Yishun Junior College
2017 JC2 H2 Economics
Paper 2
Preliminary Examination
Suggested Answers & Marking Schemes

Question 1

In the past few years there has been weak economic activity worldwide and increased efforts to produce oil.

Discuss the impact these events are likely to have on consumers and producers in the markets for oil and alternative energy. [25]

Suggested Answer

Explain the impact of the events on the oil market

- Weak economic activities worldwide → weak global demand for goods and services → demand for oil falls as less oil required to power the reduced production of output.
  DD curve for oil shifts to the left
  [Accept if weak economic activities worldwide → slow increase in global demand for goods and services → small increase in DD for oil]
- Increased efforts to produce oil like fracking and more exploration and use of technology to produce more oil → supply of oil increases → SS curve shifts to the right
- With fall in DD and an increase in SS → surplus in the market →downward pressure on the price → price of oil falls and the fall is significant since both the DD and SS forces reinforce each other to bring the price down.
  Furthermore, both DD for and SS of oil are price inelastic.
  DD for oil is price inelastic due to few substitutes available.
  SS of oil is price inelastic as the process to extract and produce oil takes time.
  [If analysis is based on increase in DD and increase in SS → Q increases but P may increase, decrease or unchanged depending on relative increase in DD and SS. Make reasoned judgement on impact on P]
- Equilibrium quantity increases if the increase in SS of oil is greater than the fall in demand. Increase in Q is less than proportionate to fall in P since DD is inelastic.
  Equilibrium quantity decreases if the increase in SS is less than the fall in demand.
  Equilibrium quantity remains unchanged if the increase in SS = fall in demand
  Or
  Make a reasoned judgement that Q is likely to increase or decrease.

Explain impact on oil producers

- TR = P X Q
- P decreases and Q increases less than proportionately → fall in TR of oil producers reducing their profits if cost conditions remain unchanged.
- P decreases and Q decrease or → fall in TR
- P decreases and no change in Q → fall in TR

Explain impact on oil consumers

- Fall in the price of oil → fall in factor costs for buyers who need oil as an input in the production of goods and services → TE on oil falls.
- Consumers in the oil market are producers of final products that require oil as an input/fuel. When price of oil falls, COP for a wide range of final goods and services falls. If oil constitutes a large proportion of the TC of production, the reduction in TC will be greater.
- However, whether these consumers of oil (who are the producers of final goods and services that require oil as factor input) are adversely affected depends on the relative changes in their TR and TC. (Impact on their TR depends on how the events affect the DD and SS of their products and hence the equilibrium price and quantity in the respective markets)

  [Accept if students analyse impact of change in DD and change in SS and then analyse the combined impact]

Markets for alternative energy

- DD for alternative energy decreases
  Oil and alternative energy are substitutes and thus XED is positive
  With oil price falling to a large extent, DD for alternative energy decreases
- Fall in DD for alternative energy with no change in SS → P and Q of alternative energy fall → TR of producers falls
  Extent of the fall in the TR depends on the extent of the fall in DD which in turn depends on the strength of the relationship between oil and the alternative energy.
  A stronger relationship means the magnitude of the XED is greater and the impact on the DD for the alternative energy will be greater and hence the fall in TR is likely to be greater.
- Consumers in the alternative energy markets enjoy a lower price of energy and Q falls → TE on energy is reduced.
- The weak economic activities worldwide and the increased activities to produce oil would cause a significant fall in the price of oil. Total consumer expenditure in both the oil and alternative energy markets are reduced. Oil producers and alternative energy producers are likely to see a fall in TR and are more likely to be hurt by the fall in oil prices.

Marking Scheme

	Knowledge, Application/Understanding and Analysis	
L3	For a thorough analysis of the impact of the events on the producers and consumers in both the markets for oil and alternative energy. Answer makes good use of the relevant elasticity concepts to determine the impact.	18-20
	For a thorough analysis of the impact of the events on the producers and consumers in both the markets for oil and alternative energy.	15-17
L2	For an answer that shows clear analysis with accurate use of economic concepts in explaining the impact in the oil and alternative energy markets with hardly any reference to the producers or consumers. Or For an answer that shows clear analysis with accurate use of concepts in explaining the impact in either oil or alternative energy markets with clear links to the consumers and/or producers.	12-14
	For an answer that shows accurate use of economic concepts in some explanation. Explanation lacks rigour in analysis. Or For an answer that shows analysis of either oil or alternative energy markets with no links to the consumers or producers	9-11
L1	For an answer that is primarily descriptive, not using economic concepts/terms or explanation is largely under-developed. Or For an answer that deals inadequately with the oil market, with little or no mention of the market for alternative energy. For an answer that is largely irrelevant, does not use economic concepts, or exhibits major errors in the use of economic concepts.	5-8 1-4

E3	For an answer that uses analysis to support judgement regarding the impact in the markets discussed	4-5
E2	For an answer that makes some attempt at evaluative judgement regarding the extent of the impact	2-3
E1	For an answer that gives unsupported judgement regarding the extent of the impact	1

Question 2

(a) Explain why barriers to entry is a key determinant of a firm's profits. [10]

(b) Discuss whether firms in the real world set prices at profit-maximising levels. [15]

Part (a)

Suggested Answer

Introduction

Briefly explain what barriers to entry are and how firms typically profit-maximise.
Briefly explain how a firm's profits may change (SR vs LR)

Body

Explain how BTEs has implications on the shape of AR and MR of a firm and therefore affects profit-maximisation

- Since firms typically profit maximise, they will equilibrate at MC equals to MR.
- And since BTE affects the shape of MR, BTE affects profit-maximisation of firms
- Level of BTEs affects the mkt share and therefore mkt power or price-setting ability. This in turn affects the shape of AR/MR and MR is a key determinant of profit-maximisation process.
    - Illustrate using either low BTE leading to low/no price-setting behaviour (e.g. PC firms with horizontal MR and AR) or how high BTE leads to high price-setting ability (e.g. imperfect competitive firms with downward sloping AR and MR with AR>MR)

Explain how BTE may influence the LR profits of firms

- [Continue from earlier explanation of the possibility of supernormal profits in the SR (can be any market structure)]
- In the event that firms make supernormal profits, potential new firms will be attracted to enter the industry
- Whether potential new firms can/will enter to erode the supernormal profits depends on the level of BTE.
    - If BTEs are high, supernormal profits will persist into the LR.
    - However, if BTEs are low, supernormal profits will be eroded because the entry of new firms will erode market share (i.e. MR and AR shifting left), which will result in lower prices for, for example MC firms, and hence reduce to normal profits (where no more firms will be attracted to enter). [Alternatively, if PC firms are used for the discussion, entry of new firms will increase the market supply which will push the prices down and hence reducing to normal profits.]

Conclusion:

BTEs are key determinants to a firm's level of profits (both profit-maximisation and level of profits in the LR). However, there are other factors affecting the profit levels as well, such as cost consideration, other objectives of firms or government intervention.

Marking Scheme

L3	For a thorough and well-developed explanation on why barriers to entry is a key determinant of a firm's profits (both SR and LR), with the use of accurate economic concepts and appropriate examples.	8 – 10
L2	For an under-developed explanation on why barriers to entry is a key determinant of a firm's profits (SR and LR). May contain some conceptual errors but appropriate economic concepts used. Some examples provided but not well-elaborated. OR Well-developed explanation with the use of relevant examples on why barriers to entry is a key determinant of a firm's profits (either SR or LR only). Theoretical answer – Cap at L2 – 6m	5 – 7
L1	For an undeveloped answer that shows knowledge of barriers to entry and firm's profits but contains a few valid points, or is mostly irrelevant or inaccurate.	1 – 4

Part (b)

Suggested Answer

Introduction

- Briefly reiterate profit-maximisation strategy of firm and highlight other objectives of firms such as limit/predatory pricing, revenue/mkt share maximisation strategy.
- Briefly explain that sometimes in the case of government intervention to tackle market dominance, there could be price control policies implemented such as AC-/MC- pricing.

Body

Thesis #1: Firms in the real-world set prices at profit-maximisation levels

- Assuming the firm has good information on their MR and MC and is a profit-maximiser, the firm will set prices at profit-maximisation levels to their best of their available information.
- The above is likely in markets where demand patterns are known (through past data and accurate projections) and fairly stable (limited entry or exit of firms) and the nature of production not highly complex. E.g. mobile subscription, utilities, cinema screenings.
- In some cases, such firms may even price discriminate to enhance their profit level if they have further information on market segments and price elasticities of demand. E.g. cinema (3^{rd} deg PD), mobile subscription (2^{nd} deg PD), utilities (2^{nd} deg PD), pharmaceutics (3^{rd} deg PD)
- Other examples to be used could be the pricing by oligopolists in the kinked demand curve model. Through the explanation of why firms are reluctant to lower or raise prices (due to fear of losing profits/revenue), that is clear that the existing market price is profit-maximising for the firms.

Anti-thesis #1: Firms may not have sufficient information of MC and MR to profit-maximise

- Some firms may not have sufficient information on consumers' demand and/or even their own cost structures to accurately determine their MC and MR. E.g. fashion retail outlets where demand patterns change quickly due to fashion trends, difficult to determine the marginal cost for transport services
- In such cases, it is impossible for such firms to engage in pricing at profit-maximisation levels. Such firms may adopt a simple mark-up on cost strategy to stay profitable. E.g. local provision store will just price at 20% mark-up on their unit cost.

Anti-thesis #2: Firms may not profit-maximise if they have other objectives

- Some firms may have other objectives in mind.
- Some firms may want to deter entry of new potential firms by engaging in limit pricing. Their pricing strategy is such that while they still make supernormal profits, the profit margin does not entice new firms to enter. This is a way to maintain market share and sustain supernormal profits for the long term (not maximised though).
- Some firms may engage in predatory pricing or dumping to drive out rivals/competitors. These firms usually will charge at below the cost of rivals or their own.
- Some firms or marketing departments may be run by sales managers who are more concerned about sales revenue collection rather than profit-maximisation.
- Therefore, if the firm has an objective that is not profit-maximising, the firm is unlikely to be pricing at profit-maximisation levels.

Anti-thesis #3: Firms may be regulated by the government

- In the event that the market is suffering for market dominance issue (e.g. income inequality, allocative inefficiency), the government may decide to intervene in such markets.
- If the intervention measure adopted is one of price control (e.g. AC-pricing, MC-pricing), the prices charged will not be at profit-maximisation levels. E.g. utilities, public transport

Evaluative conclusion:

As we can observe from the above, the extent of whether firms will price at profit-maximisation levels depends very much on 1) availability of information on revenue and cost, 2) objectives of firms and 3) whether there is government intervention in terms of price controls.

Marking Scheme

L3	Developed explanation of how firms may set prices at profit-maximisation level (e.g. price discrimination) and how firms may not set prices at profit-maximisation level (e.g. limit/predatory pricing, revenue max/mkt share max strategy, AC/MC-pricing control by govt). Well-explained examples provided.	8 – 10
L2	Under-developed explanation of how firms may set prices at profit-maximisation level (e.g. price discrimination) and how firms may not set prices at profit-maximisation level (e.g. limit/predatory pricing, revenue max/mkt share max strategy, AC/MC-pricing control by govt). OR Developed explanation of how firms may set prices at profit-maximisation level (e.g. price discrimination). OR Developed explanation of how firms may not set prices at profit-maximisation level (e.g. limit/predatory pricing, revenue max/mkt share max strategy, AC/MC-pricing control by govt).	5 – 7
L1	For an answer that shows knowledge of pricing decisions of firms, containing major conceptual errors.	1 – 4
E3	Well-reasoned judgement that critically evaluates whether firms set prices at profit-maximisation level in a summative conclusion. E.g. (extent of) imperfect information on cost and revenue due to complexity of products and consumer market, depends on the objectives of firms, depends on whether there is government intervention	4 – 5
E2	Largely unexplained, judgements with some attempt at evaluation that is	2 – 3

	relevant to the question.	
E1	Evaluative comments are unexplained or not supported by economic analysis E.g. superficial conclusion based on the analysis by merely repeating or summarising.	1

Question 3

(a) Explain how factor immobility and market dominance may result in market failure. [10]

(b) Evaluate the possible policies that the Singapore government can adopt to correct the market failure caused by market dominance. [15]

Part (a)

Suggested Answer

Introduction

Briefly explain the concepts of factor immobility, market dominance and market failure.

- Factor immobility – Prevents resources from responding quickly to structural changes in demand and supply. Thus, the market may not clear quickly leading to wastage of resources and inefficient allocation of resources. Two common types of factor immobility - occupational and geographical immobility.
- Market dominance - Existence of firms with market power results in under-production. The price-setting ability arising from market dominance will cause allocative inefficiency
- Market failure - When the unregulated market fails to allocate resources efficiently

Body

#1: Explain how factor immobility may lead to market failure

Occupational immobility

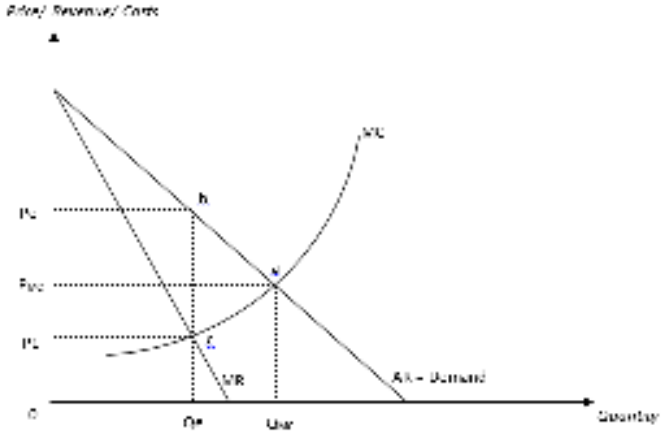
- For instance, due to the lack of relevant education and training, workers may not have the skills to switch jobs when there are structural changes in the economy. E.g. Singapore economy transited from low-value adding manufacturing to an economy that demands for knowledge, innovation and service-based economy. Such a mismatch of labour skills can deter markets, and consequently the economy, from attaining its maximum potential output level.
- Immobility of workers can happen between different industries and occupations. It may be due to the lack of qualification or ability to do alternative jobs, less desirable working condition (greater stress) or less fringe benefits in the alternative job (e.g. amount of personal free time).
- Structural unemployment arises due to such a mismatch between the skills and jobs, is long-term and represents a waste of scarce resources.

Geographical immobility

- Causes of geographical immobility:
  - Poor transport facilities, as seen in many large developing countries.
  - Financial difficulties or cultural differences, etc. that prevents resources from moving across regions to be employed in the most productive use, leading to an inefficient allocation of resources.
  - Poor availability of housing or other facilities (e.g. accessibility via transportation network, schools, etc.) in the new area or even ignorance of availability of jobs elsewhere in the country or even fear of the unknown.
  - Other reasons include family / social ties, high financial costs involved in moving, or differences in cost of living between regions, 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

- Institutional factors (e.g. government passing laws that may affect the immigration requirement and on employment pass requirement would prevent people from entering a new job easily in another location.
- Thus, unemployment persists, resulting in wastage of scarce resources.

#2: Explain how market dominance may lead to market failure



- A firm with market dominance / power faces downward sloping Average Revenue (AR) and Marginal Revenue (MR) curves. The firm's demand curve is downward sloping, and reflects the Law of Demand. This means that while firms are price setters, they will have to adhere to the Law of Demand and lower the price if it wants to sell more output; and when it increases the price it will sell less. The demand curve will reflect the AR, provided that a single price is charged for all levels of output. However, since the price charged for all levels of output is different, the MR is no longer equal to the AR. In fact, as the firm sells an additional unit of product, at a lower price, it would have to lower the prices of all preceding units. Thus, graphically, both AR and MR are downward sloping, with MR below AR at all levels of output.
- To maximise profits, the firm will restrict output to Qe where MC = MR and MC is rising, and raise prices. By doing so, price (Pe at Qe) rises above MC of production (P1 at Qe), or price is greater than MC at Qe. This implies that what consumers are prepared to pay for additional units is more than the opportunity cost incurred in producing these units. Society would be better off if more resources are channelled into the production of this good. Between Qmc and Qe, the excess of benefit forgone (Qe-b-a-Qmc) after subtracting the costs not incurred (Qe-c-a-Qmc) is reflected as the deadweight loss (a-b-c), reflecting that social welfare is not maximised. Hence, there is an under-allocation of resources for production of a product which society values, which results in allocative inefficiency.

Conclusion:
Hence, due to factor immobility and market dominance, inefficient allocation of resources occurs. Therefore, government intervenes to correct this market failure.

Marking Scheme

L3	For a thorough and well-developed explanation of how factor immobility (both geographical and occupational immobility) AND market dominance may lead to market failure using accurate economic concepts, with appropriate examples provided and elaborated.	8 – 10
L2	For an under-developed explanation on how factor immobility AND market dominance lead to market failure. May contain some conceptual errors but appropriate economic concepts and analysis used. Some examples provided but not well-explained. Or Well-developed explanation with the use of relevant examples on how EITHER factor immobility OR market dominance leads to market failure. Theoretical answer without the use of appropriate examples – Cap at L2 – 6m	5 – 7
L1	For an undeveloped answer that shows knowledge of the reasons for market failure but contains a few valid points, or is mostly irrelevant or inaccurate.	1 – 4

Part (b)

Suggested Answer

Introduction

- Briefly explain that to manage market dominance, governments can introduce policies that will increase the level of competition or contestability, by typically lowering barriers to entry, to control and regulate dominant firms. Examples of policies include rules and regulation and price controls

Body

Rules and regulation #1: market deregulation

- Markets are opened up to greater competition as new firms enter the market. This may result in a fall in demand for incumbent firms' products, and making the demand curves more elastic as more substitutes are available. Thus, the AR and MR curves will be gentler downward-sloping and shift leftwards, which lead to prices being reduced and improved efficiency.
  - SingTel used to be a monopoly in the telecommunication sector in Singapore but with the deregulation of the sector, more firms (M1 and StarHub) can enter the industry, leading to lower subscription plans and better services such as free-incoming calls for consumers.
  - To encourage greater competition in the public transport industry, the bus contracting model lowers the barriers to entry to the market as the government takes over all bus operating assets and bus infrastructure and will contract out the bus services.
  - Packages tendered out were open to incumbent operators as well as new local and foreign operators to run bus services. Government retains fare revenue and operators are paid to run services to specified performance standards. This ensures bus operators compete to provide consumers with affordable and quality bus ride services. Two new operators – Tower Transit and Go-Ahead, entered the industry in 2016.
  - By enhancing competitiveness of the economy and encouraging privatisation to raise degree of competition in market, firms will not exploit consumers by setting high prices.
- Evaluation

- X-inefficiency may be eliminated as firms would have to seek the most efficient means of production to stay competitive.
- However, in the case of natural monopolist, it would not be appropriate to encourage the entry of more firms as one firm is sufficient to supply for the entire market's demand instead of having two or more firms in the markets which would lead to little iEOS being 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, iEOS are so 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.
  - Essential industries such as Public Utilities Board (PUB) in Singapore - coordinates the supply of electricity, piped gas, and water. As there is the potential to exploit monopoly power, governments tend to nationalise or heavily regulate them.
- Hence, if a monopoly is prevented from forming, there may be wastage in advertising amongst the oligopolistic firms.

<u>Rules and regulation #2: Pro-competition policy</u>

- As regulators, the Singapore government imposes legislations such as Competition Law to promote efficient functioning of Singapore's markets. A pro-competition policy makes it illegal for firms to engage in anti-competitive practices such as price-fixing and abuse of existing market power
  - Price-fixing – where firms formally agree to fix prices jointly so as to avoid competitive pricing and maximise profits by behaving like a single firm, i.e. a monopoly.
    - In 2016, thirteen distributors, which supply more than 90 per cent of fresh chicken products in Singapore, have been accused of engaging in price-fixing. These restricted customers' choices and were aimed at distorting the prices of fresh chicken products here.
    - In 2011, 16 local employment agencies were fined by The Competition Commission of Singapore for colluding to fix the monthly salaries of new Indonesian maids.
  - Abuse of existing market power – where single dominant or large firms act jointly to dominate against smaller firms in the market, and tend to use predatory pricing tactics to force smaller firms out of the market. Once smaller firms exit, they can maximise profits by setting prices jointly.
    - SISTIC was fined for abusing dominant position in the ticketing market in 2010 where it has been rapped for exclusive agreements with 19 partners, including Esplanade and Singapore Indoor Stadium.
  - Government also monitors bus operators' 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.
    - Service standards are set and enforced by the Public Transport Council (PTC) and the Land Transport Authority (LTA) for bus and rail respectively. As rail services are valid for only a finite period and operators have to tender for new licenses, they cannot take license renewals for granted.

  - Divestment – Government could force firms with large market share to sell of segments of their business in order to reduce the market share of these firms.
    - Degree of market dominance will fall and the corresponding problems will be mitigated

- Thus, it is important that government to maintain close monitoring and ensure legislations are enforced.

- Evaluation
  - However, the challenge for governments is to be able to monitor markets closely enough to even discover that these practices are present, or to be able to prove conclusively that there is collusive behaviour and/or abuse of market power.
  - Divestment, however, could force firms to reduce their scale of production and reduce the amount of internal economies of scale reaped – firms end up producing at a higher average cost of production.

<u>Price controls</u>
- AC pricing
  - Where firms with market power are only allowed to charge a price that equals its average cost of production. This will increase production and decrease price.
  - Evaluation
    - The output level is closer to the allocatively efficient output level. However, although the use of AC pricing will reduce allocative inefficiency, it will not achieve allocative efficiency.
    - With zero economic profits, it reduces firms' incentive to cut cost and be efficient. These firms may also not have the willingness and ability to engage in non-pricing strategies such as R&D that could be integral in generating innovation, variety of goods and lead up to dynamic efficiency. This deprives consumers and the society of benefits that can be attained in the future. So with reduced profits, there would be less dynamic efficiency and a fall in consumer welfare in future as innovation and variety of goods are reduced

- MC pricing: Force firms to achieve allocative efficiency (P=MC) by legislating firms to charge at marginal cost of production. This will ensure that the price that consumers pay will be equal to the MC that firms incur to produce the good, achieving allocative efficiency as a result.
  - Evaluation
    - Producing at the allocatively efficient output means that the monopoly is no longer maximising profits. It now makes subnormal profits instead.

<u>Other policies to help firms become more / stay competitive</u>
- Provide R&D grants to help defray some of the firms' R&D costs
- Build up industry clusters so that firms can reap external EOS
- Provide subsidies to key factor inputs that firms need, such as helping firms to pay part of the labour costs
- Help SMEs / smaller firms by providing loan schemes

Evaluative conclusion:
Many governments feel a need to monitor and regulate the behaviour of firms with high market dominance / power primarily because of the potential problems that may arise due to its substantial market power.

However, each policy has its own set of pros and cons; hence it is prudent for the government to consider its options carefully by weighing the relative benefits and costs first. If not done properly, government intervention may create inefficiencies due to administrative costs and lack of information, similar to that of the case of a natural monopoly.

On the whole, among the options available, making the market more contestable is seen as one of the more effective ways of keeping firms with market power on their toes and is increasingly favoured by many governments. This is because it puts pressure on the incumbent to remain competitive by constantly improving efficiency and the quality of products and services as well, without compromising on the incentive and ability to earn profits and thus investing in R&D, as seen in the case of market deregulation in the telecommunication sector and public transport system in Singapore.

Other possible evaluation points:
- **F**easibility of implementation of policies – Can Singapore adopt these policies?
- **E**ffectiveness of policies depends on the nature of the good / service, i.e. price elasticity of demand more / less than 1
- **S**ustainability of policy
- Other considerations: equity
- Possibility of government failure: create inefficiencies due to administrative costs and lack of information

Marking Scheme

L3	Developed analysis of two policies (at least) used to correct for market failure in Singapore due to market dominance with well-explained examples provided. Answer also adequately evaluated each policy. For full L3 marks, answer must have: - Explained how policy 1 works - Evaluation of policy 1 – advantages and / or disadvantages of policy 1 - Explained how policy 2 works - Evaluation of policy 2 – advantages and / or disadvantages of policy 2 To attain minimum L3, answer must contain clear analysis for all 4 parts above.	8 – 10
L2	Under-developed analysis of two policies used to correct for market failure. OR Developed explanation of one policy used to correct for market failure and the policy's advantages and disadvantages OR Developed explanation of the advantages or disadvantages of two policies to correct market failure.	5 – 7
L1	For an answer that shows knowledge of the policies that the Singapore government adopts to correct market failure but contains unexplained statements, containing major conceptual errors.	1 – 4
E3	Well-reasoned judgement that critically evaluates alternative theories, issues, perspectives and policy choices in a summative conclusion.	4 – 5

E2	Largely unexplained, judgements with some attempt at evaluation that is relevant to the question.	2 – 3
E1	Evaluative comments are unexplained or not supported by economic analysis E.g. superficial conclusion based on the analysis by merely repeating or summarising.	1

Question 4

In 2015, the Gross Domestic Product (GDP) of the United States of America (USA) was US$17.95 trillion, and US$292.7 billion for Singapore.

Using economic analysis, explain why some economies have higher GDP than others, and assess whether this necessarily means that standard of living is higher in larger economies. **[25]**

Suggested Answer

Introduction Content and context of essay	The size of an economy can be measured by the size of the country's GDP, which measures the final value of goods and services produced within the geographical boundaries of the country, before depreciation and over a period of one year. Equilibrium GDP is determined by the intersection of a country's Aggregate Demand (AD) and Aggregate Supply (AS). The AD indicates the total demand for goods and services by households, firms, government, and the rest of the world, while the AS reflects the productive capacity and cost of production prevailing in the economy. Differing levels of AD and AS thus result in differing levels of GDP. This could allow us to draw insight on the standard of living of the country, measured by both the quantitative and qualitative aspects of life.
Body How higher levels of AD and AS indicate higher GDP	Because AD and AS intersect each other at a larger level of output, the equilibrium level of GDP would be higher for larger economies. (accompany with diagram)
Reasons for higher levels of AD	Larger economies tend to have a higher level of AD compared to smaller economies. This could be due to: • Higher level of C due to: o Larger population size: with a larger population size, the consumer base is larger. Ceteris paribus, this results in a higher level of consumption expenditure by consumers. Given that the size of USA's population is many times that of Singapore's, this could explain the higher C in USA and hence higher level of AD. • Higher level of I due to: o Higher levels of investor confidence: larger economies may also have higher levels of investments, as firms tend to be more optimistic of business opportunities in larger economies that tend to be more stable. Ceteris paribus, this results in a higher level of investment expenditure by firms. In this case, firms may see USA as a destination where rates of returns to investment may be higher than Singapore, and hence I ad AD is higher in USA. As a result, the components of AD may be larger in some economies.
Reasons for higher levels of AS	Larger economies tend to have a higher level of AS compared to smaller economies. This could be due to: • Higher quantity/quality of factors of production: Since larger economies

	have a larger population size there would be greater abundance of labour. This enables the economy to have a larger productive capacity compared to smaller economies. Ceteris paribus, such an economy would be able to produce a larger level of output. • Better level of technology: Larger economies have a larger number of firms and the likelihood of success in R&D is likely to be greater. As such, the level of technology adopted in production could be higher in larger economies, resulting in lower unit production costs throughout the economy, and production would be at a higher level for a given AD. As a result, the productive capacity could be higher in some economies, and the cost of production could be lower in these economies.
Thesis: Higher GDP level indicate higher standard of living	Higher GDP may indicate higher standard of living because: • Higher GDP → higher levels of production → higher levels of consumption → higher material well-being • Higher GDP → higher level of income → ceteris paribus, this means higher material well-being and non-material (greater access to healthcare facilities, increasing life expectancy) Thus, higher GDP may indicate higher material and non-material well-being, and thus higher standard of living.
Anti-thesis: Higher GDP level may not be sufficient to indicate higher standard of living	However higher GDP may not be sufficient to indicate higher standard of living because: 1) <u>Higher GDP may not reflect higher material well-being:</u> • Production does not equate to consumption → needs to consider components of AD • Need real per capita GDP to account for inflation and population size (can bring in PPP but not required) • Need Gini coefficient to account for income inequality 2) <u>Higher GDP may not reflect higher non-material well-being:</u> • Higher production to generate higher GDP may be at the expense of poorer air quality, that would lower the non-material well-being • Higher GDP without a corresponding rise in productivity may reflect longer working hours and levels of stress, that would lower the non-material well-being Thus, while larger economies may enjoy higher GDP, the standard of living of citizens may not be higher.
Synthesis: Higher GDP is insufficient to draw conclusions on standard of living	Overall, it is not possible to draw conclusions on standard of living just by the GDP figures of the country because: • Does not take into consideration many factors, most notably population size: USA's population is almost 60 times that of Singapore's – as such, GDP per capita would be a better indicator • Need to consider the components of GDP, spread of GDP, cost of living

Marking Scheme

	Knowledge, Application/Understanding and Analysis	
L3	For an answer using appropriate analysis and examples to explain how AD (2 points on 2 components of AD) and AS levels (1 point on either productive capacity or unit production cost) may differ across economies, and how this gives rise to differing GDP across economies. The answer also explains the sufficiency and limitations of GDP to measure standard of living across economies (at least 3 out of the following 4 aspects covered), with a good use of examples for illustration: 1. Explain how larger economies may be seen to enjoy higher material well-being 2. Explain how larger economies may be seen to enjoy higher non-material well-being 3. Explain how GDP does not account for factors like consumption, population size, differing GPL, income distribution and hence larger economies may not enjoy higher material well-being 4. Explain how GDP does not account for factors like stress, air quality, and hence non-material well-being cannot be measured directly using GDP (at best inferred)	15-20 (18)
L2	For an answer that gives a descriptive explanation to explain how AD and AS levels may differ across economies, but there may or may not be explicit linkage to how this gives rise to differing GDP levels. The use of examples may or may not be present. For a one-sided analysis • focusing on how larger economies enjoy higher standard of living, or • focusing on only one of the aspects of standard of living, or • focusing on only the limitations of GDP to reflect standard of living	9-14 (12)
L1	For an answer that shows some basic but unexplained knowledge of the reasons why AD and AS differ. The answer may merely state the components of AD and AS and describe how they may differ. The limitations of GDP may not be considered. The answer is descriptive and makes limited references to the concept of standard of living.	1-8 (5)

E3	For an answer that uses analysis to support an evaluative appraisal of the sufficiency of GDP data to draw conclusions on standard of living, and explains other indicators that might complement/replace the use of GDP to assess standard of living.	4-5
E2	For an answer that makes some attempt at an evaluative appraisal of the sufficiency of GDP data to draw conclusions on standard of living and states other indicators that may be used.	2-3
E1	For an answer that gives an unsupported concluding statement on the sufficiency of GDP data to draw conclusions on standard of living.	1

Question 5

The Monetary Authority of Singapore (MAS) shifted from a modest and gradual appreciation of the Singapore dollar to a zero per cent appreciation stance in a move to support economic growth against a dimmer global economic outlook since its last meeting.

Source: The Straits Times, accessed 1 July 2017

(a) Explain the effects of an appreciation of the Singapore dollar on the Singapore economy. [10]

(b) Discuss whether the shift to a zero per cent appreciation stance is the most appropriate policy to support economic growth against a dimmer global economic outlook. [15]

Part (a)

Suggested Answer

Explain currency appreciation and state that it affects the achievement of macroeconomic goals of the country.	Currency appreciation refers to an increase in the value of one currency in terms of another. When the Singapore dollar appreciates, more foreign currency can be exchanged for the same amount of Singapore dollar. An appreciation of the Singapore dollar can have an impact on the macroeconomic goals of the country.
Explain how appreciation of S$ impacts BOT	When the Singapore dollar appreciates, it will cost more for the foreign sector to buy the Singapore dollar. This raises the price of exports in terms of foreign currency, leading to a decrease in quantity demanded for exports. Assuming that the demand for exports is price elastic, this will translate into a decrease in export revenue for the domestic economy, ceteris paribus. At the same time, it will cost less for the domestic sector to buy foreign currencies. This reduces the price of imports in terms of local currency, leading to a rise in quantity demanded for imports. Assuming the demand of imports is price elastic, import expenditure will increase, ceteris paribus. 1. Impact on BOT depends on extent and pace of appreciation: • 'Modest' appreciation of S$ prevents excessive dampening of export demand • 'Gradual' appreciation allows time for producers and consumers to adjust to the changes in relative prices and prevents sudden changes to export demand 2. Net effect on the BOT depends on whether Marshall-Lerner's condition is satisfied (i.e. price elasticity of demand for exports and imports). If Marshall-Lerner's condition is NOT satisfied, NX will instead increase. 3. Stronger Singapore dollar will help offset some of the loss of price

	competitiveness as exports with high import content will enjoy lower costs of production. Prices of exports may instead decrease if the fall in cost of production (assuming producers in turn pass on the benefits of lower costs to consumers in terms of lower prices) is more than the increase in prices due to currency effect. 4. Singapore's focus on non-price competitiveness of exports limits the impact of an appreciation of SGD on its export competitiveness (overall competitiveness is both price and non-price). Overall, NX may instead increase from an appreciation of the Singapore dollar. ** Accept if students explains how BOT may instead worsen with explanations*
Explain how appreciation of S$ impacts Capital & Financial account	IF appreciation of Singapore dollar is long term, it will ensure returns on foreign investments to retain its value, i.e. prevents foreign exchange losses from long term investments. As a result, this would attract both direct (FDI) and portfolio inflow and hence improve the capital & financial account.
Explain how appreciation of S$ can help achieve price stability	Appreciation of Singapore dollar can help to dampen the impact of imported inflation. 1. Prices of imported final consumer goods and services will decrease directly. 2. Prices of domestically produced goods and services will also fall indirectly, as imported factor prices also decreases Important as Singapore lacks resources and is highly dependent on imported raw materials and final goods.
Explain how the impacts on BOP can help to achieve sustained economic growth as well as employment growth. Account for sustainable and inclusive growth.	Sustained growth • Ensuing price stability enables future revenue and costs projections to be more precise, encouraging both domestic and foreign investments into the country. • The increase in investments and possible favourable impact on NX will increase AD, expand output production, increase real national income (achieve actual growth) and employment via the multiplier process. • Fall in the cost of production (imported factor prices) as well as possible increase in FDI (due to LT appreciation) is also expected to increase AS through the inflow of skills, technological knowledge, and physical capital. • Continued expansion of AD and AS enables Singapore to enjoy sustained growth. Benefits of appreciation of Singapore dollar to attracting FDIs is likely to be broad-based and across most economic sectors. Employment growth generated should therefore take place in most industries.

Marking Scheme

	Knowledge, Application/Understanding and Analysis	
L3	A thorough and well-developed explanation of how an appreciation of the Singapore dollar affects the achievement of balance of trade, growth and inflation. Strong links were made to the Singapore context, for example, answer considers one of the following: • High import content of Singapore's export, such that the fall in import prices leading to a fall in cost of production may offset the increase in export prices • Long-term effects of appreciation on investment and growth (how it increases confidence and stability, leading to more I and growth) • Possibility that Marshall-Lerner condition does not hold due to contractual obligations • Health of external economy • Exchange rate policy of other economies	8 – 10
L2	• An adequate explanation on how an appreciation of the Singapore dollar affects the achievement of macroeconomic goals. Superficial links were made to the Singapore context. Clear references are made to the AD/AS framework.	5 – 7
L1	An undeveloped explanation on how an appreciation of the Singapore dollar affects the internal and external economy. Answer contains conceptual errors or is mostly irrelevant.	1 – 4

Part (b)

Suggested Answer

Introduction Explain implication of dimmer global economic outlook.	• Dimmer global economic outlook results in weaker consumer as well as investor sentiments. • As global consumption levels decrease, demand for Singapore's exports also decrease. • As investor sentiment deteriorates, inward investment into Singapore falls together with the fall in investment levels worldwide. • Deterioration in global economic outlook may also encourage devaluation of currencies by other countries as these countries strive to boost export demand.
Body Explain rationale for **shift to a zero percent appreciation stance:**	• If the Singapore dollar continues to appreciate, it will erode export price competitiveness and discourage FDIs as factor prices will be relatively higher in Singapore dollar compared to countries whose currencies did not appreciate or appreciate less. This can potentially worsen balance of trade. • The slowdown in domestic as well as inward investment (FDIs) will affect Singapore's potential growth. This has implications on the general price level in the long term as demand-pull inflation may result when the economy recovers (when AD finally rises) and the lack of investment presently prevents AS from accommodating to the increase in AD. • Sustained economic growth is also hampered when FDI slows.

	• In the short term, the resulting fall in net exports (fall in NX and I) due to weaker consumer and investor sentiments will have an adverse impact on the internal economy – AD decreases and hence fall in employment and actual growth.
	• Therefore in the short term, Singapore needs to adopt zero percent appreciation stance to preserve price competitiveness of exports and also to prevent higher factor prices (due to currency effect if appreciation continues) from discouraging foreign investments.
	  ○ Zero appreciation is enabled as Singapore is not likely to be facing imported (cost-push) inflation due to dimmer global outlook, so there is no pressure for currency appreciation.
	  ○ Devaluation of currencies by other countries (as a policy response to the dimmer global outlook) gives Singapore additional reason not to continue with the appreciation path for the Singapore dollar in the short term.

Limitations of zero appreciation	1. As Singapore's products generally have high import content, it is possible that some of Singapore's exports may actually have become cheaper had Singapore continued with currency appreciation. This is because cop falls as import factor prices fall with an appreciation. It is possible that for some exports, the fall in cop may outweigh the rise in prices due to the currency effect of an appreciation. The switch to zero appreciation in this case may instead impede the increase in net exports. Overall which is true is an empirical question, so the switch to zero appreciation needs to be carefully monitored and is intended only a short term measure in the light of the dimmer global economic outlook. 2. FDIs are long term in nature and hence respond to more long-term factors, such as preservation of value of their investments in Singapore dollar, favourable supply-side economic infrastructure, political stability, etc., compared to more favourable exchange rate in the ST. 3. Even if net exports increases as Singapore's exports gain (or at least, prevent loss of) price competitiveness from the change in policy stance to zero appreciation, the extent of ΔY due to ΔAD still depends on k, which is small for SG. 4. Zero appreciation does not address root cause of problem – dimmer global economic outlook – which is outside Singapore.
Other disadvantages of zero appreciation	5. Although the chance is quite remote (trading partners are unlikely to feel threatened by Singapore as Singapore is a relatively small exporting country with modest export sales), the switch to a policy of zero appreciation may be equated with devaluation and invite retaliation by Singapore's trading partners.
Explain other policy(ies) to support economic growth: E.g. SS-side policies • Improving on non-price	• Supply-side policies are designed to increase the quality and quantity of factors of production, allow the markets to operate more efficiently, and to influence or directly control prices in the factor / product markets. • Such policies can contribute to boosting export competitiveness, attracting inflows of FDIs and thus supporting economic growth. • In the light of dimmer global outlook, many industries may decline. Supply-side policies can help improve occupational mobility so that

competitiveness of SG's products • Making SG an attractive FDI destination	workers can be deployed to other rising sectors. • Cite 2 measures – specifically how they can help support economic growth, and discuss their limitations. ** Student may explain other policies (need not be supply-side) relevant to the Singapore economy, and how these can support economic growth in the light of a dimmer global economic outlook.*
Evaluative Conclusion	• Dimmer global economic outlook has serious impact the Singapore economy as the country's growth is export and investment driven, relying heavily on the external economy. • Solution to poor consumer and investor sentiments is outside SG as the country can do little to uplift poor global sentiments. • The switch to zero appreciation is appropriate because if the Singapore dollar continues to appreciate while global export and investment demand is falling, it will further erode export price competitiveness in the short term, as well as discourage FDIs as factor prices will be relatively higher in Singapore dollar. • However while the shift to a zero appreciation stance is appropriate and may make the most direct and immediate impact on export prices and short term foreign investment costs, it's effectiveness may also be limited as the dimmer global outlook results from a fall in global purchasing power, and cheaper product options are available in many other countries. • Instead, supply-side measures has the potential to make improvements in both product (increase product desirability and hence demand) and process (reducing cop and hence price). In addition, the dimmer global outlook is only a short-term phenomenon. Supply-side policy has the potential to make structural changes to the economy (composition of AS), and to get the Singapore economy ready to capitalise on upcoming trends when the global economy recovers. • Seen from this perspective, while the shift to a zero appreciation stance is definitely appropriate, the policy alone may not be the most appropriate as it fails to position the Singapore economy to capitalise on the future global recovery. ** Student may discuss other reasons according to the policies they have chosen to compare..*

Marking Scheme

	Knowledge, Application/Understanding and Analysis	
L3	Developed analysis on how a shift to a policy of zero appreciation can support economic growth in the light of a dimmer global economic outlook. Answer also adequately analyses the limitations of zero appreciation, and explain at least one other policy that may be appropriate in promoting growth in the circumstance. Answer is set in the Singapore context. For answers with limited references to the dimmer global environment,	8 – 10

	award max. 8m	
L2	Adequate explanation on the rationale and how the shift to zero appreciation can support economic growth against a dimmer global economic outlook, and its limitations. Answer also explains one other policy that may promote economic growth. Max 6m if answer is mostly descriptive and lacks analysis. For answers that analysis based on a depreciation, with references to Singapore context award max 7m For answers that do not consider an alternative policy, award max 7m For answers that explain 2 policies well, without explanation of limitations, max. 5m	5 – 7
L1	An answer that shows some knowledge of how the shift from appreciation to zero appreciation can support the increase in AD and/or AS, and its limitations. Answer does not make references to economic growth. Answer contains unexplained statements in the main, or conceptual errors.	1 – 4

E3	Well-reasoned judgement that critically assess the appropriateness of zero appreciation against an alternative policy in terms of supporting Singapore's economic growth in the context of a dimmer global economic outlook.	4 – 5
E2	Judgement is made with some attempt at evaluation that is relevant to the context.	2 – 3
E1	An unexplained judgement.	1

Question 6

(a) Explain the factors that will influence a government's decision to open up their economy to globalisation. [10]

(b) Assess the measures adopted by the Singapore government to improve Singapore's global competitiveness. [15]

Part (a)

Suggested Answer

1) Benefits of trade

- Enjoy greater consumer welfare from importing products it may or may not have Comparative Advantage to produce.
  - If country has the comparative advantage in the production of one good, trade enables the consumers to enjoy a larger variety of products that they do not have comparative advantage to produce
- Enable a small and open economy, such as Singapore, to maintain its export-competitiveness
  - Openness enables imports of cheaper raw materials which is crucial for small and open economies which lacks natural resources → maintain/reduce the cost of production → upward sloping AS curve to shift right → lower general price level → cheaper exports (this is a movement along AD, not a shift) → stimulating economic growth, reduce unemployment

2) Benefits of entry of both foreign labour and talents

- Entry of foreign talent → improve the quality of the labour force → shift the productive capacity to the right → enables the country to move into high-tech, capital intensive manufacturing and services.
- Entry of foreign labour → increase the pool of low-wage workers to employ → increase the quantity of the labour force → shift the whole AS to the right
- Entry of foreign talents and labour → help economies cope with the challenges of aging population on labour forces, especially for countries with an ageing workforce and low fertility rates

3) Benefits of entry of foreign funds and FDI

- FDI inflow → increase in investment → increase in AD → multiplier effect → increase in EG, fall in unemployment.
- FDI inflows → transfer of skills and technology → improve labour productivity, total factor productivity → increase in QQT → increase in potential growth
- Increase in AD and LRAS ensure sustainable economic growth

Accept also any explanation on costs influencing the goernment's decision

- The level of competitiveness in the economy in order for the benefits to outweigh the costs of globalisation
- the extent or frequency of shocks which can increase the country's vulnerability to these external factors
- performance of global economy e.g. when the world economy is facing a recession, there will be an adverse impact on a globalised and open economy

Marking Scheme

L1	Answer has many conceptual errors or is very brief	1-4
L2	An under-developed explanation (i.e. lacking examples, some gaps in the theory) Or A well-developed explanation but lacking scope (i.e. only 2 factors)	5-7
L3	At least 2 factors/ benefits of opening up are well-developed, explained and illustrated using real-world examples. Answers that provide more than 2 factors are able to score L3-9 to L3-10.	8-10

Part (b)

Suggested Answer

1) Supply-side policies

- reduction of income and corporate tax → Increase in supply of labour & Investment to increase the productive capacity of the economy
- reduction of corporate tax → firms will have more after tax profits which enable them to invest in R&D, resulting in dynamic efficiency → improve price and non-price competitiveness of exports (with better technology)
    - limitation: falling govt tax revenue – limits expenditure on other areas e.g. welfare. But not a big problem for Singapore as the government can always draw from their reserves to spend or run a short-term budget deficit to support such supply-side policies

- Enforcing strong Intellectual Property Right Law/ environment → increase confidence and willingness for firms to engage in R&D activities → attract skills & knowledge-based FDI to Singapore to carry out R&D, since innovative products & ideas can be patented & protected → help Singapore to develop new comparative advantage
    - limitation: compliance and monitoring costs may be incurred → but for smaller geographical countries like Singapore, this enforcement may be more feasible as compared to larger countries

- Subsidise education → new courses such as Information Technology, School of the Arts (SOTA) etc that specialise in niche areas to groom students so as to compete globally → develop new areas of comparative advantage to boost our export competitiveness
- skills upgrading/training/re-training for those who are structurally unemployed → Government's SPUR Program in providing training & re-training → enable workers to be updated on latest developments and new skills → increase quality of labour → improves both price and non-price competitiveness of our exports, improves our attractivess as an investment location for FDI
    - limitation: strain on govt budget → in S'pore, a co-payment system between firms and govt is instead adopted → mitigates the drain on the fiscal resources. However, this is an important area for our long-term growth and Singapore government can always draw from our reserves or run short-term budget deficit to support skill upgrading

- Immigration policy - openness to foreign talent → This will supplement our limited pool of aging population in terms of skilled labour → increasing our attractives to FDI
- Immigration policy - Openness to Unskilled labour e.g. domestic maids & construction workers will help to lower wage rate of blue collar workers as well as supplement shortages in manual workers → help to reduce cost of production in Singapore

- Limitation: may pose a strain on existing infrastructure as seen in the congestion situations in the public transport networks

2) Free trade policy

- Free trade policy introduce greater foreign competition → Possible erosion of market power for domestic firms → incentivises firms to engage in both price and non-price competition → more competitive prices and better quality/variety of products → increase in consumers welfare
- FTA → Improve global competitiveness as price of exports will be more competitive since no tariff is imposed.
  - Limitation: vulnerable to external shocks when the economy is so open

3) Exchange rate policy

- Maintaining export competitiveness using exchange rate policy → due to our import reliance, Singapore has been adopting a policy of gradual appreciation → manage the increase in cost of prodution
  - Limitation: an appreciation will hurt our export price competitiveness

Conclusion

- Supply-side policies take a long time to take effect; thus other policies like exchange rate policy or trade policy is needed to raise our competitiveness in the short run
- Comparison of measures e.g. pursuit of global competitiveness may entail trade-offs in the achievement of other economic goals if it is pursued predominantly through demand-management policies
- E.g. the pursuit of global competitiveness allows the achievement of economic growth and balance of payments surplus but may lead to greater income inequality and structural unemployment.
- Prioritising the importance of global competitiveness depending on the current economic situation e.g. the focus for an already competitive economy may be ensuring a lower income gap in its society through active redistribution policies

Marking Scheme

L1	Answer with many conceptual errors or is very brief	1-4
L2	An under-developed explanation (i.e. lack of depth/clarity in explanation, lacking use of examples) Answers that do not address the questions but linked to the achievement of macroeconomic goals with strong AD/AS analysis – Cap L2-5.	5-7
L3	Answer is well-developed and covers at least 2 policy measures [accept even if the 2 measures are within the same policy], with good use of SG examples	8-10
E1	An unsupported judgement of the relative effectiveness/appropriateness of the measures	1
E2	Judgment on the relative effectiveness/appropriateness of the measures is supported by at least 1 clearly presented argument and illustrated with an example.	2-3
E3	Judgment on the relative effectiveness/appropriateness of the measures is well supported by clearly presented arguments with illustrations using examples.	4-5