provided are relevant and well explained.
Low L3 (15-17)	<ul style="list-style-type: none"> • Balanced answer provided but under-developed in explanation for either positive or negative implications of openness

	<ul style="list-style-type: none"> • Some consideration of measures to improve of SOL given its openness of the economy but may contain some incoherence or inappropriate in explanation. • Some consideration of other factors that can improve the SOL apart from the degree of openness of economy. • Answer is contextualised to Singapore. • Examples provided are relevant but may not be well- explained.
High L2 (12-14)	<ul style="list-style-type: none"> • Balanced answer provided but under-developed in explanation for positive and negative implications of openness. Answer had critical arguments on the openness of the economy and linked to the improvement of Singaporeans SOL. • Some consideration of measures to improve of SOL but little explanation. • Answer provides other factors that can improve the SOL apart from the degree of openness of economy but under-developed. • Some errors, but does not reduce the validity of the overall conclusion • Some attempt to contextualize to Singapore. • Examples provided are relevant but may not be well explained.
Low L2 (10-11)	<ul style="list-style-type: none"> • Balanced answer provided but under-developed in explanation for positive and negative implications of openness. • Little consideration of measures to improve SOL • Little consideration other factors that can improve the SOL apart from the degree of openness of economy. • Points are relevant, but superficial and may not be well organized. • Little/no contextualization. • Examples provided are relevant but little explanation.
High L1 (6-9)	<ul style="list-style-type: none"> • Answers provide basic analyses on the benefits/ costs of openness without linking to SOL • Answers does not mention about how measures used to improve SOL. • No consideration other factors that can improve the SOL apart from the degree of openness of economy. • Answers show a narrow view about openness.
Low L1 (1-5)	<ul style="list-style-type: none"> • Analyses are error-strewn and incoherent • Grossly inadequate answers.
E2 (3-4)	<ul style="list-style-type: none"> • The answer shows evaluation of the approach of being an open economy taken by the government to enhance the SOL in Singapore. • The answer makes critical judgment on the need for Singapore to maintain its openness while maintaining the argument that openness is NOT the only factor that would enable the improvement of SOL.
E1 (1-2)	<ul style="list-style-type: none"> • Some evaluation present, but mostly superficially mentioned and directed narrowly at the effects of globalization on improving SOL.