

(a) (i)	Describe the trend in the government budget balance in China between 2003 and 2006.	[2]
	<p>Budget in deficit [1m] but deficit is declining [1m].</p> <p><i>Note: Comments such as 'the budget is negative and rising at a decreasing rate' were awarded no marks by Cambridge because the negative sign was given in the data and simply stating this did not suggest that the candidate had any grasp of the significance of the figures in any economics sense.</i></p>	
(ii)	Compare this trend with the changes in the Russian government's budget balance in the same period.	[2]
	Russia's budget, <u>in contrast</u> , was in surplus [1m]. Budget surplus was also declining [1m].	
(b) (i)	What is the difference between real GDP growth and nominal GDP growth?	[1]
	Real GDP growth is the percentage change in real output whereby the effects of price changes have been removed, while nominal GDP growth includes changes in real output and prices.	
(ii)	Identify the economy which is projected to have the highest growth in nominal GDP in 2006.	[1]
	<p>Russia.</p> <p><i>Note: It is not China – to get approximation of nominal growth, a simple math is to add growth in real GDP and rate of inflation.</i></p>	
(c)	With reference to the data where appropriate, explain the factors that might cause the projected changes in Brazil's current account balance shown in Table 2.	[6]
	<p><b>Identify that current account surplus for Brazil projected to decline.</b></p> <p><u>Possible reason 1a – Appreciation of Brazilian real <math>\uparrow M</math> &amp; <math>\downarrow X</math></u></p> <ul style="list-style-type: none"> <li>This would cause exports to be relatively more expensive in foreign currency and imports to be relatively cheaper in domestic currency.</li> <li>Using PEDx &amp; PEDm, explain why BOT would fall, accounting for the decline in current account surplus.</li> </ul> <p>OR (Similar but different perspective)</p> <p><u>Possible reason 1b – Depreciation of Chinese Yuan</u></p> <ul style="list-style-type: none"> <li>This would make Brazil's exports less price competitive. This is especially important as much of Brazil's exports go to China. The Chinese consumers may switch to domestic products instead.</li> <li>Also, Chinese imports would now be relatively cheaper for the Brazilians.</li> <li>Assuming ML condition holds, BOT would fall, accounting for the decline in current account surplus.</li> </ul> <p><u>Possible reason 2 – Rise in incomes of Brazilians + Industrialisation - <math>\uparrow M</math></u></p> <ul style="list-style-type: none"> <li>Increase affluence of Brazilians would cause them to purchase more consumer imports from the rest of the world. DD for such goods is income-elastic as they are believed to be of better quality and the rate of satisfaction is higher.</li> <li>Increase in investments could also cause the increase in imports of capital good to aid in production.</li> <li>Increases in imports could account for the fall in current account balance surplus.</li> </ul> <p><u>Possible reason 3 – <b>Relatively</b> (important to mention is the relative rather than absolute) higher inflation rates in Brazil compared to China</u></p> <ul style="list-style-type: none"> <li>The higher inflation rate in Brazil makes goods &amp; services relatively more expensive for the Chinese consumers. It also makes Chinese goods relatively cheaper than domestic products for the Brazilian consumers.</li> <li>Explain why BOT would fall, accounting for the decline in current account surplus.</li> </ul> <p><i>Note: According to Cambridge, one well explained factor can score up to 3m.</i></p>	

(d)	Discuss whether the data provided are sufficient to assess changes in the standard of living in these economies over the period.	[8]
	<p><b>Introduction</b></p> <ul style="list-style-type: none"> <li>Define Standard of living.</li> <li>I will be discussing whether the data provided are sufficient to assess changes in the standard of living in these economies over the period.</li> </ul> <p><b>Body</b></p> <p><b>Material SOL</b></p> <p><b>1. Real GDP growth</b></p> <ul style="list-style-type: none"> <li>Indication of SOL through real GDP growth as increasing real output is a good indication that entire country's SOL is improving as more real output is produced implies more output is available for consumption.</li> <li>However, insufficient to just base it on real GDP growth figures – <b>need to take into consideration population growth as well which is not given in the data.</b></li> <li>Real GDP per capita is a better indicator for whether the SOL of the average person in the country has increased.</li> <li>This is especially true for countries such as Brazil, where population growth may be higher than real GDP growth, reducing SOL of the average Brazilian.</li> </ul> <p><b>2. Inflation rates</b></p> <ul style="list-style-type: none"> <li>Indicates that those whose nominal income does not increase together with inflation are worse off than others, meaning that SOL of average person may not have increased.</li> <li><b>Russia has the highest inflation rates, double-digit figures for the entire period. It indicates higher cost of living over time and a fall in purchasing power. It may also indicate instability in the economy.</b></li> </ul> <p><b>3. Income disparity; Gini coefficient</b></p> <ul style="list-style-type: none"> <li>Overall growth in the economy does not indicate who benefits the most from the growth.</li> <li>Higher economic growth, especially in the case of China, may benefit those in the urban areas of Beijing and Shanghai.</li> <li>Those in the rural area may not benefit as much, leading to greater income disparity.</li> <li>This would not indicate that SOL of the average person has increased.</li> </ul> <p><b>4. Composition of GDP</b></p> <ul style="list-style-type: none"> <li>It is not clear what has contributed most to the GDP growth registered.</li> <li>Much of Russia's growth could have been due to high exports of raw material such as hydrocarbons and metals which does not contribute to an increase in SOL in terms of more consumer goods and service. Though ultimately, people working in such export markets will probably experience a rise in income.</li> </ul> <p><b>Non-material SOL</b></p> <p><b>1. Effects of industrialisation</b></p> <ul style="list-style-type: none"> <li>Although industrialisation leads to higher growth, it may be at the expense of higher pollution levels as in the case of China.</li> <li>If the industrialisation also leads to higher stress levels for the people in China, living standards would be significantly lower for the average person.</li> </ul> <p><b>2. Amount of leisure time</b></p> <ul style="list-style-type: none"> <li>The higher level of GDP may come about due to a rise in average working hours, which would lead to lower living standards due to the higher stress levels and reduced leisure time.</li> </ul> <p><b>Conclusion</b></p> <p>To better assess the SOL of the economies, more data such as population growth, the composition of GDP and Gini coefficient should be provided. Some non-material indicators will also be useful.</p>	

(e)	Discuss and compare the likely impact of an unexpected decline in world economic activity on any two of these economies.	[10]
	<p><b>Introduction</b></p> <ul style="list-style-type: none"> <li>Clarify that an unexpected decline in world economic activity is an unanticipated fall in global demand for exports and FDI.</li> <li>I shall be discussing and comparing the likely impact of an unexpected decline in world economic activity on China's and Brazil's (State your choice of any two economies) macroeconomic goals of economic growth, low unemployment, low inflation and healthy balance of payment.</li> </ul> <p><b>Body</b></p> <ul style="list-style-type: none"> <li>Exports of countries may fall, due to the lack of demand from the rest of the world.</li> <li>Extent of fall in demand for exports depends on the YED value of the goods sold <ul style="list-style-type: none"> <li>China may see a less than proportionate fall in exports as its demand is rather income inelastic (textiles, low-end manufacturing goods).</li> <li>While demand for Brazil's exports (such as high quality coffee beans) is income elastic, indicating that exports may fall more significantly.</li> </ul> </li> <li>With a fall in world economic activity, inflow of FDIs to both countries may be decreased.</li> <li>Extent of decrease depends on the attractiveness of the economies to the global investors. It also depends on the business expectations of the investors. <ul style="list-style-type: none"> <li>China may see a smaller fall in FDIs compared to Brazil, considering its robust domestic economy which may continue to propel growth for China.</li> </ul> </li> </ul> <p><b>Effect on macro indicators for China &amp; Brazil</b></p> <p><b>1. National income</b></p> <ul style="list-style-type: none"> <li>With a fall in I and X, national incomes in both countries will fall via the multiplier process. <ul style="list-style-type: none"> <li>Use the <math>Y=AE</math> or AD/AS framework to show how this would happen.</li> </ul> </li> <li>Extent of fall in national income depends on the size of the multiplier and on the economy's reliance on international trade. <ul style="list-style-type: none"> <li>Given China's large domestic market, the effect of a fall in exports may not affect national income as much as Brazil.</li> </ul> </li> <li>Potential growth of the economies may be affected adversely with the fall in investments <ul style="list-style-type: none"> <li>Again, extent of slow down in potential growth will be dependent on how significant I is a component of national income</li> </ul> </li> </ul> <p><b>2. Unemployment</b></p> <ul style="list-style-type: none"> <li>Given the fall in national income, the level of unemployment will rise in the economy.</li> <li>When the demand for exports fall, companies may retrench workers to maintain profit margin, leading to cyclical unemployment.</li> </ul> <p><b>3. Inflation</b></p> <p>With the fall in AD, the general price levels in the economy may fall</p> <p><b>4. BOP</b></p> <p>With the fall in exports and FDI for both countries, the current and financial accounts will be worsened and BOP will deteriorate.</p> <p><b>Conclusion</b></p> <p>Impact of decline in world economic activity likely to be greater for:  China as the extract maintains that Brazil is driven by domestic consumption  OR  Brazil as the depreciation of Chinese Yuan would help to maintain export price competitiveness and encourage more exports instead.</p>	

(a)	Compare the change in retail sales in Singapore by type of outlet between 2000 and 2004.	[2]																																									
	<p><b>Suggested answer:</b> Similarity: Retail sales in Singapore increased for all 3 categories between 2000 and 2004. [1m]</p> <p>Difference [1m]: Retail sales for Supermarkets increased at the fastest rate by about 23% while that of Department Stores at about 4%. OR Retail sales increased the most for Supermarkets and the least for Department stores.</p> <p><i>*any of the 2 above will give candidate full 2marks</i></p> <p><i>Note: Though supermarket stores experienced the highest increase, it does not mean the sales is the highest. We need absolute figures to be sure.</i></p> <p><b>Table 5: Singapore retail sector: retail sales index for selected types of outlet</b></p> <table><tr><th rowspan="2">Type of outlet</th><th colspan="5">Index at Current Prices (1997=100)</th></tr><tr><th>2000</th><th>2001</th><th>2002</th><th>2003</th><th>2004</th></tr><tr><td>Department stores</td><td>104.3</td><td>99.9</td><td>100.4</td><td>99.6</td><td>108.4</td></tr><tr><td>Supermarkets</td><td>123.0</td><td>138.3</td><td>147.1</td><td>158.5</td><td>151.1</td></tr><tr><td>Provision and sundry shops</td><td>100.6</td><td>104.6</td><td>109.6</td><td>113.8</td><td>123.2</td></tr><tr><td>Total retail sales</td><td>128.4</td><td>133.1</td><td>129.8</td><td>140.9</td><td>158.6</td></tr></table> <p>Source: www.singstat.gov.sg</p> <p><b>Calculations:</b></p> <table><tr><td>Department stores</td><td><math>108.4-104.3/104.3*100 = 3.93 \approx 4</math></td></tr><tr><td>Supermarkets</td><td><math>151.1 - 123.0/123*100 = 22.85 \approx 23</math></td></tr><tr><td>Provision and sundry shops</td><td><math>123.2 - 100.6/100.6*100 = 22.47 \approx 22</math></td></tr></table> <p><i>Note: The base year is 1997 and not 2000. We need to perform the above calculations to see the % change from 2000 to 2004.</i></p>	Type of outlet	Index at Current Prices (1997=100)					2000	2001	2002	2003	2004	Department stores	104.3	99.9	100.4	99.6	108.4	Supermarkets	123.0	138.3	147.1	158.5	151.1	Provision and sundry shops	100.6	104.6	109.6	113.8	123.2	Total retail sales	128.4	133.1	129.8	140.9	158.6	Department stores	$108.4-104.3/104.3*100 = 3.93 \approx 4$	Supermarkets	$151.1 - 123.0/123*100 = 22.85 \approx 23$	Provision and sundry shops	$123.2 - 100.6/100.6*100 = 22.47 \approx 22$	
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(b)	Explain 2 reasons why supermarkets are growing so quickly in China.	[4]																																									
	<p><u>1. Rising incomes</u> Increase demand (income factor) - The increase in incomes of the middle class in urban areas, allowing them to purchase more imported goods from the supermarkets.</p> <p><u>2. Lower trade barriers with entry into WTO</u> Increase demand (taste &amp; preference) - With lower trade barriers between China and her trading partners, imports are more readily available on the shelves of supermarkets, making them attractive places for the consumers to shop.</p> <p><u>3. Govt intervention</u> Increase demand (no substitutes) - The Chinese government encourages supermarkets by shutting down street markets, and thus inevitably forcing consumers to shop at supermarkets.</p> <p><i>*1m for the identification of a factor and a further mark for an explanation</i></p>																																										
(c)(i)	Describe the type of market structure operating in the UK grocery sector in 2004.	[2]																																									
	<p>The market structure in the UK grocery sector would be an oligopoly [1m] because four supermarkets dominated the market with <math>MCR_4 = 74.2\%</math>. [1m]</p> <p><i>Note: To justify whether the market structure is indeed oligopoly and once a table of market shares</i></p>																																										

	<b>by different firms is given, it is a MUST to calculate MCR. Must link MCR to a few dominant firms.</b>	
<b>(c)(ii)</b>	<b>Explain how the firms in this market might compete against each other.</b>	<b>[4]</b>
	<p><b>Suggested answers:</b></p> <ul style="list-style-type: none"> <li>• 2m for explaining why firms will use non-price competition rather than price due to mutual interdependence (many candidates left out this point)</li> <li>• 2m for elaborating on non-price competition</li> </ul> <p>Firms in this market would choose to engage in non-price competition due to <b>mutual interdependence</b>. There are only a few firms under oligopolistic market structure. As a result, each firm has to take into account the actions/reactions of other firms. If an oligopoly engages in price competition, other firms may respond by changing their prices as well and result in lower revenue for all. Hence, oligopolies will more likely engage in non-price competition – product promotion and product development.</p> <ul style="list-style-type: none"> <li>- They would compete through <u>advertising</u> in the media to create increased brand recognition for their supermarket.</li> <li>- They would also attract new clients and retain existing clients through <u>special promotions</u> and marketing strategies by having lucky draws or having a system that recognize <u>customer loyalty</u> so as to <b>increase demand for their products</b>.</li> <li>- By offering services that are <u>unique</u> to their consumer base such as free home deliveries for senior citizens, phone-in or online orders, they would also <b>ensure that demand for their products are more price inelastic</b>.</li> </ul>	
<b>(d)</b>	<b>Discuss the policy of divestment in the case of Tesco explaining clearly how this might affect consumer welfare.</b>	<b>[8]</b>
	<p><b>Introduction</b></p> <ul style="list-style-type: none"> <li>- The policy of divestment arose because there is increasing concentration of market power for supermarkets as they start operating small convenience stores, leading to the closure of many independent smaller stores.</li> <li>- In addition new firms may not be able to enter the market as the current large supermarket chains have a cost advantage over independent convenience stores.</li> <li>- I shall be discussing how the policy of divestment in the case of Tesco explaining clearly how this might affect consumer welfare.</li> </ul> <p><b>Body</b></p> <div style="display: flex; justify-content: space-between;"> <div style="width: 48%;"> <p><b><u>Thesis – Divestment in the case of Tesco will have a positive impact on consumer welfare</u></b>  Explain the gain in consumer surplus when more competition is introduced (using a diagram comparing PC vs monopoly)</p> <p>Price/revenue/costs (\$)</p> <p>MC<sub>M</sub> = SS-</p> <p>P<sub>M</sub></p> <p>P<sub>PC</sub></p> <p>b</p> <p>0</p> <p>Q<sub>PC</sub></p> <p>MR</p> <p>AR</p> <p>output</p> <ul style="list-style-type: none"> <li>- Comparing the price and output of a highly competitive firm to one with monopoly power, price is lower since <math>P_{PC} &lt; P_M</math> and output is higher since <math>Q_{PC} &gt; Q_M</math>.</li> <li>- Area <math>P_M P_{PC} ab</math> is gain in consumer surplus when more competition is encouraged</li> </ul> </div> <div style="width: 48%;"> <p><b><u>Antithesis – Divestment in the case of Tesco will have a negative impact on consumer welfare</u></b></p> <ul style="list-style-type: none"> <li>- By setting up convenience stores in these areas, the larger supermarket chains have a cost advantage over independent convenience stores due to their ability to reap substantial EOS.</li> <li>- The divestment for Tesco (selling off of their convenience stores) actually will result in loss in EOS.</li> <li>- This may then lead to higher prices (<math>P_1</math> to <math>P_2</math>) due to increase in cost of production for Tesco when it could not enjoy the same amount of EOS</li> <li>- Fall in EOS reaped from <math>Q_1</math> to <math>Q_2</math></li> </ul> <p>Price/revenue/costs (\$)</p> <p>SS<sub>PC</sub></p> <p>MC<sub>m</sub></p> <p>P<sub>2</sub></p> <p>P<sub>1</sub></p> <p>0</p> <p>Q<sub>2</sub> Q<sub>1</sub></p> <p>MR</p> <p>AR</p> <p>output</p> </div> </div>	

	<p><b>Note: In the explanation, make it clear that the PC model is used only as a theoretical benchmark. It does not represent the real supermarket. The purpose is to highlight the benefits of introducing more competition to a market that is dominated by either one or few sellers. It does not imply that the number of sellers has got to be small and many. Thus, instead of saying if there is perfect competition, it is best to say if there is "more competition" or "if the market is more competitive".</b></p>	Fall in profits for Tesco after divestment could also lead to a fall in R&D expenditure, leading to a loss in consumer welfare.			
	<p><b><u>Stand (include LR analysis)</u></b></p> <ul style="list-style-type: none"><li>- In a bid to regain market share after divestment, Tesco could use more non-price competition to gain consumers through the use informative advertising or by improving the facilities of its current outlets, thus increasing consumer welfare.</li><li>- However, if it decides instead to use competition like persuasive advertising, then further misallocation of resources may arise as consumers are buying from Tesco merely for its brand.</li></ul>				
	L3 (6-8)	Excellent explanation with economic analysis using diagrams where appropriate. Balance view and synthesis.			
	L2 (4-5)	show understanding of divestment and will explain why it could either raise or lower consumer welfare			
	L1 (1-3)	show understanding of divestment but will only explain one possible outcome in terms of consumer welfare			
(e)	<p><b>In the light of the data provided, if you were an economic advisor to the Singapore government, would you recommend that it should follow the example of the Chinese authorities and encourage supermarket development? Justify your answer.</b></p>			<b>[10]</b>	
	<p><b>Note: There is not much evidence in the case material. This question requires certain own knowledge to do well.</b></p>				
	State	Introduction(clarify what the China government is doing & the criteria for assessing whether Singapore should follow suit) The China government is encouraging supermarketisation and closing down traditional street markets. Whether the Singapore government should follow suit would depend on the characteristics & economic situation in Singapore.			
		Advantages of developing supermarkets & China's rationale	Compare it with the S'pore situation		
	Explain Exemplify With Data	<ul style="list-style-type: none"><li>- The Chinese authorities encouraged supermarketisation because the <i>existing retail system was inefficient and inadequate</i> for the development of the economy.</li><li>- Growth and modernization of the retail market also lacked direction as the ownership of these small shops was largely in the hands of individual families.</li></ul>	<ul style="list-style-type: none"><li>- The existing situation for Singapore is quite different from that of China's.</li><li>- Singapore is made up of a very small area (647.5 sq km-you need not know the exact figures) with a good network of road for distribution of goods required in the retail market.</li><li>- Currently, Singapore has 3 dominant local supermarket chains, namely NTUC, Cold Storage and Shop N Save co-existing with wet markets stores (which complement the supermarkets) and a dwindling number of neighbourhood provision shops.</li></ul>		
		<ul style="list-style-type: none"><li>- One solution to these problems is to replace them with a few large supermarkets.</li></ul>	<ul style="list-style-type: none"><li>- The number of independently-owned neighbourhood provision shops has been declining over the years.</li></ul>		

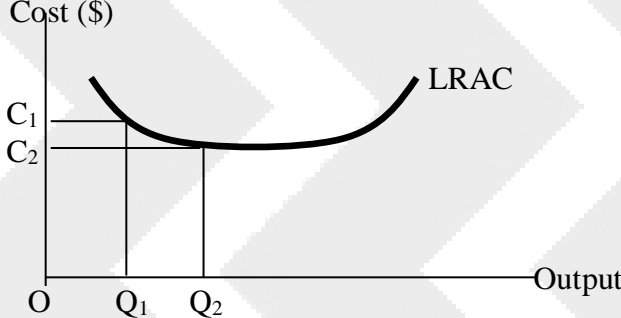


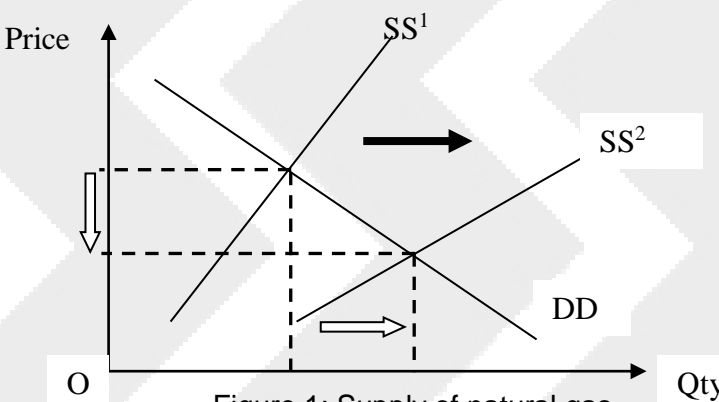
		<ul style="list-style-type: none"> <li>- Such supermarkets would also be in a better position to handle the paperwork and the distribution network for imports =&gt; can reap EOS</li> </ul>	<ul style="list-style-type: none"> <li>- In fact, many shop-keepers have opted to be a part of a franchise such as Econ Minimart to enjoy more EOS since promotions of sales and advertising is done by the franchiser.</li> </ul>
		One other reason why China has consolidated the supermarket industry is to gain comparative advantage in that industry to allow those firms to compete in world market.	May not be the case in Singapore as supermarkets are more to serve the domestic market.
	<b>Explain with economic analysis + using own knowledge</b>	<b>Other disadvantages of further supermarket development in Singapore</b> <ul style="list-style-type: none"> <li>- For Singaporeans, the decline of neighbourhood shops would mean <u>fewer choices</u> for consumers.</li> <li>- The supermarket way of running a convenience store would rule out possibility of <u>special request</u> that could be accommodated by an owner who knows the client and is in a position to act on his request e.g. to bring in a brand of a commodity (e.g. a special brand of dog food) in small quantity.</li> </ul> <p><b>Critical comments:</b> The cost savings between supermarkets and neighbourhood shops are still not substantial since there is more marketing EOS rather than technical EOS. Consumers are willing to pay slightly more in neighbourhood shops for the convenience they offer. So, supermarketism actually reduces consumers' welfare.</p> <p><b>Note: Saucer shaped LRAC for co-existence of big and small firms.</b></p>	
	<b>Stand</b>	<b>Synthesis/Stand</b> <ul style="list-style-type: none"> <li>- From Table 5, we can see both supermarkets and provision and sundry shops increased healthily by 22-23% even when there is no government intervention.</li> <li>- As the economic advisor for Singapore, I would say that Singapore has different needs from those of China in terms of supermarket development and should not follow suit.</li> <li>- I would recommend a non-intervention approach, allowing both the large firms and the small firms to operate simultaneously.</li> <li>- Ultimately, in the long run, market forces would allow only the fittest firm that is most cost efficient to survive.</li> <li>- The neighbourhood provision shops that survived would be those that have a niche market where the demand curve is more price inelastic while the supermarkets will continue to compete among themselves to be more cost efficient.</li> <li>- Nonetheless, if the supermarkets indeed become too monopolistic and there are evidences of consumer exploitation, there may be a need to follow the UK model of divestment instead.</li> </ul>	
	L3 (6-8)	Provide a balanced view and include both the advantages and disadvantages of further supermarket development with economic analysis. These will be considered in the context of the Singapore economy.	
	L2 (4-5)	Provide both advantages and disadvantages but then to be lopsided. Explanation still lacks economic analysis.	
	L1 (1-3)	One-sided and discuss only the advantages or disadvantages of supermarket development and/or there will be limited reference to the Singapore economy. This level may be characterized by a no of descriptive points drawn from the data.	
	E2 (2)	make a recommendation based upon a sound examination of the costs and benefits for the Singapore economy of further supermarket development. Expect comparisons between Singapore and China and UK.	
	E1 (1)	make a recommendation but only the costs and benefits are considered. There may be points made that are not based upon evidence. There will be only limited comparison with China.	





(a)	(i)	<b>Compare the changes in the price of natural gas and changes in the price of electricity over the period between 1996 and the 2<sup>nd</sup> quarter of 2006.</b>	<b>[2]</b>
		<p>Both the price of natural gas and price of electricity rose between 1996 and the 2<sup>nd</sup> quarter of 2006.</p> <p>However, the price of natural gas rose approximately by 62.8% which is significantly higher than the rise in price of electricity (approximately 24%) during the stated period.</p> <p>Note: Index number is used to compare changes in price of the same item over time e.g. in table 1, price of natural gas has risen 62.8% over the period.</p> <p>It cannot be used to compare price changes of different items over time ie cannot compare change in price of natural gas with electricity!</p>	
(a)	(ii)	<b>The change in the price of which fuel in that period has had the greater impact upon the cost of living? Explain your answer.</b>	<b>[3]</b>
		<p>The change in the price of natural gas over the period is the highest of all the types of fuel with the exception of the category, 'Oil and Other Fuels'.</p> <p>The impact on cost of living depends on the component weights of in the Retail Price Index and the change in the prices for types of fuel. Natural gas has almost the same component weights as electricity, but since the percentage change in prices for natural gas is more significant than that of electricity, the impact on cost of living would be much higher</p> <p>For example, from 1996 to 2006 Q2, the change in percentage of cost of living due to natural gas would be <math>14/1000 \times 62.8\% = 0.88\%</math>, while electricity would be <math>15/1000 \times 24\% = 0.36\%</math></p>	

(b)	Explain an economic advantage that SSE might have lost through its decision not to launch a takeover bid in November 2006.	[2]
	<p>One economic advantage that SSE might have if it was successful in launching a takeover bid for rival company Scottish Power is the ability to gain from <b>greater economies of scale</b> which result in lowering of average costs in the long run. [1]</p> <p>A successful takeover would enable the firm to expand its output. Assuming that the firm is operating under decreasing portion of the long run average cost curve, it will be able to enjoy economies of scale as illustrated below.</p>  <p>Internal economies of scale (EOS) refer to cost savings that a firm can enjoy as it expands. As the firm increases its output from <math>OQ_1</math> to <math>OQ_2</math>, the average production cost will fall, i.e. from <math>OC_1</math> to <math>OC_2</math>. The cost savings can arise from many sources such as technical economies, managerial economies, and marketing economies. As the firm's unit costs fall, it can pass cost savings to consumers in terms of lower prices and thus gaining a larger market share and raising the size of profit.[1]</p> <p>Or</p> <p>The revenue advantages can be derived as a result of increased market share provides a larger consumer base.</p>	

(c)	<b>Compare the supply curves of natural gas for the UK in March 2006 and October 2006, and explain any changes that have occurred.</b>	<b>[5]</b>
	<p>Between March and October 2006 it could be reasoned that the supply of natural gas to the British market had increased because of the opening of a new pipeline from Norway. This would result in a shift in the supply curve of natural gas to the right as shown in Figure 1, the supply curve of natural gas shifted from <math>SS^1</math> to <math>SS^2</math>.</p> <p>In addition, the new pipeline made it possible for the quantity of gas supplied to be more responsive to changes in price, so that the supply curve had become more elastic due to higher capacity in pipeline supply of natural gas.</p> <p>Referring to Figure 1, the supply of natural gas for the UK in Oct 2006 is represented by supply curve <math>SS^2</math> which is relatively more price elastic than the supply in Mar 2006 represented by supply curve (<math>SS^1</math>).</p>  <p>The graph shows a coordinate system with 'Price' on the vertical axis and 'Qty' on the horizontal axis. The origin is labeled 'O'. A downward-sloping demand curve is labeled 'DD'. Two upward-sloping supply curves are shown: <math>SS^1</math> (steeper) and <math>SS^2</math> (flatter). A thick black arrow points from <math>SS^1</math> to <math>SS^2</math>, indicating a rightward shift. Dashed lines from the initial equilibrium point (intersection of <math>SS^1</math> and <math>DD</math>) lead to the axes, showing a higher price and lower quantity. Dashed lines from the new equilibrium point (intersection of <math>SS^2</math> and <math>DD</math>) lead to the axes, showing a lower price and higher quantity. A thin black arrow points down on the Price axis, and a thin black arrow points right on the Qty axis, indicating the direction of change.</p> <p>Figure 1: Supply of natural gas</p> <p>The rightward shift in SS curve results in fall in equilibrium price and increase in equilibrium quantity.</p>	

(d)	Discuss what might happen to the demand for electricity as a result of the price changes identified in the case study.	[8]
	<p>As mentioned in the case material, natural gas and electricity are the most popular domestic fuels in the UK. Thus, this accounts for the relatively larger weights assigned to natural gas and electricity shown in Table 2.</p> <p>Note: Weight is ascribed to show the relative importance of an item (e.g. in terms of popularity in usage).</p> <p>In view of the higher price of natural gas, the impact on demand for electricity can be examined by considering the size of the value of cross elasticity of demand for electricity with respect to the price of natural gas.</p> <p>Cross elasticity of demand for electricity measures the degree of consumers' responsiveness in demand for electricity with respect to a change in the price of natural gas.</p> <p>It was highlighted in extract 1, paragraph 2, many users of gas switched to alternative fuels when price of gas rose significantly. Coupled with a relatively large weight assigned to electricity (refer to Table 2), we can infer from the given data that natural gas and electricity are <i>close substitutes</i>. Hence, we could expect the value of cross elasticity of demand for electricity with respect to the price of natural gas to be a positive and large value. For example, when British Gas raised prices by 36% in March 2006, we can expect that the demand for electricity to rise by more than proportionately.</p> <p>Next, Table 1 also shows that price of electricity has also increased by about 24% from 1996 to 2<sup>nd</sup> quarter of 2006. The impact of a rise in price of electricity on the demand for electricity can be examined by the value of price elasticity of demand for electricity. It measures the degree of consumers' responsiveness in quantity demand of electricity to a change in the price of electricity. Since electricity can be considered as a necessity and there are few close substitutes, the <i>demand for electricity is likely to be price inelastic</i>. Hence, when price of electricity rose by 24%, the quantity demanded for electricity is expected to fall by less than proportionately.</p> <p>Nevertheless, consumers may not readily switch to alternative fuel when the price of one fuel increases. We need to consider several factors that influence the extent of the response of the demand for electricity as the price of electricity and the price of natural gas changed. For example, the fact that customers are on long-term contracts would mean that it would be some time before they could switch to alternative types of fuel. In addition the cost of switching from one fuel to another might be high and hence, this would deter consumers from switching to alternative fuel.</p> <p>(N.B. You may think in terms of contracts for handphones and high cost associated to make a switch to another operator)</p>	

(e)	Discuss whether the market for fuel in the UK displays economic efficiency or whether it provides an example of market failure.	[10]
	<p>One of government's microeconomic goals is to attain economic efficiency. <i>Economic efficiency</i> exists when firms are productively efficient and allocatively efficient. When there is allocative efficiency, <math>P = MC</math>, and firms are productively efficient if the good is producing on the LRAC. (note: all points on the LRAC are productively efficient i.e. they are the lowest cost possible for the production of that output). Productive efficiency occurs where production is at the lowest point on a firm's lowest average cost curve.</p> <p>Efficient allocation of resources occurs when firms are supplying the right goods, in the right quantity and at the right price to consumers i.e. <math>P = MC</math>. Welfare cannot be further increased by reallocating resources. Hence, allocative efficiency is achieved when society is producing an appropriate bundle of goods relative to consumer preference.</p> <p>Markets are seen to be failing when allocation of resources does not respond to price signals and the output level is less than the socially ideal level. This occurs when the free market mechanism does not lead to an optimal allocation of resources e.g. <math>P</math> is not equal to <math>MC</math>. In other words, firms operate in an imperfectly competitive environment. Referring to Figure 2, when the output level in the fuel market is at a level where its price is greater than <math>MC</math>, it means that there is under-allocation of resources in the production of fuel. The production of fuel should be increased by diverting some resources away from other industries to produce more of the good. When <math>P = MC</math>, there is optimum level of production. However, when <math>P &gt; MC</math>, production is at less than optimal output, which, means that consumers would be prepared to pay more for additional units than they cost to produce.</p> <p>This is an example of the <i>large profits</i> of the fuel companies. As seen in Extract 3, SSE announced that consumers' energy bills will rise in January 2007 despite the fall in prices of natural gas leading to huge profits. This illustrates a case of a monopoly power that gives rise to market failure and allocative inefficiency since <math>P &gt; MC</math>.</p> <p>With reference to the case material, there are also many examples of market failure in the fuel market. One example is the fact that resource allocation does not respond to price signals, as shown by the <i>poor distribution of natural gas</i> through the Netherlands pipeline, despite the higher prices in the UK market. The source of this type of market failure is geographical immobility in factors of production.</p> <p>In terms of productive efficiency, deregulation aims at lowering cost of providing energy. There is some evidence from the data in Extract 2 that UK suppliers tried to obtain more supplies of natural gas from overseas. It may have led to lower average cost when there is more competition.</p> <p>Consumers did not appear to benefit much from this as seen in Extract 2 due to:</p> <ul style="list-style-type: none"> <li>• The lack of available storage capacity (hence there will still be a shortage when <math>DD &gt; SS</math> resulting in steep rise in price due to supply side inelasticity) – extract 2 line 3 "UK's gas storage capacity is full" → due to immobility in fop i.e. cannot increase storage capacity especially in SR.</li> <li>• the long-term contractual agreement in pricing (hence preventing consumers to switch from higher price gas to cheaper ones – legal barriers)</li> </ul>	

Based on the above, shortages still exist  $\rightarrow$  allocative inefficiency  $\rightarrow P > MC$

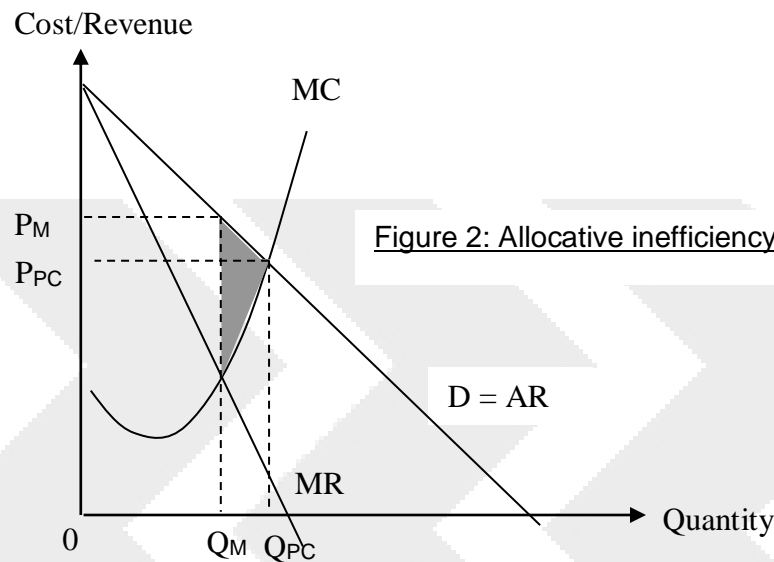


Figure 2: Allocative inefficiency in the fuel market

Governments would intervene to achieve efficiency in the allocation of resources if markets are seen to be failing. As mentioned in the case material, the UK government improves efficiency by *deregulating the fuel market* and ensures a competitive environment and safeguards consumer welfare by *establishing regulatory bodies* such as Ofgem and Energywatch. Effective regulation will result in a more competitive environment which reduces the extent of welfare loss i.e. reduce the amount of Deadweight loss in terms of loss in consumers' & producer' surplus (shaded area in Fig 2). It is impossible to remove welfare loss totally. In reality, regulatory may be slow at restricting anti-competitive behavior as investigative work is tedious and time consuming. Besides, at times, regulatory bodies may make decisions based on incomplete information.

Information failure is another source of market failure in preventing efficient resource allocation e.g. consumers may not be knowledgeable on the future change in price by energy supplier & hence may sign up & be contractually bound to one that does not offer the best rate.

## Questions

(a)	(i)	<b>How does the value of the Yuan in September 2006 compare to its value in 2000?</b>	<b>[1]</b>						
		<p>The Yuan has <b>appreciated</b> against the USD.</p> <p><u>Evidence:</u> 8.28 yuan (2000) per USD to 7.93 yuan (Sept 2006) per USD [% appreciation = 8.28-7.93 divided by 7.93 x100=4.4 %]</p>							
	(ii)	<b>Describe what happened to the US balance on current account over the period 1998 to 2006.</b>	<b>[2]</b>						
		<p>The US balance on current account was in deficit (1m) and the deficit was getting larger [1m]. OR The US had an increasing (1m) deficit (1m) in its current account.</p> <p><u>Watch Out!!!</u></p> <ul style="list-style-type: none"><li>• Wrong to say balance was “negative”. Expected to use the correct economic term.</li><li>• Wrong to say it “decrease”</li></ul>							
(b)		<b>Identify and explain any evidence contained in the data that suggests that the Chinese government is a ‘currency manipulator’.</b>	<b>[5]</b>						
		<p>The foreign exchange rate of the Yuan is simply the price of the Yuan in terms of another currency e.g. US\$. Like any price it is determined in a market by the forces of demand and supply. Whether the claim that China acted as a ‘currency manipulator’ would depend upon whether the Chinese authorities were <b>fixing the price of the Yuan below equilibrium price</b> in the market for foreign exchange in order to give Chinese exports an unfair advantage. This is done through intervention selling of the Yuan in exchange for USD.</p> <p>Evidence to show that China manipulated in the foreign exchange market to keep Yuan below its market rate:</p> <ul style="list-style-type: none"><li>• From Table 4: The stable value of the Yuan (US\$1 = 8.28 Yuan) from 2000 to June 2005 would be unlikely to occur in a free market. This suggests that market intervention was taking place.</li><li>• From Fig 2, the considerable rise in China’s foreign exchange reserves from the year 2000 should place an upward pressure on the Yuan to appreciate. However, in Table 4, the Yuan’s value had remained stable at US\$1 = 8.28 Yuan from 2000 to June 2005, giving the evidence that China could have intervened in the foreign exchange market in order to keep the value of Yuan below its free market rate.</li><li>• From Table 3, China was experiencing increasing current account surplus between 2000 to 2005. However, this was not reflected in the foreign exchange value of the Yuan i.e. the Yuan did not appreciate. This suggests that the Chinese authorities are selling Yuan and purchasing foreign exchange over the years to exert downward pressure on the value of the Yuan</li></ul> <p><u>Watch Out!!!</u> Don’t mistake currency manipulation with dumping. Dumping is selling at a price below marginal costs.</p> <table><tr><th>Level</th><th>Marks</th><th>Description</th></tr><tr><td>L3</td><td>4-5</td><td>Demonstrate clear understanding of the concept of ‘currency manipulator’, substantiated with at least 2 evidence from the data.</td></tr></table>	Level	Marks	Description	L3	4-5	Demonstrate clear understanding of the concept of ‘currency manipulator’, substantiated with at least 2 evidence from the data.	
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		<table><tr><td>L2</td><td>3</td><td>Ability to explain the definition, method &amp; purpose of “currency manipulation”. Provide at least one evidence to show that China manipulated in the foreign exchange market to keep Yuan below its market rate.</td></tr><tr><td>L1</td><td>1-2</td><td>Showed some degree of understanding of the definition and determination of equilibrium exchange rate. Attempt to explain the meaning of ‘currency manipulator’ but is not completely clear about the underlying manner and intention.</td></tr></table>	L2	3	Ability to explain the definition, method & purpose of “currency manipulation”. Provide at least one evidence to show that China manipulated in the foreign exchange market to keep Yuan below its market rate.	L1	1-2	Showed some degree of understanding of the definition and determination of equilibrium exchange rate. Attempt to explain the meaning of ‘currency manipulator’ but is not completely clear about the underlying manner and intention.	
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L1	1-2	Showed some degree of understanding of the definition and determination of equilibrium exchange rate. Attempt to explain the meaning of ‘currency manipulator’ but is not completely clear about the underlying manner and intention.							
(c)		<b>Explain how you would decide whether the low price of Chinese shoes in EU markets occurred as a result of ‘dumping’.</b>	<b>[4]</b>						
		<p><b>Definition of dumping [2]</b> Dumping occurs when goods are sold in overseas markets at a price below cost, more precisely marginal cost. The motive is often to drive domestic competitors out of the market with the aim of establishing monopoly power in the future.</p> <p><b>To assess whether the low prices of imported goods could be considered as dumping [2]</b> <b>Criteria: necessary to consider</b></p> <ul style="list-style-type: none"><li>• whether low prices were a result of low input costs in the exporting economy, which might simply reflect comparative advantage,</li><li>• whether it was a deliberate policy to sell below marginal cost. This might be with the help of the Chinese government through, for example, subsidised rents and tax exemption. Under such circumstances, dumping was certainly taking place. {Extract 4... line 5}</li></ul> <p><b>Watch Out!!!</b></p> <ul style="list-style-type: none"><li>▪ Dumping is not just selling at low prices. But the stress must be on ‘artificially’ low with a predatory motive.</li><li>▪ Note it is often related to subsidies (either outright grants or hidden subsidies) provided by the state</li></ul>							
(d)		<b>Discuss whether the Indian government’s treatment of Scotch whisky and the EU government’s treatment of imported bras from China can be justified in terms of economic theory.</b>	<b>[8]</b>						
		<p>Need to assess with reference to the <b>principle of comparative advantage</b>. This economic theory of CA suggests that economic welfare is maximised if countries specialise in the production of those goods and services in which they have the <b>lowest opportunity cost</b>. This is the basis of the argument in favour of free trade and is hence used as a yardstick to conclude whether the protectionistic measures taken by India or EU are justified.</p> <p><b>From Extract 3: Protectionistic tariff taken by India -</b> “a range of duties imposed by national and state governments means that a bottle of Scottish whisky faces a tax burden up to five times greater than its Indian-made substitutes”</p> <p>India - use hefty tariffs to jack up price of imported Scotch whisky.</p> <p>Reason or argument for protection: Based on protecting jobs + retaliating against discrimination of Indian whisky imported into Europe (labeled as Indian spirits –downgrade its status hence affecting its sales)</p> <p><b>From Extract 2: Protectionistic quotas imposed by EU</b> “The Chinese were accused of dumping bras in the EU market. This resulted in quotas being applied to textile imports from China.”</p> <p>EU – use quotas to restrict imports of bras from China (Extract 5)</p>							

Reason or argument for protection: Based on Anti-dumping argument – to stop dumping of bras by China

		Protectionistic measures are:	
		Justified	Not justified
1	<b>Infant industry argument</b>	If industry was only given temporary protection to “buy time” so that such industry which has the potential to “mature” & eventually compete globally when protection is removed.	<p>If protection is given permanently with no timeframe given for developing CA &amp; eventual ability to compete globally without protection.</p> <p>Consumers’ welfare is compromised in the form of higher price (Consumer’s surplus is reduced &amp; less varieties/choices)</p> <p>The “infant” became inefficient with no incentives to improve in the absence of competition.</p>
2	<b>Protection against dumping</b>	Unfair trade practice by partners which reduces economic efficiency	Hard to prove that it is indeed dumping.

### Conclusion:

In the context of the material, unless it is an infant industry the action undertaken by India to protect its whisky industry does not seem justified as it was based on retaliation as well as the desire to protect jobs.

On the other hand, the action undertaken by the EU against import of bras from China might have some justification if it could be proven that China was dumping goods.

### Watch Out!!!

- A disappointingly large no of candidates simply listed and explained a large number of arguments in favour of protectionism with no reference to theory at all.
- Don’t just use the principle of CA as a BLANKET argument to dismiss all basis for protection as illustrated in the context. It is true protectionism generally goes against the spirit of free trade based on the principle of CA.
- However there could still be justification as shown in the above analysis such as anti-dumping and infant-industry argument.

**(e) Assess whether the ‘growing doubt about globalization’ is well founded, using both the case study and your own relevant knowledge. [10]**

Globalization: Globalization is often used to refer to **economic globalization**, that is, “integration of national economies into the international economy through trade, foreign direct investment, capital flows, migration, and the spread of technology.”

Globalization leads to the closer integration of the countries and peoples of the world brought about by the reduction in costs of transportation and communication, and the breaking down of artificial barriers to the flows of **goods, services, capital, knowledge, technology and people across borders.**

**Advantages**

**Disadvantages**

	<p>There is a <u>realization of a global common market</u> ( which is the world) , based <u>on the freedom of exchange of a) final goods and services and b) resources</u></p> <p>Emergence of worldwide &amp; broader <u>access to a range of foreign products</u> for consumers and companies. This would mean greater variety of products and services that are available for the consumers which increases the standard of living for the consumers</p> <p><b>Economies of scale:</b> with larger market, producers can enjoy greater cost reduction per unit. This can be in the form of technical EOS, administrative EOS, and marketing EOS etc.</p>	<ul style="list-style-type: none"> <li>• We could see firms have access to resources not only within their own countries. This means that firms can always relocate their production and thus adjust their cost based on the factor endowment and thus the comparative advantage of the country.</li> <li>• This can be seen from outsourcing of call centres in India, manufacturing based in China etc.</li> </ul> <p><b>Loss of jobs</b> in comparatively higher cost countries eg developed countries such as the EU &amp; US to lower cost countries eg outsourcing of call centres to India and the textile manufacturing to China.</p>
	<p><b>Advantages</b></p> <p><b>Greater accessibility to capital</b> -the emergence of worldwide financial markets and better access to external financing for borrowers.</p> <p><b>Increased access to resources:</b> With a common global market, resources are able to move from an economy with excess resources to economies of few resources, for example, foreign talents. In fact with globalization, the cost of these resources like labor might end up cheaper as supply is now perfectly elastic.</p>	<p><b>Disadvantages</b></p> <p>Globalization might <b>weaken fiscal discipline</b> with easier access to global funds for borrowing.</p> <p><b>Financial volatility –</b> breaking down of artificial barriers to the flows of capital means that <b>liquidity</b> in the national financial institutions can be more <b>volatile</b>, contributing to interest rate &amp; exchange rate <b>instability</b>.</p> <p>E.g. when one country is hit by an economic crisis, all the financial investors in the world will re-evaluate their investment position and may withdraw their investments for various reasons. Their expectations affect the expected relative rates of return from holding dollars versus other currencies as <b>financial capital can move instantaneously around the globe to obtain the best return</b></p> <p><u>Interest rate targeted policy</u> → <b>Loss of independence</b> in the use of interest rate as the country lose control in capital flow</p> <p>→ Inflation is less sensitive to domestic demand conditions, and more sensitive to global demand conditions, i.e. flatter Philips curve.</p>
	<p><b>Factor cost Equalization:</b> World trade and migration of resources would work to take resources and consumption goods from where they are</p>	<p><b>Growing income gap</b> between factors employed in export oriented industries/sectors which have skills that are globally demanded and those whose skills that are low &amp; not highly demanded</p>

	<p>cheap to where they are expensive. As they travel with increasing speed and volume, we can observe that these commodity and factor-of production flows should erode the differences in productivity and living standard between continents and economies.</p>	<p>globally. Wages of lowly skilled labor will generally grow slower than that of highly skilled labor. Thus rapid growth might not necessarily improve the standard of living for the majority. This can be clearly seen in falling wages of lowly-skilled labor in both developed &amp; developing countries, making <b>income distribution more unequal</b>.</p>	
	<p><b><u>Greater mobility of factors internationally</u></b> There is also an <u>increase in information flow between geographically remote locations</u>. Arguably this is a technological change with the advent of fibre optic communications, satellites, and increased availability of telephone and Internet. Through the <u>trade channel</u>→ when one country devalues/depreciates currency in response to domestic shocks, it affects the economic fundamentals of other countries through terms of trade and income effects. It will affect the relative prices of goods and resources in different countries. The country with the devalued/depreciated currency will build up export price competitiveness in the same global export market.</p>	<p><b><u>Contagion Effects – making trade dependent open economies vulnerable to external shocks</u></b> With all the interconnected links among the different economies, we can observe that a country which has seemingly stable fundamentals could suddenly collapse following an economic crisis in another country. There is a transmission of shocks from one country to another through various channels Similarly the country with the <b>relatively stronger currency</b> will become less export price competitive in the same global export market.</p>	
	<p><b><u>Faster catch up for emerging economies</u></b> → With the speed of the transfer of technology and information, it is easier for emerging economies to catch up with the developed economies. Emerging economies can now learn lessons and use technologies from the developed countries where they exploit the knowledge that is readily available.  This would mean that the comparative advantage that was initially built up by the developed nations could be lost easily while these emerging nations have comparative advantage which the developed nations do not have.</p>	<p><b><u>Less govt revenue derived from tariff</u></b> There will be higher level of competition for lower tariff of all kinds. With lower taxes on imports and corporate profit, the <b>budgetary receipts are likely to decrease substantially</b>.  → But government might be able to obtain a higher level of tax revenue with the increase in income as the economy progresses, especially if there is a boom.</p>	
	<p>Greater Competition: Possible <b>erosion of monopoly power</b> in the domestic market. This promotes efficiency among the producers and prevents exploitation of consumers.</p>	<p><b><u>Stiffer global competition</u></b> There is a greater need to climb up the technology ladder to gain comparative advantage. This will mean <b>greater amount of money is needed to pump in for R&amp;D</b>.</p>	
	<p>Evidence: World trade is still rising – export and</p>	<p>Evidence: Some countries are at the losing end compared</p>	

	<p>import in the world increased at 10% per annum from 2000 to 2005</p>	<p>to others – US, UK, Italy and India’s imports rose faster than their exports while Four Asian tigers’ exports rose faster than imports.</p>	
<p><b><u>Watch Out!!!</u></b></p> <p>To score well candidates need to develop answers that use the MATERIAL provided as a stimulus to answer the question in the context provided by the case study. They need to reach a considered judgement after a thoughtful consideration of all the issues that are relevant.</p> <p>Answers generally too regurgitative and shallow Application wasn’t very strong – some regurgitated the free trade mantra e.g. variety, more choices; lower prices; economies of scale, breaking down of monopolies etc.</p> <p>Also, take note the question is angled to focus more on the “darker” side of globalization i.e. the so-called “doubts”.... about globalization. Answers that are more context-based should provide a good analysis of why this happening and then suggest why globalization still got its upside.</p>			

(a) Compare the change in food prices between 2000 and 2007 with the change in petroleum prices over the period. [2]

Similarity

Between 2000 and 2007 the prices of both food and petroleum have risen. [1]

Difference

However the price of petroleum was more volatile. It fell initially before rising sharply. \* Moreover prices of petroleum have also risen much faster than food. \*\* [1]

Skill: Ability to read from data in the form of Price index.

The question is a little tricky. Since 1995 =100 some might misread the 78.9 index for 2000 as a fall in food prices initially. However according to this question, the starting point for comparison is 2000 not 1995!

Change:

- (1) Direction i.e. rise/fall/flat
- (2) Pace i.e. fast/slow or sharp/gradual
- (3) Stable ( steady) or volatile (unsteady)

Weights

It is interesting to note that as a whole petroleum takes up a heavier weightage (nearly 40% of primary commodities) compared to food (about 21.7%) suggesting expenditures on petroleum (energy) is more significant than food.

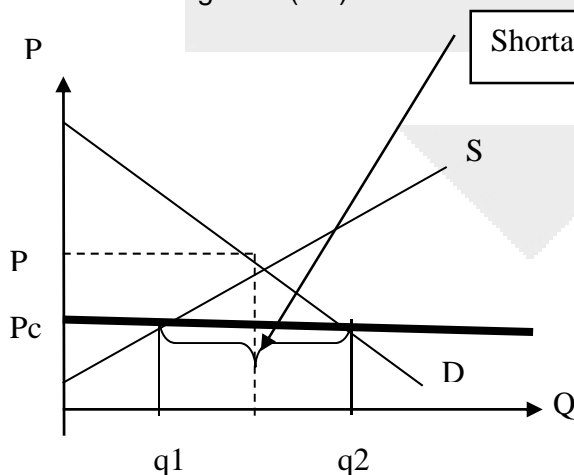
(b) With the help of a diagram explain the effect of the introduction of food price controls as described in extract 1. [2]

Extract 1 makes references to price controls on food items e.g. milk, bread, beef and chicken in countries like Russia and Venezuela which resulted in food shortages.

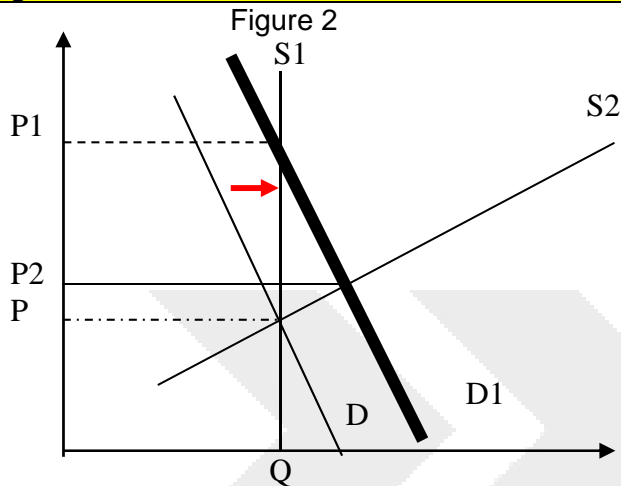
Effects

With reference to figure 1 below, the aim of such price control is to impose a legal price ceiling ( $P_c$ ) below the prevailing market equilibrium price ( $P$ ). Sellers cannot sell legally at any price above  $P_c$ . At  $P_c$  there will be a shortage since the quantity demanded ( $q_2$ ) exceeds quantity supplied ( $q_1$ ). [1m]

Figure 1 (1m)



(c)	<b>Explain why an increase of 70 million mouths to feed each year may cause food prices to rise, showing how low stocks of food would affect the extent of this rise in the short run.</b>	[4]
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With reference to Figure 2, in the short run, the supply of food tends to be relatively inelastic as shown by the vertical S curve S1. This is due to the fact that there is low stocks of food ie. producers will not be able to respond to an increase in demand by running down stocks.

On the other hand, with rising population the demand for food increases shifting the D curve rightwards. The diagram illustrates the difference in terms of impact on prices - if supply is inelastic, prices soar/ rise sharply to P1. However if supply is relatively elastic as depicted by S2, prices will rise moderately to P2.

(d)	<b>Extract 3 describe the use of subsidies in the market for bio-fuels. With the use of diagrams, explain the way in which subsidies affect the allocation of resources between bio-fuels and food.</b>	[4]
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Figure 3: Biofuel crops

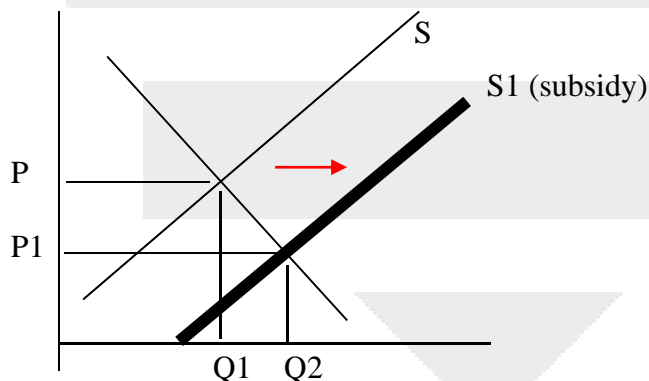
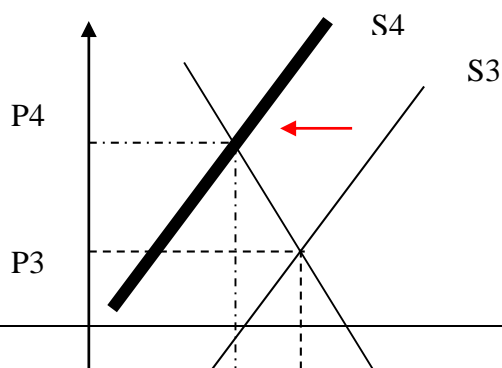
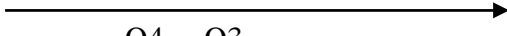


Figure 4: Food crops





	<div style="text-align: center;"><p>Q4    Q3</p></div> <p><b>Analysis:</b> Extract 3, para 3 refers to the surge in land use from “12m to more than 80m hectares worldwide over 6 years” for biofuels due largely to subsidies provided by the government. This can be explained with reference to figure 3 and 4.</p> <p>The land for growing crops has <b>alternative uses</b>. They could be used either to grow food crops or biofuel crops. In other words, food crops and biofuel crops are in <b>competitive supply</b>. In figure 3, government subsidies for growing of bio-fuel crops would give more incentive to devote more land for such activity. This is shown by a rightward shift of the S curve from S to S1. As a result more resources are allocated to produce biofuel crops as indicated by an expansion of the market equilibrium quantity from Q1 to Q2.</p> <p>On the other hand, as more land is devoted to produce biofuel crops, less is available for producing food crops. Figure 4, illustrates the fall in supply from S3 to S4 of food crops. As a result the market equilibrium quantity contracts from Q3 to Q4.</p>							
(e)	<p><b>“In a competitive market a firm’s profit would be competed away, whereas Shell and other oil companies have been able to make large profits over a long period of time”. Discuss.</b></p> <p><b>Contextual reference</b> With reference to extract 2, giant oil companies like Shell was reported to have reap “obscene” profits in 2007 amounting to £14 billion or the equivalent of £1.5m per hour. In theory this type of profits is a reference to supernormal or excessive profits associated with monopoly power.</p> <p><b>Analysis</b></p> <table><tr><th>Thesis</th><th>Anti-thesis</th></tr><tr><td><p><b><u>Thesis 1 – Firms should earn only normal profits in LR in a competitive market</u></b></p><ul style="list-style-type: none"><li>In a competitive market if firms are earning supernormal profits, new firms would enter the market and compete away the supernormal profits in the long run.</li><li><b>Illustrate with a diagram</b> to show how in MoC markets any supernormal profits would be “competed away” by the entry of new firms.</li></ul></td><td><p>For some MoC firms, they remain as a ‘little monopoly’ in a particular location with no entry of competitors. This may be partly due to imperfect information.</p></td></tr><tr><td><p><b><u>Thesis 2 – High Barriers to Entry</u></b></p><p>Shell and other oil companies are able to earn supernormal profits because the oil market is dominated by few big/major players or firms. There are high barriers to entry, some of which are natural (e.g. control over oil reserves; Oil exploration and extraction entails high capital outlay) while others are artificially erected (e.g. branding; mining license). The presence of high entry barriers enable existing firms to make supernormal profits even in the long run.</p></td><td><p>Although it might be expected that these profits would persist in the long run in such a market, this is not inevitable. For example, that a price war would break out, leading to losses amongst some of the oligopoly firms. Also, firms invested billions in extracting oil from new oil mines which ended up to be ‘dry holes’ and as a result incurred huge losses.</p><p><i>Evaluation: with globalisation, the market may become more contestable and the existing firms may experience lesser profits than before.</i></p></td></tr></table>	Thesis	Anti-thesis	<p><b><u>Thesis 1 – Firms should earn only normal profits in LR in a competitive market</u></b></p> <ul style="list-style-type: none"><li>In a competitive market if firms are earning supernormal profits, new firms would enter the market and compete away the supernormal profits in the long run.</li><li><b>Illustrate with a diagram</b> to show how in MoC markets any supernormal profits would be “competed away” by the entry of new firms.</li></ul>	<p>For some MoC firms, they remain as a ‘little monopoly’ in a particular location with no entry of competitors. This may be partly due to imperfect information.</p>	<p><b><u>Thesis 2 – High Barriers to Entry</u></b></p> <p>Shell and other oil companies are able to earn supernormal profits because the oil market is dominated by few big/major players or firms. There are high barriers to entry, some of which are natural (e.g. control over oil reserves; Oil exploration and extraction entails high capital outlay) while others are artificially erected (e.g. branding; mining license). The presence of high entry barriers enable existing firms to make supernormal profits even in the long run.</p>	<p>Although it might be expected that these profits would persist in the long run in such a market, this is not inevitable. For example, that a price war would break out, leading to losses amongst some of the oligopoly firms. Also, firms invested billions in extracting oil from new oil mines which ended up to be ‘dry holes’ and as a result incurred huge losses.</p> <p><i>Evaluation: with globalisation, the market may become more contestable and the existing firms may experience lesser profits than before.</i></p>	[8]
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	<p><b><u>Conclusion</u></b></p> <p>In reality the “large” or supernormal profits are likely to stay as barriers to entry are high in this industry. However, the government could intervene to bring about <b>greater equity as suggested in extract 2 para 2</b> by imposing a “<b>windfall tax</b>” to redistribute the excess profits away from the oil companies to the rest of society.</p>	
(f)	<p><b>As a consultant economist, what <b>options</b> would you present to the world’s governments as possible responses to the threat of <u>food shortages</u> and what would you <b>recommend</b>? Justify your answer.</b></p>	<b>[10]</b>
	<p><b><u>Introduction</u></b></p> <p>The data suggest the root of the problem of food shortages is the inability of global supply to cope with the rising demand for food as the world population grows at an estimated rate of 70 million “new mouths” per year. The consequences are hunger and starvation especially for the poorer regions of the world if the problem is left unchecked. As an economist I would recommend SR and LR measures.</p> <p><b><u>A) SR measures</u></b></p> <p>These are measures with immediate impact:</p> <p><b>1. Rationing</b></p> <p>With food shortage, <math>Q_d &gt; Q_s</math>, governments would need other methods to distribute the good. One way is to ration the good according to needs. However, it may be difficult for the governments to decide on who needs the good more. Hence, governments would need to collect accurate information on needs of her people.</p> <p><b><u>Synthesis</u></b></p> <p>A combination of SR and LR policies is required as LR policies would not be able to address the food shortage issue immediately. And SR measures alone would not be able to totally eradicate the problem.</p> <p><b><u>B) Long run measures</u></b></p> <p>LR measures must be put in place to increase the supply of food on a sustainable basis and reduce demand for food. These measures include:</p> <p><b>1. Subsidies on R&amp;D</b></p> <ul style="list-style-type: none"> <li>• Subsidy to encourage R + D on agricultural technology e.g. Increase yield of the land through using better fertilizers, seeds and farming methods.</li> <li>• Subsidy to encourage R&amp;D on increasing arable land e.g. better irrigation; drainage systems can turn desert lands into productive arable land.</li> </ul> <p>If successful, this can help increase the supply of food. However, whether there will be new and viable technology is not guaranteed.</p> <p><i>Note: should state clearly that the suggestion is to <b>subsidise the R&amp;D efforts</b> and not subsidise food production. There is a difference.</i></p> <p><b>2. Reduce/Ban use of Biofuels + Reduce Global Warming</b></p> <ul style="list-style-type: none"> <li>• <u>Biofuels</u>: Since the production of biofuels plays an important role in reducing the supply of food governments should instead subsidise the use of other forms of alternative fuels which are more sustainable e.g. solar, wind. However, alternative fuels at current level of technology are at a</li> </ul>	

	<p>much higher price hence would require a much larger subsidy.</p> <p><i>Note: Should not suggest removing subsidy on biofuel to prevent the allocation of resources towards production of biofuel and away from food production. This is because the extracts have made it clear that the situation for the subsidy on biofuel is that oil prices are rising and biofuel is the alternative. Hence as a mere removal of subsidy on biofuel will only shift the problem back to the fuel market.</i></p> <ul style="list-style-type: none"> <li>• <u>Global Warming</u> : Moreover as the data suggests global warming plays a role in causing food shortages. Hence policies to cut down on carbon emissions should help to alleviate food shortages related to the harmful effects of global warming e.g. droughts; floods. However to be effective such measures must be taken at a global level.</li> </ul> <p><b>3. Population control</b></p> <p>One of the causes of food shortage is the rising demand due to increasing population (Extract 1 last para). Governments should implement population control to slowdown population growth.</p> <p><u>Conclusion</u></p> <p>In my view, given that the root of the problem is the due to food supply, the most effective policies would be those that aim at boosting agricultural productivity such as the use of better farming technology to increase agricultural output over time. Moreover since the problem extends beyond national boundaries such as global warming there is also a need for all governments to collaborate to solve the problem of food shortages.</p>	
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#### Nov 2009 Case Study Q2

(a)	<b>Compare the change in China's balance on current account between 2003 and 2006 with that of the US over the same period.</b>	<b>[2]</b>
	China's CA showed an increasing surplus; whilst USA's CA showed an increasing deficit.	
(b)	<b>State how China's current account on the balance of payments will be affected <u>in the future</u> by:</b>	
	<b>(i) Increasing overseas investment,</b>	<b>[1]</b>
	CA (net income flow) will improve / increase in the future.	
	<b>(ii) Sending 351 000 people to work overseas.</b>	<b>[1]</b>
	CA (unilateral transfer) will improve / increase in the future.	
(c)	<b>Explain a likely advantage to Chinese firms of buying competitor firms overseas.</b>	<b>[2]</b>
	<p><b>Cost advantage:</b> Chinese firms can reap internal economies of scale such that its unit cost of production falls as it increases its scale of production. This would allow Chinese exports to gain export price competitiveness and larger global market share.</p> <p>OR</p> <p><b>Revenue advantages:</b> The resultant increase in market share will increase Chinese firms' market power such that they can raise prices to earn greater revenue and hence greater supernormal profit.</p>	
(d)	<b>Comment on the likely size of the multiplier in the three economies shown in Table 3</b>	<b>[6]</b>
	The multiplier (k) is the number of times a <b>change</b> in income exceeds the <b>change</b> in injections (or <b>autonomous expenditure</b> ) that caused it. The size of the multiplier is inversely related to the	

	<p>marginal propensity to withdraw (MPW), which comprised marginal propensity to save (MPS), marginal propensity to tax (MPT) and marginal propensity to import (MPM). This means that a high degree of leakage from the circular flow will result in a small multiplier.</p> <p><b>Briefly explain multiplier:</b> For example, given an autonomous increase in investment, it will generate income for households employed by firms in the capital goods industry. The household will tend to spend a proportion of the additional income on consumption, depending on their marginal propensity to consume (MPC), whilst the remainder will be leaked out from the circular flow of income and expenditure (depending on MPW). The consumption further creates income for households employed in the consumer goods industry who will further spend their additional income on consumption. This cycle of spending and re-spending will continue until the increase in income becomes negligible. The eventual increase in national income is several times the initial increase in AE. Hence the eventual increase in national income is dependent on the size of MPW or MPC as at each stage how much of the increase in income is channelled into consumption is dependent on the MPC or MPW. The larger the MPW or smaller MPC, the multiplier effect will be smaller and the smaller the MPW or larger the MPC, the multiplier will be larger.</p> <p>The multiplier, K, represents how many times the national income increases with respect to the initial change in AE. The multiplier process comes to a halt because not all income received during one period is passed on in the next period, as there are leakages in the form of savings, taxes and imports.</p> <p>In a four sector economy, the multiplier, K, is given by <b><math>K = 1/MPS + MPT + MPM = 1/MPW</math></b></p> <p>From Table 3, the relevant item was the figure provided for imports as a proportion of total expenditure.</p> <p>Singapore is an exceptionally open economy, with imports being 2.3 times of GDP. This means that any increase in autonomous expenditure would have a very high degree of leakage from the circular flow, i.e. there is very little passed on in the circular flow to create increased income for others. As a result, the multiplier is small in Singapore and it is likely that it would be smaller than the multiplier in the United States and China, which were much more closed economies, with 0.16 and 0.32 times of their respective GDP.</p> <p>However, it should be noted that there was insufficient information provided to arrive at an accurate size of the multiplier, because figures were not available for the tax rate and the marginal propensity to save.</p>	
(e)	<p><b>Discuss how current and future living standards are affected by the composition of national incomes in terms of the expenditure components as shown in Table 3.</b></p>	[8]
	<p>National income measures a country's level of production but may be a poor indicator of the consumption level by a country's residents. This is because a country's output includes both consumption goods and investment goods but current living standards depend only on consumption goods.</p> <p>Hence, for judging changes in consumer welfare, it is important to consider the composition of GDP as well as its size. We must determine which part of the GDP is for consumer use and which part for producers' use. If a large proportion of the increase in GDP is derived from higher spending on defence or space exploration, then we cannot say that consumers are better off especially if these goods are produced at the expense of consumer goods. Furthermore, a rise in national income that stems from a rise in exports will not contribute to a rise in living standards if the income generated from exports is not spent on consumer imports. Similarly, a fall in national income due to an increase in consumer imports does not lead to a fall in living standards. It should be noted that the opportunity cost of private consumption is gross fixed investment.</p>	

	<p>In the context of the case material, to determine the extent of current and future living standards, we would need to look at the components of private consumption and gross fixed investment from Table 3.</p> <p>In the US, current living standards are expected to be high because of the high proportion of GDP devoted to consumption (0.7 times GDP). From Table 3, it is seen that a smaller proportion of GDP (0.17 times) is devoted to investment. As a result, there would be limited growth in productive capacity, so that living standards in the future may be compromised. Similarly, for Singapore, her gross fixed investment is of a lower proportion to GDP than her private consumption.</p> <p>This is in contrast to China, where a much lower proportion of GDP is devoted to consumption (0.37 times) and much more to investment (0.42 times). This meant that current living standards in China are kept low to increase living standards in the future.</p> <p>(Use PPC to illustrate)</p>	
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(f)	With reference to the data where appropriate, assess whether on balance the Singapore economy would benefit from a large increase in investment from China.	[10]										
	Question can be rephrased as: "Assess the impact of a large increase in investment from China on the Singapore economy". Hence an appropriate framework to use would be the macroeconomic objectives.											
	<table><tr><th>Thesis: Benefit</th><th>Anti-thesis: Would not benefit</th></tr><tr><td><p><b><u>Increase in economic growth and lower unemployment</u></b></p><p>Increase in FDI would mean an increase in I, hence AD would rise, via multiplier, real national income would increase. Hence achieving economic growth and lower unemployment rates. However, k is small for Singapore as commented in (d).</p><p>Moreover, increase in I would increase productive capacity, hence LRAS would increase and hence real national income.</p><p>If the FDI involves growth of industries which Singapore has a comp advg (i.e. growth of knowledge and technology industries), it will enhance Singapore's economic growth. This may be inferred from Table 4 where economic growth is very much in line with the growth of industrial production.</p><p>The falling productivity faced by Singapore as seen in Table 4 may be revived by the FDI which may bring along technology transfer and skilled labour.</p></td><td><p><b><u>Inflationary pressures may ensue</u></b></p><p>With an increase in AD due to increase in I, demand-pull inflation may ensue if Singapore is at full employment level. If inflation is above trading partners, this could led to a loss in export price competitiveness and hence lower X</p><p>However, from Table 4, CPI increases at a very slow rate, hence inflationary pressures is less of a concern.</p><p>Moreover, if both AD and AS increase in tandem, would result in non-inflationary economic growth, which is ideal for Singapore.</p></td></tr><tr><td><p><b><u>Improved living standards in the future</u></b></p><p>Since there will be a focus on producing investment goods, the future SOL will improve (as explained in (e))</p></td><td><p><b><u>Living standards may be compromised</u></b></p><p>From Ext 5 para 4, if the profit generated form the investment is not shared fairly, then current and future living standards may be compromised.</p></td></tr><tr><td><p><b><u>Improvement in BOP (SR)</u></b></p><p>Inflow of long term capital such as FDI will improve Singapore's financial account. Assuming the other accounts remain constant, Singapore's BOP will improve</p></td><td><p><b><u>Worsening of BOP (LR)</u></b></p><p>In the long run, when profits from Chinese firms are remitted back to China, this would represent an outflow from Singapore's current account. Ceteris paribus, BOP will worsen. (as explained in (b)(i))</p></td></tr><tr><td><p><b><u>Strengthening of SGD</u></b></p><p>Inflow of capital may cause the SGD to strengthen making import price push inflation less of a concern.</p></td><td><p>This may potentially cause our exports to be less competitive. 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	<p><b><u>Other benefits</u></b>  Local firms will be forced to be more cost-efficient since the market is now much more contestable due to the influx of China FDI. Consumers will benefit if prices are lowered due to the competition, as well as have access to greater variety of goods and services.</p>	<p><b><u>Other concerns</u></b>  Physical crowding-out as well as possible financial crowding-out if funds are raised in Singapore</p> <p>Highly specialised economic structure makes Singapore more susceptible to industry specific shocks</p>	
	<p><b><u>Evaluation / Stand / Judgment</u></b>  Singapore is likely to benefit from a large investment from China as it will involve an 'upgrading' of Singapore's economic structure if investments are in knowledge and technology intensive industries. It will re-allocate human capital for more productive uses in the long run.</p>		



### 2009 A levels Q1

Governments around the world protect consumers against market failure due to market dominance.

(a) Analyse, with supporting examples, how market dominance might lead to market failure. [10]

(b) Assess the extent to which market dominance, rather than any other potential market failure, is the major cause of government intervention in the markets for goods and services within Singapore. [15]

#### Simple schematic plan

Introduction
Body
1. Explain using diagram $P > MC$
2. Productive inefficiency (society's point of view) and/or X-inefficiency
3. Support with examples
Conclusion

#### Suggested answer scheme

##### Introduction

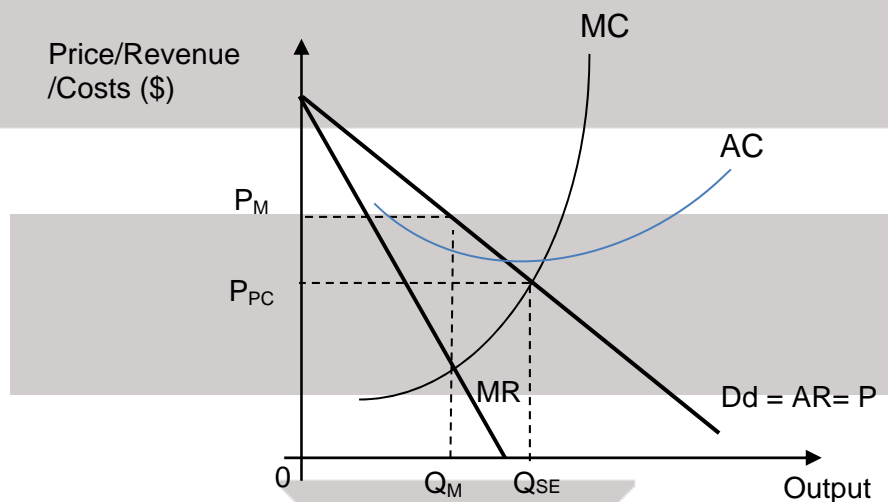
Define market failure.

Market dominance occurs when there are strong barriers to entry and/or imperfect knowledge. Market dominance does not only occur within a sole producer (monopolist) of a good which has no close substitutes, but also equally possible when a few producers (oligopolists) collude like OPEC (the Organisation of Petroleum Exporting Countries) and garner greater market power. Before we examine whether the Singapore government intervenes predominantly due to market dominance, let us first look at why market dominance is a source of market failure.

##### Body

With market power, profit maximising firms may choose to restrict output and charge a higher price than under perfect competition. Thus, price is greater than marginal cost and this leads to allocative inefficiency (see figure 1, where price charged,  $P_1$  is higher than its MC;  $P > MC$ )

**Figure 1: Market Dominance leading to Allocative Inefficiency**



- With reference to Figure 1, at the equilibrium output  $Q_E$  at  $MR=MC$ ,  $P_E > MC$ , this means the consumers place a higher value of additional units of the good produced than what it costs the firm to produce it. It is still possible to allocate resources in such a manner as to make someone (the consumer) better off without making someone else (the firm) worse off till the socially optimum output  $Q_{SE}$  where  $P = MC$  at point B.
- Hence there is underproduction  $Q_E - Q_{SE}$ .
- For the amount of goods  $Q_E - Q_{SE}$ , the incremental welfare gain is represented by the area  $BXQ_EQ_{SE}$  while the incremental cost is  $BAQ_EQ_{SE}$ . Since benefits outweigh costs, the society suffers from a welfare loss of  $ABX$  for  $Q_E - Q_{SE}$  of goods not being produced.

The stronger the market dominance, the steeper and hence relatively more price inelastic the demand curve is, the greater would be the disparity between  $P$  and  $MC$ . Hence the greater exploitation of the consumers by the producer and the greater the inefficiency in resource allocation.

*Examples* of market dominance can be seen in the *drugs* and *airlines* markets. For new drugs, there are usually a patent period whereby these drugs would be price higher and once the patent elapses, new entrants would enter, increasing market supply and bringing down prices.

Likewise in the airline industry, without open-sky policies, routes to certain destinations could be protected by regulation and air tickets for such routes would come down once deregulation occurs. In both instances, due to market dominance, consumers lose out having to pay a higher price and enjoy fewer quantities than if there is greater competition.

To secure market power and maintain a monopoly position, firms may need to spend resources on advertisements which could distort demand misleading consumers into buying things that they may not necessarily require and hence wasting resources leading to further inefficiency in resource allocation.

In addition, firms with market dominance will be productively inefficient from society's point of view as they are not producing at the point where the long-run average cost is at its minimum (unless by pure coincidence).

The monopolist with market dominance, insulated from the rigours of competition in the market, might become more complacent and lax in cost control as supernormal profits could still be earned even if output is not produced at least possible cost and hence waste resources. Hence with market dominance firms suffer from X-inefficiency.

### **Conclusion**

The presence of market dominance leads to firms charging a price higher than its marginal cost and misallocates resources by wastage and also can be productively inefficient where all these resulted in market failure.

(b) Assess the extent to which market dominance, rather than any other potential market failure, is the major cause of government intervention in the markets for goods and services within Singapore. [15]

**Comment:** Explain other areas of market failure briefly (due to time constraint, there is no need to cover every source). This essay should **focus on the reasons** for government intervention rather than the methods or policies to be adopted and their effectiveness.

Criteria for assessing whether externalities is the major cause of government intervention: extent of market failure, net benefits of intervention and urgency/severity of the problems)

- Extent of market failure
- Net benefits of intervention
- Urgency/severity of problem

### Schematic Plan

Explain other areas of market failure briefly (but due to time constraint, no need to cover every source). This essay should focus on the **reasons for government intervention** rather than the methods or policies to be adopted and their effectiveness.

INTRODUCTION	
BODY	
<p>Part 1: Market dominance is <u>one of the causes</u> of government intervention in the markets for goods and services in Singapore.</p> <ul style="list-style-type: none"><li>• Govt intervenes to achieve the objective of efficiency</li><li>• Less importance compared to other source of market failure to be discussed</li><li>• Singapore firms are usually encouraged to expand in order to be more globally competitive → development of external wing</li><li>• However, in the case of land transport, there is an increased need for government intervention especially when it affects the welfare of the whole nation. Public transport council then regulates to ensure fare affordability and minimum service standards. Recently, government also steps in through setting up committee of inquiry (COI) to investigate the recent breakdowns of the MRT to fine-tune the regulation processes and SMRT's operations.</li></ul>	<p>Part 2: Other sources of market failure, in Singapore's context such as negative externalities due to traffic congestion and provision of public good eg. National Defense are more important causes of government intervention</p> <p>(note: some candidates may also argue that healthcare provision, a source of positive externality, is also a major cause of Singapore government's intervention in view of ageing population and increasing healthcare resource constraints. In addition, Singapore is also aiming to develop medical tourism, which could be an area of comparative advantage)</p> <ul style="list-style-type: none"><li>• <b>Negative externality (traffic congestion)</b> – Need for govt to intervene to minimize the loss of productive time. Productivity is one of the key areas for foreign investors' consideration</li><li>• <b>Public goods (National Defense)</b> – Political stability is an essential consideration for foreign investors especially when Singapore is such a small country, with limited resources</li></ul> <p>Current pressing need would be to sustain Singapore's economic growth (which is slowing down). Therefore, these are important causes of market failure that government should address.</p>
CONCLUSION	

## Introduction

A government intervenes in the markets for goods and services to achieve efficiency in resource allocation when the market mechanism fails. As seen above, market dominance can lead to inefficiency in resource allocation, however, this is but one source of market failure. There are other sources of market failures such as the existence of merit and demerit goods (including externalities), public goods, imperfect information, which also require government's attention.

Whether market dominance is the main reason for government intervention in Singapore, we need to provide a perspective of government intervention Singapore (examples) and examine the extent of severity and urgency of the problems arising from all these sources of market failure and the net benefits from intervention before coming to a conclusion.

## Body

### Market Dominance

A government watchdog, the Competition Commission of Singapore (CCS) is set up to clamp down the abuse of market dominance.

Justification of Intervention: There have been instances of collusion amongst coach operators to impede competition and setting higher prices. If there have been no watchdog, society's welfare, notably consumers' welfare will be compromised.

Evaluation of government intervention over market dominance in Singapore: Though it is good to promote competition, there are also benefits arising from large scale production such as R&D, EOS and innovation. Moreover with intense competition from foreign competition, there is a need to allow local firms to grow larger in order to compete successfully like the local banks are encouraged to merge. Government's intervention should therefore be on a case by case basis depending on the motive of the firms.

However, in the case of land transport, there is an increased need for government intervention especially when it affects the welfare of the whole nation. Public transport council then regulates to ensure fare affordability and minimum service standards. Recently, government also steps in through setting up committee of inquiry (COI) to investigate the recent breakdowns of the MRT to finetune the regulation processes and SMRT's operations.

### Public Goods

- The non-excludability (**define**) and non-rivalry (**define**) characteristics of public goods make it impossible for a price to be charged for the consumption of public goods.
- All these lead to free-rider problem. As a result, market mechanism will not allocate resources of these goods by the private firms.
- National defence, first class infrastructure, efficient police and courts – all these illustrate the importance of Singapore government places in providing public goods.

Justification of Intervention: For public goods, there is complete market failure. Without price signal, no private producers would produce public goods. Hence in this case, it is a major cause of government intervention in Singapore. In addition, public goods such as Defence, law and enforcement are able to confer huge benefits to society and hence intervention is justifiable.

### Demerit/Merit Goods

- These goods are deemed socially undesirable or desirable by the political process.
- They usually exhibit negative or positive externalities (**define**).
- Singapore is known as a "clean and green city" with uncongested roads and efficient transport system. Government's effort in promoting a green environment by setting up ERP and aligning measures such as COE and road tax to ensure smooth flow of traffic on the road.
- Education is subsidised and compulsory education up to primary school.
- Healthcare in Singapore are heavily subsidised, especially in Class C wards in public hospitals.
- There are heavy excise duties on cigarettes and alcohol.

### Justification of Intervention:

Negative externality (traffic congestion) – Need for govt to intervene to minimize the loss of productive time. Productivity is one of the key areas for foreign investors' consideration

There is even greater urgency to deal with the problem of carbon emission now after the recent Copenhagen convention where Singapore has made the commitment to reduce emission by 16%, and this warrants immediate government's attention.

### Imperfect Information

- Imperfect information through advertising may distort demand with consumers purchasing goods and services they may not necessarily need.
- Singapore government has been promoting the free flow of information via new media like in blogs, websites.
- To promote transparent information about products, compulsory food labelling is implemented; health care warning on cigarette packs and prosecution of mis-selling etc are enforced and these exemplify our government policy of minimising informational problem associated with market failure.

Justification of Intervention: During the recent global financial crisis, Singaporeans who purchased the structured financial products like Lehman Brothers Notes and DBS Hi Notes have experienced welfare loss due to lack of information on the riskiness of such products. Thus the government has now stressed the importance of full disclosure of information in financial transactions.

*Note: Alternatively, students can write about inequality or occupational immobility but need to incorporate why they are urgent issues in Singapore's case.*

### Conclusion

Market dominance is one of the many causes for government intervention. In the context of Singapore we see the setting up of the Competition Commission of Singapore to promote competition, and the telecommunications (M1, SingTel and Starhub) and transportation (taxi companies) sectors have also seen much deregulation and liberalisation. However, there are also other areas such as in education, healthcare, car usage, smoking and gambling, with active government intervention. Thus market dominance is only one of the major causes of government intervention in Singapore.

### 2009 A levels Q2

A very popular band is due to play one concert at a 5000 capacity venue. The plan is to charge different prices according to the area in which the seat is located.

- (a) Explain whether this pricing policy could be considered to be an example of price discrimination. [10]  
 (b) Discuss the problems that are likely to be faced in determining the prices to be charged for the seats. [13]

### Paraphrase the questions + requirements of the questions:

This question asks whether the given example (context) conforms to price discrimination. It would mean that you have to consider whether the 3 conditions for Price Discrimination are satisfied. You are also required to think if the concert seats are the same good and if there is any cost difference when offering them to the audience in a concert.

Dissect Question Using the 3'Cs'	
<b>C – Command word</b>	<b>Explain:</b> Use SEE approach <b>Consider:</b> Both sides expected: agree & 'but' argument; and come to a reasoned stand for conclusion.
<b>C – Concept (s)</b>	Price Discrimination – Definitions, Examples of Price Discrimination and Conditions to be satisfied for Price Discrimination.
<b>C – Context</b>	Pricing of a popular concert tickets (seats)

### A simple schematic Plan:

INTRODUCTION	
BODY	
Is Effective Price Discrimination if	
Conditions for PD are met	Applications Using the context of the popular concert, explain & exemplify these conditions.
Monopoly Power	
Ability to Segregate Markets according to different price elasticities of demand	
No seepage	
Is not Price Discrimination – consider whether there is any cost difference and whether it is the ‘same’ product	
Though the cost of installing front and back row seats are the same, the goods are not homogenous in the eyes of the consumers (concert goers) as the experience/satisfaction sitting in front of a concert and the back is different.	
CONCLUSION	

### SUGGESTED ANSWERS

INTRODUCTION	
<b>Key Words</b>	Price discrimination is the practice of charging different prices for the <b>same product or different units</b> of it when such price differences <b>do not result from differences in cost</b> .
<b>Issue &amp; Approach</b>	In this essay, I shall explain whether charging different prices for different seats in a concert is an example of price discrimination. If the product/service is indeed the same and it is not a result of different costs & if the conditions for price discrimination are satisfied, this practice is considered an effective price discrimination.
BODY	
<b>Charging of different prices is Price Discrimination</b>	
It could be an example of an effective price discrimination because it fulfils the conditions of price discrimination.	
<b>Theory</b>	<b>Application</b>

<p><b>Monopoly power (NOT NECESSARY A MONOPOLY):</b> A producer wishing to practise price discrimination must have a degree of monopoly power so that consumers who are charged discriminatory prices cannot turn to an <u>alternative supplier who might offer lower prices.</u></p>	<p>The music production company that organizes the concert has monopoly power – fans cannot turn to other companies to obtain the tickets to the concert of their favorite band.</p>
<p>The ability to segregate the markets according to different price elasticities of demand. These groups may be separated by transport costs, geographical boundaries, age group and etc.</p> <p>Price discrimination will only make economic sense if the market segments have <b>different</b> price <b>elasticities</b> of demand. To increase total revenue, a higher price will be charged when demand is price inelastic and a lower price for demand that is price elastic.</p>	<p>The seats are marked and separated hence there is clear segregation for the different seats.</p> <p>Those who buy seats with better view are those with higher income (the price is an insignificant proportion to their income) or are fans of the popular band in which they will be willing to pay anything to see their idols.</p> <p>Both groups have price inelastic demand and thus not responsive to high price and thus the music company can charge them higher price and earn more revenue from them.</p> <p>The nearer the seats are to the stage, the higher the prices. The group of people who would buy front row seats are those who must be strong fans of the band. Hence their demand is very price inelastic, as there are hardly any alternatives to those seats. They would not even consider seats further up to be a substitute. Hence if price increases, the fall in quantity demanded of seats would be negligible.</p> <p>Those who settle for middle or back row seats are those who may not be such great fans of the band. Hence they face more alternatives, such as other seats or going to another concert.</p>
<p>The monopolist must be able to segregate the market into separate and identifiable groups to <b>prevent seepage</b> between markets. That is, it is <b>impossible or prohibitively costly for consumers to buy the lower-priced ticket and sell it in the higher-priced market.</b></p>	<p>There is no seepage as those consumers who want a better view of the concert will not be attracted to buy cheaper tickets of rear seats. There is no point getting a cheaper ticket and end up seated far from the stage.</p> <p><b>Note: Those who bought the tickets from the organizer and then resold to others at a higher price is a black market exists <u>not</u> seepage.</b></p>
<p>The marginal cost of installing front row seats and back row seats are the same and this is a case of 3<sup>rd</sup> degree Price Discrimination. [Diagram to illustrate 3<sup>rd</sup> degree PD, if time allows.]</p>	
<p><b>However</b>, the view is not homogeneous. Front row seats allow the fans to get close to the action on the stage. The sound is better too. Even though those in the back rows can still enjoy the action via projectors and good sound systems, the quality of experience is much lower. Hence this contradicts the assumption of price discrimination that the good/service sold must be the same.</p>	
<p><b>CONCLUSION</b></p>	
<p>A popular concert would have many fans who are eager to come close to see their idols, hence their perception of the front and back seats will not be the same. Therefore this pricing policy could not be considered to be an example of price discrimination since seats with better view are not the same as those rear seats and thus warrant a higher price.</p>	

**(b) Discuss the problems that are likely to be faced in determining the prices to be charged for the seats. [15]**

**This question requires you to consider the problems which the organizers might face in setting prices for the concert tickets. We assume that organizers are assumed to be profit maximisers. If so, then they should set price where output corresponds to  $MC = MR$  where  $MC$  is rising. The information which the organizers will require would be pertaining to  $MC$  and  $MR$ .**

Some practical questions you should ask yourself while attempting this question:

- How does the organizer know what price to charge to maximize profit? ( $MC=MR$ )
- How does the organizer know the different elasticities of the different types of audience? How does he know exactly which block of seats to be marked and separated by the elasticities?



Dissect Question Using the 3'Cs'	
C – Command word	Discuss: Thesis/anti-thesis expected; evaluation expected; conclusion with reasoned judgment expected.
C – Concept (s)	Pricing Setting
C – Context	Pricing of a popular concert's tickets (seats)





## A simple schematic Plan:

INTRODUCTION
BODY
<b>Difficulties in determining MC=MR, the profit max output &amp; then price.</b>
<b>Difficulties in determining costs</b> Explicit & Implicit costs – the latter is more difficult to calculate To consider explicit costs predominately and in this case, it should have less difficulty in determining MC.
<b>Difficulties in determining demand curve precisely</b> Lacking in knowledge about demand and MR Information of demand often changes over time
<b>Difficulties related to 3<sup>rd</sup> degree price discrimination.</b> The difficulties in determining the price elasticities accurately and marking the different seats.
<b>Any critical comments/evaluation?</b>
CONCLUSION

## SUGGESTED ANSWERS

INTRODUCTION	
Key Words	<b>Price setting under profit maximization principle:</b> A profit maximizing firm will produce goods where $MC=MR$ and $MC$ is rising and the price to be charged for this level of output is determined from the demand curve the firm faces.
Issue & Approach	In this essay, I shall consider the problems which the organizers might face in setting the different prices for the concert tickets to maximize profits.
BODY	
<b>Economic Profit</b> is a firm's total revenue minus its total cost that include both explicit and implicit costs. In order to maximize profits, the concert organizer needs to accurately calculate the economic costs and total revenue. However, in reality there are huge difficulties to calculate implicit costs and demand. Also, to practice price discrimination, calculating the different price elasticities will be challenging.	
<b>Difficulties in determining costs</b> <ul style="list-style-type: none"><li>Under profit-maximization in economics theory, the organizer should consider the sum of both explicit &amp; implicit costs.</li><li>Explicit costs require outlays of money and examples are paycheck to the band and production crew, installation of the sound system and renting the venue.</li><li>Implicit costs are the opportunity costs of resources the organizer makes available for production with no direct cash outlays and examples include the value of his labor and the interest that could be earned were the owners' assets not tied up in the business.</li><li>However, in reality, the concert organizer is only concerned with explicit costs because it is easier to compute.</li><li>Hence the concert organizer would not be able to maximise profit except by chance because he would not be aware of its <u>true</u> marginal cost schedule.</li><li>In short, implicit costs are hard to compute, hence actual cost conditions are also difficult to estimate.</li></ul>	
<b>Evaluation</b> (1) In reality, the organiser has less difficulty in determining MC. Most of the cost is sunk or fixed. The cost of selling an additional ticket is minimal and close to zero. Hence variable cost is minimal and can be considered to be zero.  Since <b>profit maximisation is where <math>MR=MC</math> and in this case 0, the organizer should set price where the TR is maximum and in this case selling all the 5000 tickets.</b>	
<b>Difficulties in estimating AR and MR</b> <ul style="list-style-type: none"><li>Firms in reality are unlikely to know precisely or even approximately their demand curves &amp; hence their MR curves.</li></ul>	

- The demand curve for a firm's product does not remain static. They may change due to changes in consumers' tastes & preferences, their income levels as well as the actions of rival firms. The outcome of these changes cannot be predicted with accuracy.
- Example: As the rating of artistes is greatly influenced by the mass media, any favourable or unfavourable publicity can swing the demand for their concert performance. E.g. the popularity of male artiste among his female fans may dip after an announcement of his relationship. The organizers are not able to predict such changes in demand condition when making pricing decision.
- As price list must be printed before the actual sale of tickets, pricing is based on predicted demand. If price is set above equilibrium price i.e. too high, it will result in many vacant seats which has detrimental effects on loss in revenue as well as morale of the artistes and their fans (loss of "face" & reputation). Some organizers try to salvage the situation by giving away free tickets using various channels e.g. lucky draw events, tie-up with tour packages etc. The need to resort to such sales gimmicks itself may further reduce the rating of the artiste.

#### **Difficulties in charging 3<sup>rd</sup> degree PD**

- In the case where the organizers would like to raise TR by practicing price discrimination, he will face difficulties in determining the different price elasticities of demand.
- Formulae for price elasticities are based on small changes in its own price with ceteris paribus condition.
- If there is a large percentage change, then the estimate of elasticity may be inaccurate.
- Ceteris paribus condition in reality is almost impossible as many variables, be it income, taste & preference, etc can change simultaneously.
- As a result, these values are likely to be limited in accuracy & become obsolete very quickly.

#### **Evaluation**

- For a 5000 seating capacity, it is difficult to surface all the different elasticities in accordance to where the seats are located. Hence it's difficult to allocate the correct amount of seats to different pricing groups, unless surveys are done by the event organizer prior to staging the concert so as to gauge how popular the artiste is in the country.
- There is a fixed supply of seats at 5000, hence organizers may not be able to allocate as many seats as they should to a certain pricing category.
- A clear example of the difficulties faced by the firm is the emergence of black markets which involves the reselling of tickets to popular concerts at very high prices. These black markets emerge when prices are fixed at below market equilibrium, resulting in a shortage. This means the organizer could have priced the tickets higher.

#### **Conclusion**

The main problems the organizer faces is to determine the correct price for the tickets to maximize economic profits. It is relatively easier to just maximize total revenue given variable cost is minimal.

### 2009 A levels Q3

There have been large changes in the price of crude oil over the past few years.

Discuss what determines whether consumers or producers are more likely to bear the cost of these oil price changes. [25]

#### Schematic Plan Introduction

Briefly explain why oil is an important commodity.

State the use of DD-SS model to discuss whether consumers or producers will bear the cost of surge in oil price.

#### Body

##### Only consumers bear the burden

###### Hike in oil price due to rise in demand

Concepts: DD-SS and PES

TE of consumers = TR to producers

Illustrate with diagram

###### Hike in oil price due to fall in supply

Concepts: DD-SS and PED

Price increase will bring about a less than proportionate fall in  $Q_d$  and thus consumers paying more for less and producers still having higher revenue

Illustrate with diagram

##### Both producers and consumers bear the burden

###### A rise in crude oil increases the factor cost of many final goods and services

Concepts: COP and PED

Consumers bear the burden of higher price of lesser output since cost of production increases.

If demand for the final goods/services is price inelastic, producers still stand to gain in terms of higher revenue.

Producers suffers a loss in revenue if demand for the final goods/services is price elastic

###### Cost-push inflation

Detrimental to the economy – so producers or consumers will suffer due to a shrink in real income.

#### Impact on long run (Evaluation)

Development of alternative energy sources, can lead to gain for both consumers and producers in the long-run

#### Conclusion

**Note:** By arriving at a stand who bears the cost of price surge itself is a form of evaluation.

### SUGGESTED ANSWERS

#### Introduction (2-step approach)

##### Step (1) - Identify the key issue and put it in perspective (restrict the discussion to a rise in price)

Oil is an important commodity and a non-renewable resource for which the world depends on as a major source of energy supply. In recent years there have been **large changes in the price of crude oil, mainly sharp increase in the price**. The surge in price has an impact on the **well-being of consumers and producers**.

##### Step (2) - Briefly outline your approach to tackling the issue

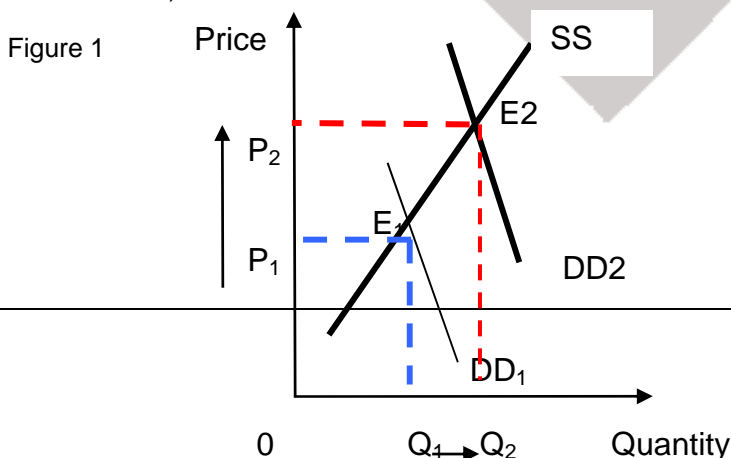
In this essay, I shall be using **demand and supply analysis** to determine whether consumers or producers “bear the cost” of such surge in the price of crude oil.

#### Body

##### Scope (1): Increase in demand (ceteris paribus)

Demand increases e.g. **Economic Boom or even speculative buying sometimes**

In recent years the Asian giant emerging economies of China/India have been experiencing very rapid growth (6-7% for India; 7-10% for China).



With reference to fig. 1 demand curve shifts rightwards from  $DD_1$  to  $DD_2$ . Ceteris paribus, both the price of oil as well as the output or quantity sold rise. From the diagram, it can be said that producers are likely to gain from increased total revenue/earnings from area  $OP_1E_1Q_1$  to area  $OP_2E_2Q_2$ , whereas **consumers are likely to bear the cost in terms of increased total expenditure on oil.**

Also, supply for oil is price-inelastic (stocks low, long time period to explore new oil mines and tedious process in extraction of oil) and thus the increase in output is less than proportionate of price increase.

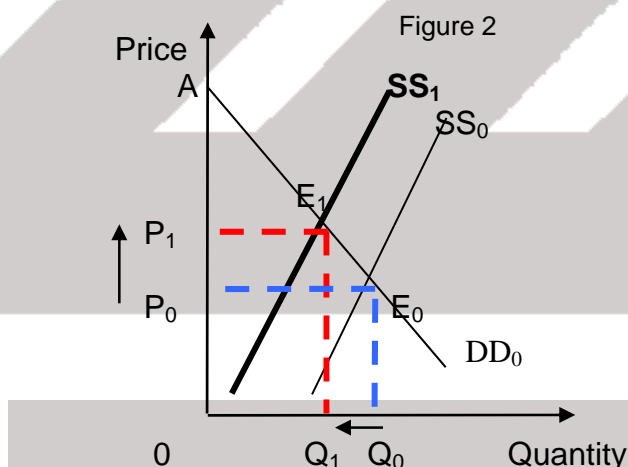
**Note: Total revenue and total expenditure are both measured by using the same formula,  $P \times Q$  sold. Numerically the value is the same. They are an accounting identity because what consumers spend must be exactly what the sellers or producers earn since the goods are sold to the consumers in the first place.**

### Scope (2): Fall in Supply (ceteris paribus)

From time to time the supply of crude oil is subject to the influence of **supply shocks** e.g. hurricanes; terrorists attacks on oil installations; disruptions to shipping of oil due to wars or political problems.

#### Impact (1)

As such the S curve might shift leftwards causing oil prices to rise. In this case the quantity or output sold falls. Whether producers earn more/less or consumers pay more/less for oil depends on the **price elasticity of demand for oil**. Generally, demand for oil tends to be price inelastic because oil is a necessity as it currently the main source of energy used for many purposes such as generation of electricity and production of petrol. Moreover, there is no cost effective substitute as yet for crude oil despite the preponderance of other sources of energy like solar, wind etc.



With reference to Figure 2, as supply falls, the SS curve shifts leftwards from  $SS_0$  to  $SS_1$ . Ceteris paribus, price rises while output sold falls. Assuming demand for oil is price inelastic, producer's revenue increases from  $OP_0E_0Q_0$  to  $OP_1E_1Q_1$ . Hence, **producers gain in terms of more earnings whilst consumers have to "bear the cost" in terms of paying more for oil.**

#### Impact (2) – loss in consumers' surplus

Secondly, regardless of whether total revenue rises or falls, an increase in price of oil due to a fall in supply invariably result in a fall in consumers' surplus.

With reference to figure 2, when supply falls from  $SS_0$  to  $SS_1$ , price increases from  $P_0$  to  $P_1$  and consumer surplus shrank from area  $AP_0E_0$  to  $AP_1E_1$ . **Thus consumers bear the cost in terms of a loss in consumer's surplus.**

#### Some elaboration consumers bearing the burden:

Consumers of oil-based products e.g. petrol and electricity are likely to experience rising cost of living. For instance, to maintain their current standards of living households have to pay more for utility consumption whilst motorists have to pay more for petrol.

Moreover as oil prices climbed higher and higher, driving may become unaffordable to some motorists. Some households may have to forgo the comfort of air-conditioning. In short, consumers might suffer a fall in living standards if

their incomes cannot keep pace with rising cost of living linked to higher cost of energy consumption.

**A rise in crude oil increases the factor cost of many final goods and services:**

Any increase in variable cost of production will reduce output and causes price to rise. Thus consumers will bear the burden in terms of price increase and falling output.

If the demand of the final good is price-inelastic, producers can still gain in terms of higher revenue. If demand is price elastic, producers will also lose in terms of a shrink in revenue.

E.g. Oil needed as a factor of production of rice, e.g. used for working the machineries in farm and transportation. Oil price hike lead to increase in cost of production and therefore increase in price of rice. And rice being a necessity will have a price-inelastic demand and thus consumers have to fork out more for lesser output.

**Cost-push inflation**

A rise in crude oil price may lead to cost-push inflation which can be detrimental to the economy.

**HOWEVER**

**Impact on Price elasticity of demand for Oil**

Over time the demand for oil may become less and less price inelastic for 2 basic reasons:

(1) Substitutes (alternative energy)

In recent years the search for alternative fuels e.g. solar, wind, geothermal, biomass has gathered momentum. Besides the concern over climate change, has actually provided more incentive to search for alternative fuels.

(2) Conservation

Greater conservation of energy. Consumers have learnt to be more efficient in using oil e.g. use of more fuel efficient cars; lighting; air-conditioning etc

**Impact on long run Demand and Supply of Oil**

As oil prices rise to so-called “stratospheric levels” there is greater economic incentive for consumers to switch to alternative fuel sources such as biofuels, wind and solar. Thus in the longer term it might work against the interest of producers if indeed consumers are able to find a good and cheaper substitute for oil.

Also, in the longer term market price signals and the large windfall profits might provide the right incentive for oil producers to invest more in oil extraction/exploration thus adding more supply to the market in the longer term.

If this happens, besides ensuring a greater supply in the future it will also have the effect of moderating future oil price hikes. Thus it can be said consumers stand to gain.

**Conclusion ( stand on the issue)**

In recent years oil prices have largely been trending upwards. While producers are likely to gain more than consumers from rising trend in price of crude oil in recent years, this is not always the case especially in the long run.

**Alternative approaches**

	<b>Thesis</b>	<b>Anti-Thesis</b>
Market Structure	<p>The oil market is dominated by big firms e.g. Shell, Exxon Mobil and Caltex. Mainly because of formidable/ high barriers to entry e.g. both natural and artificial barriers such as capital outlay, technological know-how; licensing or mining/exploration rights.</p> <p>In such a market the sellers have strong pricing power. They can artificially hold up prices by holding back supply e.g. OPEC cartel famously used their monopoly power to set quotas to prop up oil prices.</p>	<p>Not always true oil producers can always use their monopoly power to their advantage.</p> <p>For instance oil prices can be subjected to government regulation e.g. price-fixing is outlawed in many countries.</p> <p>Moreover in times of recession when the market is weak oil producers might find it difficult to prop up prices. Experience shows that when the market is weak cartels are unlikely to succeed because of the pressure to undercut prices.</p>
Government Intervention in the market for oil	<ul style="list-style-type: none"><li>• In many developing countries government subsidises fuel consumption e.g. Malaysia, Indonesia.</li><li>• In this instance it is neither the producer nor the consumer but the taxpayers “bear the cost” of rising oil prices.</li></ul>	<p>Government Failure</p> <p>Oil companies have powerful lobbies in government to protect their interest e.g. opposed legislation to tax windfall profits.</p>

	<ul style="list-style-type: none"> <li>Government regulation: Price-fixing: Price fixing is outlawed in many countries e.g. pump prices at petrol kiosk in SG</li> <li>Taxation: In some instances, government imposed windfall tax to cream away excessive profits. The profits can be used to fund research on clean alternative energy for the benefit of consumers in the long run.</li> </ul>	
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2009 A levels Q4

The relative importance of the components of the circular flow of income for a small and open economy, such as Singapore, is likely to be different from a large and less open economy, such as the USA.

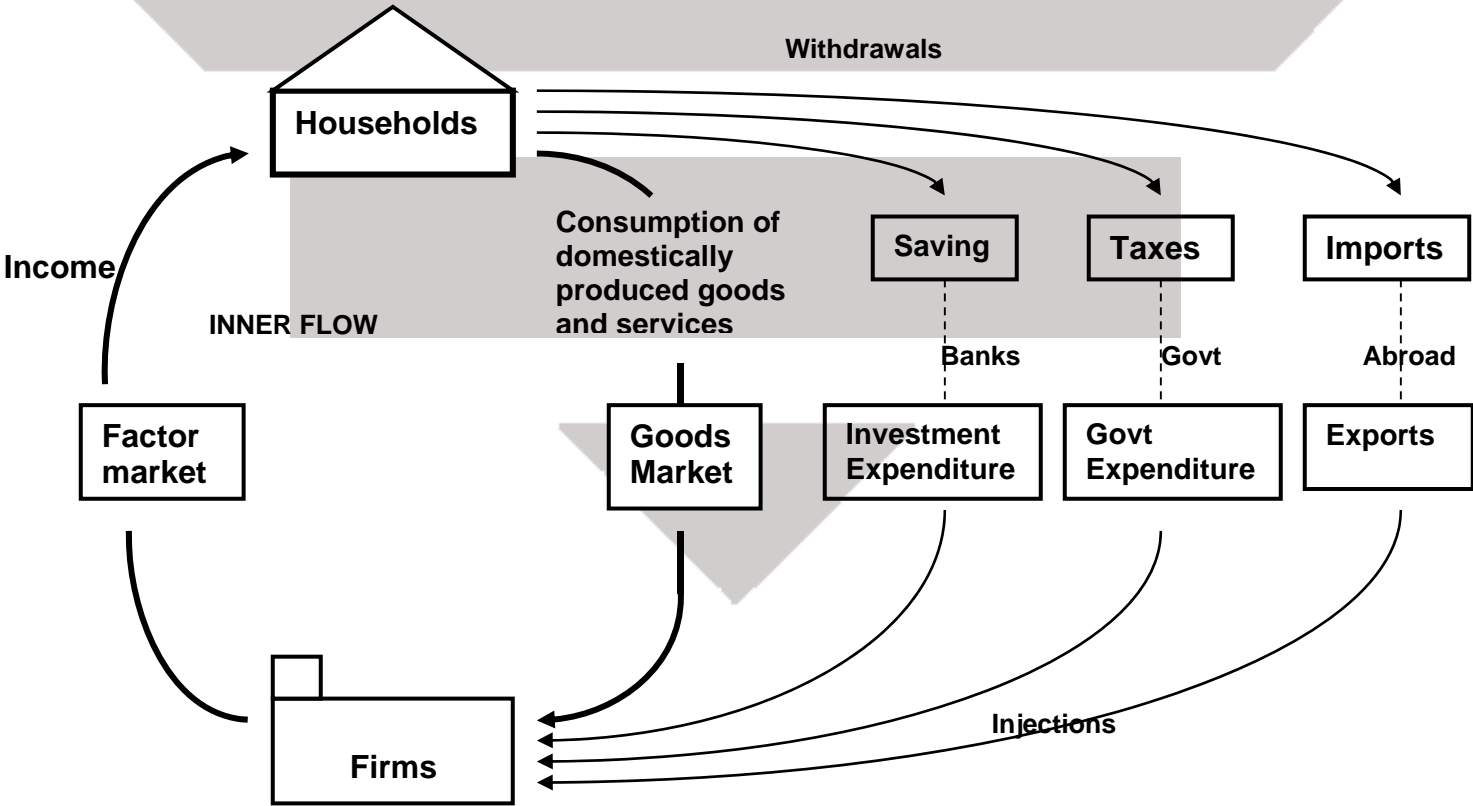
- a) Explain this statement. [10]
- b) Assess whether a change in the external value of its currency is more likely to have a larger impact on Singapore or the USA. [15]

Simple schematic plan

Introduction
Body
1. Explain the circular flow of income using diagram 2. Comment on the relative importance of the components
Conclusion

Approach

- The circular flow of income is developed by Keynes as a model for determining expenditure and hence income.
- In a 4 sector economy like Singapore and USA, withdrawals from the circular flow of income includes saving (S), taxes (T) and imports (M). Injections on the other hands are made up of investment (I), government expenditure (G) and exports (X).
- The relative size of these various components of the circular flow of income differs for Singapore and the USA due primarily to the different size and nature of these two economies.





- In a simple 2 sector economy, the circular flow of income comprises only of firms and households. Whatever that is produced by the firms are assumed to be consumed by the households paid for by the income given to the households by the firms.
- However, referring to the diagram above, we can see that for open economies like Singapore and USA, there are various factors which will cause money to 'leak' from the circular flow of income, and conversely, there are also injections into it.
- Total withdrawals from a country's circular flow of income can come from households saving part of their income (S), paying taxes (T) and buying of imported goods (M).
- Likewise, not all receipts arise from the consumption of domestic consumers. Some are injected in the form of exports (X), investment (I) and government expenditure (G).
- The Singapore economy is a much smaller country (no natural resources) compared to the USA economy and hence, is very dependent on imported goods, both in terms of raw materials and finished goods. Hence, Singapore will have a higher level of leakages relative to that of the US's.
- Singapore is also much more open compared to the USA. This would mean that Singapore would also experience high level of injections into the circular flow from exports (X). This is due to the fact that Singapore has a smaller domestic market compared to that of the USA, and hence most of the goods produced by the firms in Singapore are meant for export purpose. On the other hand, USA has a relatively bigger domestic market compared to Singapore, and hence, most of her goods are consumed domestically in the country.
- All in all, due to the different nature of the two economies, the relative importance of the components of the circular flow of income will be different. X and M will be much more important to Singapore than USA and C will be much more important to USA than Singapore.

## Part (b)

### Simple schematic plan

#### Introduction

#### Body

1. Analyse change in value of currency on EG, employment, inflation, BOP
2. Compare the effects on Singapore vs USA

#### Conclusion

### Introduction

A change in external value of a currency will affect the economy in terms of economic growth, inflation rate, unemployment rate and BOP. Due to the different nature of the Singapore and US economies, the impact will be of different extent. In this essay the change in external value of currency will be taken as a fall.

### Body

#### Analysis of fall in external value of currency on the economy

- In any economy, a fall in external value of a currency will cause  $P_x$  (in foreign currency) to fall causing increase in demand for exports and export revenue (in local currency) will increase and  $P_m$  (in local currency) to rise causing quantity demanded for imports to fall more than proportionately and import expenditure to fall if  $PED_m > 1$ . Even if  $PED_m < 1$  and import expenditure increases instead, as long as Marshall Lerner condition ( $PED_x + PED_m > 1$ ) holds BOT will improve and will lead to a rise in AD and hence increase output and employment, if the economy is operating at the below full capacity. On the other hand, it will lead to demand pull inflation if the economy is near full employment.
- The increase in import prices can also cause import price push inflation.
- A fall in external value of currency can have differing impact on FDI. FDI may increase given the fall in the external value of currency, the cost of investing is cheaper. However, if the fall in the external value is seen by the investors as a long term trend, it will affect their confidence in the economy and FDI may be affected. A fall in FDI will slow down the potential growth of the economy.

#### Comparison of the effects on Singapore and US economy

- As explained in part a, Singapore unlike US is more dependent on trade. Hence with any changes in external value of the currency, the Singapore economy is likely to be hit harder.
- Singapore being resource poor country needs to import almost everything that is needed for survival, from oil to food stuff to daily necessities. US, on the other hand, produces food crops and other raw materials. Hence given Singapore's heavy dependency on imports, the rise in import prices will subject the economy to imported cost-push inflation. In addition, increase in prices of imported

raw materials will bring about higher costs of production hence resulting in cost-push inflation. Competitiveness of exports may in turn be reduced if these exports have high import content, partially negating the benefits of a depreciation. Nevertheless, price of exports (in foreign currency) is still cheaper with the depreciation.

- In the case of the US economy, a fall in the external value of currency will not bring about inflationary pressure to the economy as the country is not as dependent on imports compared to Singapore. In addition, even if US is operating near full employment, demand pull inflation should also not be a concern as trade is of relatively less importance compared to the domestic sector.
- A fall in the external value of currency may have a different impact on FDI for Singapore compared to US. Due to the dependency on trade the policy option for Singapore is to use exchange-rate based monetary policy. Singapore's exchange rate is managed-float unlike the case of US where currency floats freely subjected to the full brunt of demand and supply forces. Hence a fall in external value of currency for Singapore will be viewed more likely as a temporary phenomenon whereas in the case of US investors' confidence may be shaken.

### **Conclusion**

Due to the different nature of the two economies, a change in the external value of its currency is more likely to have a larger impact on Singapore than the USA. The Singapore government thus is committed to maintain a long term stable and comparatively strong currency to prevent imported inflation and to contain domestic cost pressures.



## 2009 A levels Q5

Economic measures of the Singapore economy for 2007 indicate that GDP was S\$243 billion. The current account on the balance of payments was S\$59 billion in surplus.

(a) Explain how you might use GDP and balance of payments data to measure the performance of an economy. [12]

(b) Assess whether these economic indicators are the best measures of economic performance and standard of living in Singapore. [13]

### Part a

#### Simple schematic plan

Introduction	
Body	
Usefulness of GDP as a measure	Usefulness of BOP as a measure
Explain what is GDP Explain how GDP can be used to indicate the health of the economy in terms of Economic growth, stability and employment	Explain what is BOP Explain how BOP can be used to indicate the health of the economy in terms of external sector
Conclusion	

#### Introduction

The performance of a country is assessed in terms of achievement of economic objectives. These (macroeconomic) objectives include sustained economic growth, price stability, full employment and balance of payment equilibrium. In this essay, we will explain how GDP and BOP can be used to measure the economic performance of a country.

#### Body

Usefulness of GDP as a measure of economic performance	Usefulness of BOP as a measure of economic performance
<ul style="list-style-type: none"> <li>GDP is the market value of all final goods and services newly produced over some period of time, usually a year, <i>by productive factors that are located within the geographical boundaries of the country.</i></li> <li>GDP is able to measure a country's level of economic activity and well-being since it measures a country's total final output. i.e. Changes in GDP shows how fast the economy is growing.</li> <li>A rise in a country's GDP suggests that the economy is growing and more jobs will be created helping to achieve full employment level signifying a positive outlook for the country.</li> <li>Alternatively, if GDP is growing too fast, eg. Double digits GDP growth may signify an economy which is overheating and hence a negative outlook for the country.</li> </ul>	<ul style="list-style-type: none"> <li>The <i>balance of payments</i> (BOP) of a country is a statement of all the international transactions of a country with the rest of the world over a period of time, usually a year. In other words, the BOP records the international inflows and outflows of a country's currency.</li> <li>It is made up of current account, capital account and financial account.</li> <li>The current account records payments of visible balance i.e. exports and imports of goods and invisible balance i.e. exports and imports of services, net property income from abroad and net unilateral transfers.               <ul style="list-style-type: none"> <li>A surplus in the current account balance which can be regarded as more beneficial to an economy rather than a deficit as it indicates that the country is exporting more than it's importing and hence signifies strong aggregate demand (AD) and hence growth for the country. However, as a country enjoy economic growth, it is inevitable that it experiences a deficit in current account as the demand for imported investment goods (i.e. machinery) and consumer goods rises as the country grows. A deficit in the country's current account balance may hence signify positive economic performance in terms of growth.</li> </ul> </li> <li>The capital account records debt forgiveness and migrant transfers and acquisition and disposal of non-financial assets such as patents and copyrights</li> <li>The financial account records the inflow and outflow of direct, portfolio and other investments of the country with other countries.</li> <li>If BOP data shows a persistent disequilibrium it will present the following consequences:               <ul style="list-style-type: none"> <li>A persistent deficit would gradually lead to a depletion of the country's foreign reserves. On the other hand, the country cannot expect to finance its deficit with short-term loans indefinitely because these must be repaid with interest. Having to persistently lose gold or foreign reserves or to borrow short-term loans, show that the country is unable to finance desired imports of goods and services with exports or long-term capital flows.</li> <li>It is noteworthy that a persistent surplus disequilibrium, accompanied by an accumulation of gold and foreign reserves, does not pose payments difficulties as a BOP deficit. However, a persistent BOP surplus is an unstable situation as a surplus in one country necessarily implies a BOP deficit in its trading partners.</li> </ul> </li> <li>In general BOP data helps to measure the health of the external sector of the economy and hence stability of the economy.</li> </ul>

#### Conclusion

## Part (b)

### Simple schematic plan

Introduction	
Body	
Thesis – GDP and BOP data can measure the economic performance and SOL of Singapore	Anti-thesis – limitations of GDP and BOP data in measuring economic performance and SOL of Singapore
Explain how GDP and BOP measures the material aspect of SOL of Singapore	Explain the limitations of GDP and BOP data in measuring SOL – real, per capita, composition, distribution, non-material Explain the limitations of GDP and BOP in measuring economic performance – GPL, unemployment figures
Conclusion	

#### Introduction

Standard of living refers to the level of well-being or welfare enjoyed by an average person or resident of a country. The overall standard of living measures the material plus non-material well-being of the economy. Material (or tangible) well-being or standard of living refers to the quantity and quality of goods and services available to the residents for consumption and the non-material well-being refers to the 'intangibles' or quality of life. In this essay, we will assess whether and to what extent GDP and BOP data alone can help to measure SOL and the limitations of these data in measuring economic performance.

#### Body

##### Thesis – how GDP and BOP data measure SOL

Since GDP measures the output in the economy and SOL is determined by the quantities of goods and services consumed then a higher GDP would indicate larger quantities of goods and services available for consumption and hence a higher SOL.

The current account in BOP indicates the X vs M. Higher levels of M indicates consumption of goods and services by the people and hence higher SOL

##### Anti-thesis 1 – Limitations of GDP and BOP in measuring SOL

However, GDP and BOP data alone are grossly insufficient.

###### 1. Need for Real GDP per capita

GDP data on its own gives measurement of total output of the economy. Any increase in GDP may or may not indicate improvement in SOL depending on what caused GDP to increase. GDP can increase due to increases in prices and/or population and/or physical quantities of goods and services. Only increases in physical quantities of goods and services can help SOL improve. Hence Real per capita GDP removes the effects of inflation or population changes and gives a more accurate picture of the goods and services available for consumption for the average person in an economy.

###### 2. Need distribution of income

Even with improvement in real per capita GDP, SOL cannot be said to improve for all in the economy as it is an average figure. Not everyone in the economy will experience the same increase in income and hence SOL. To give a more complete picture, GINI coefficient which is a measurement of income inequality is required. In the case of Singapore, increasing income inequality is an issue and hence GDP figure alone is not a sufficient indicator.

###### 3. Need composition

GDP comprises consumer expenditure, investment expenditure, government expenditure and net exports. As mentioned previously, SOL is determined by the level of consumption. Hence if increase in GDP is a result of increase in investment then current SOL did not improve. For example in the case of Singapore GDP increases may be highly likely a result of increased investment due to the strong performance of the economy and stability.

###### 4. Need Non-material aspects

Most importantly, the data lacks information on the non-material aspect. Increasing GDP can be accompanied by

increasing pollution, working hours and overcrowding issues. All these depress the living standards of the people.

### Anti-thesis 2 – Limitations of GDP and BOP in measuring economic performance

GDP and BOP data alone are also insufficient to measure economic performance

As explained in part a, GDP and BOP data can to a certain extent give some indication towards the economic performance however, there is need for other data to complement them.

1. Need for inflation figures

In the case of Singapore, inflation is mostly due to cost push reasons hence CPI can give a better indication as to whether Singapore is suffering from inflation. Example there may be slow/negative GDP growth indicating a slowdown in the economy. Without information on CPI, there may not be any indication of possibility of serious inflation.

2. Need for unemployment figures

Rising GDP may indicate economic growth and hence lowered unemployment due to net job created as a result of the increasing economic activities. However, unemployment can be caused by reasons such as lack of skills by workers. In the case of Singapore, structural unemployment is an issue given a significant proportion of those in labour force having low education qualification and the economy is going through re-structuring to remain competitive against upcoming developing countries.

### Conclusion

Composite indexes such as Net Economic Welfare could be considered to gauge the SOL of a country. It adds to GDP certain items such as leisure and housewives' services and subtracts from GDP unmet costs of pollution and other disamenities of modern urbanisation. Physical Quality of Life Index (PQLI) is yet another measure. It includes the intangibles such as life expectancy at age one, infant mortality rate and literacy rates.

To measure the economic performance of the economy, other economic indicators such as that of unemployment rate and inflation rate are important to assess the health of an economy.

### 2009 A levels Q6

An economist stated 'The trend towards globalization leaves no room for protectionism.'

(a) Account for the trend towards globalization. [10]

(b) Discuss whether you agree with the economist's view. [15]

#### Simple schematic plan

Introduction	
Body	
Economic Factor	Technological Factor
Based on CA theory	Focus on reduction in transport and transaction cost with technological advancement
Conclusion	

### Part (a)

#### Introduction

The trend towards globalisation can be traced to mainly economic and technological factors.

- Economic – Trade liberalization or the promotion of free trade based on comparative advantage.
- Technological advancement in transportation e.g. long haul aircrafts; container ships, and communication e.g. Internet; mobile phones.

#### Body

##### ECONOMIC REASON: Explanation with economic analysis

- According to Ricardo's Law of Comparative Advantage, international specialisation and trade benefit both consumers as well as the economy because it will lead to a more efficient allocation of resources.
- A country is said to have comparative advantage in the production of a good when she can produce the good at a lower opportunity cost than another country.

- For example, Country A has to sacrifice the production of 3 units of textile to produce an additional unit of computer whereas Country B has to sacrifice the production of 6 units of textile to produce an additional unit of computer. The opportunity cost of producing one additional unit of computer is lower for Country A than Country B. Hence, we say that Country A has a comparative advantage in the production of computer.
- The Law of Comparative Advantage states that trade can benefit all countries if they specialise in the goods in which they have a comparative advantage in the production of a good.
- With open trade countries need not be self-sufficient. They can afford to specialize in exporting goods in which they are able to produce at lower opportunity costs and import or exchange for goods in which they do not have a Comparative Advantage. The ability to produce at a lower opportunity costs is due to efficiency gains from devoting resources to produce what they are best suited for. For example, given the differences in resource endowment countries like Singapore stand to gain by specializing in high value add manufactures e.g. aircraft engines whilst countries like China stand to gain by specialising in cheap low-end manufactures e.g. socks and shoes.
- Trade between the 2 countries will lead to higher level of welfare or living standards because it is possible to consume beyond a country's production possibility. Thus, the benefits of free trade based on the principle of comparative advantage are the key economic reason why many countries today embrace globalization.
- Besides welfare gains, free and open trade has also spurred growth for many countries such as Singapore and other Asian Tiger economies that have embraced globalization. The rapid economic growth experienced by these so-called 'Tiger' economies are based on the export-led growth model (i.e. growth is driven/propelled by external demand and not domestic demand). Their success has inspired other previously closed economies such as China and India to follow suit, hence accelerating the pace of globalization.

#### **TECHNOLOGICAL REASON: Explanation with economic analysis**

- **A major limitation to free trade is high/prohibitive transaction/transportation costs**
- Geographical distances and poor communication are potential hindrances or limitations to free trade. This is because in international trade, countries have to factor in the transaction costs such as freight costs for shipping or airlifting goods from one country to another.
- According to the Law of Comparative Advantage, too high or prohibitive transportation costs can wipe out the gains from trade arising from differences in comparative advantage.
- If the difference in opportunity costs of producing Good X between Country A and B is say \$100, it would be too expensive to import or export the good if shipping or freight costs between the 2 countries alone exceed \$100. In this case, the potential gains from trade are wiped out by too high/prohibitive transaction costs.
- Thus, it can be seen that technological advancements in ICT have a major impact in facilitating or boosting trade by significantly reducing transportation or transaction costs between trading partners. Hence, it can be said to be a major contributor to the trend towards globalization.
- Thus, from the economic standpoint globalization has expanded in recent times because it is now cheaper and faster or more efficient to move goods, factors and people across vast distances than ever before. In short modern advancements in ICT have made the world so inter-connected and integrated that it is said the world today resembles a "global village".

#### **Conclusion**

It is the fortuitous combination of changes in several factors such as economic and technological that led to the break-down in recent times of the major barriers to globalization. With the break-down of these barriers, the world is becoming a "borderless" place for countries to trade, invest and find resources across borders in order to spur economic growth within their own domestic economies.

#### **Part (b)**

##### **Simple Schematic Plan**

INTRODUCTION	
BODY	
THESIS	ANTI-THESES
Trend towards globalization leaves no room for protectionism	Protectionism is still necessary despite globalization, i.e. Protectionism will mitigate the possible threats & negative

<p>Explain how globalization brings about benefits to an economy and stress that protectionism would attenuate the benefits.</p> <ul style="list-style-type: none"> <li>• Export as an engine of actual growth</li> <li>• Access to foreign resources for potential growth</li> <li>• Higher employment and SOL</li> </ul>	<p>effects of globalization in the short-run</p> <ul style="list-style-type: none"> <li>• Protection of infant industry</li> <li>• Protection against dumping</li> <li>• Protection of declining or "sunset" industries</li> <li>• Protection of strategic industries</li> </ul> <p><i>Note: Under exam conditions, candidates may be able to cover only 2 points. Remember: Don't sacrifice depth/analysis for breath.</i></p> <p>Any evaluation/Critical Comments?</p>
<b>CONCLUSION</b>	

***Note: A pitfall to this essay is candidates failed to link the reasons for protectionism IN VIEW OF GLOBALISATION.***

<b>INTRODUCTION</b>	
<b>Address the issue: Establish the link between globalization and protectionism.</b>	
Key Words	The freer trade in goods and services and the international movement of capital and labour due to globalization has been achieved through the breakdown of protectionist barriers to trade and capital movement.
Issue Approach	In this regard, protectionism, which is the restriction of the international movement of goods and resources across countries, apparently appears to be at odds with the trend towards globalization.
This essay aims to discuss whether in a globalised world there is no room for protectionism.	
<b>BODY</b>	
<b>Thesis: Trend towards globalization leaves no room for protectionism</b>	
<b>Argument for totally free flow of products (free trade) and productive factors (capital &amp; labour)</b>	
Explain how globalization brings about benefits to an economy and <b>stress that protectionism would attenuate the benefits.</b>	
<b>(1) Promotes economic growth</b>	
<p><b>Boost AD via X - access to foreign markets i.e. enlarged/ bigger markets</b></p> <p><b><u>Actual growth</u></b></p> <p>Globalization → signing of FTAs → lower barriers to trade → access to bigger markets for X → rise in X → rise in AD → rise in NI by magnified effect</p> <p><b>Boost AS - access to foreign resources i.e. Increased resources</b></p> <p><b><u>Potential growth</u></b></p> <p>Access to raw materials and inputs; more foreign capital and technological transfer → rise in I → rise in LRAS i.e. capacity to produce rises increased labour mobility → inflow of foreign talents → rise in LRAS</p>	
<b>(2) Higher employment</b>	
<p>Rise in X markets → rise in X → rise in AD → firms hire more workers → rise in employment by magnified effect.</p> <p>Rise in I → Rise in LRAS i.e. capacity to produce rises → produce more jobs for Singaporeans in the future</p> <p>Trade and FDI inflows are both drivers of growth and employment. For many developing countries like China, India and Vietnam, the presence of many foreign MNCs have provided jobs for the local population. Many international MNCs such as American and Japanese auto-makers have <b>relocated or off-shored</b> their manufacturing plants to these low-cost countries to take advantage of the availability of cheap labour. These countries can benefit from the rise in I and employment.</p>	



### (3) To sum up:

#### (a) Greater economic efficiency which enhances Consumers welfare

With globalization, production chain has been broken up and shifted to different low-cost producing countries (international vertical specialization). This is made possible by the openness to trade and capital and labour flows. Such movements provide greater scope for countries to specialize according to their comparative advantage (e.g. Singapore's comparative advantage is in production of high value added products) and hence an **efficient allocation of world resources** can be achieved.

#### (b) Economies of scale

Expansion of market size allows firms to **reap economies of scale** (the fall in long run average costs as the firm expands its scale of production). Countries can also import their raw materials from the cheapest markets in the world/ import cheaper business services from abroad (outsourcing). All these enable firms to **lower their unit cost of production and possible lower prices of final products**.

#### (c) Greater Competition

Greater competition spurs efficiency and prevents exploitation of consumers by monopoly firms with substantial market power. Hence, consumers enjoy **lower prices, better quality and a wider variety of goods, standard of living improves**.

### Anti-thesis: Protectionism is still necessary despite globalization

#### Arguments for protectionism

Justification for protectionism + Evaluation (costs of protectionism)

Protectionism will mitigate the possible threats & negative effects of globalization in the short-run

#### (1) Protection of Infant Industries

Protectionist measures for an infant industry which has potential comparative advantage, especially with the trend towards globalization, in the face of more established foreign competitors, are necessary.

- Infant industries face high start-up cost at their initial stage of production
- **With the trend towards globalization, these industries are exposed to competition from established or low cost foreign firms.**
- Subsidies can be given to these producers to become more competitive against the more efficient foreign producers until it matures and is able to expand its output sufficiently to reap economies of scale and establish market share that it is able to compete with the foreign firms
- Hence, protectionism is necessary in the short-run to produce a level playing field

#### Limitation:

- **Protectionism is not justifiable in the long run:**
- **Local industry may become complacent and produce low-quality goods at high prices with limited variety if protectionism is implemented as a long-term measure. Under protection the industry lacks the incentive to mature into strong and efficient producers that can compete internationally. (I.e. Industry's growth may be stunted or firms in industry end up as "permanent" infants)**

#### (2) Protection Against Dumping

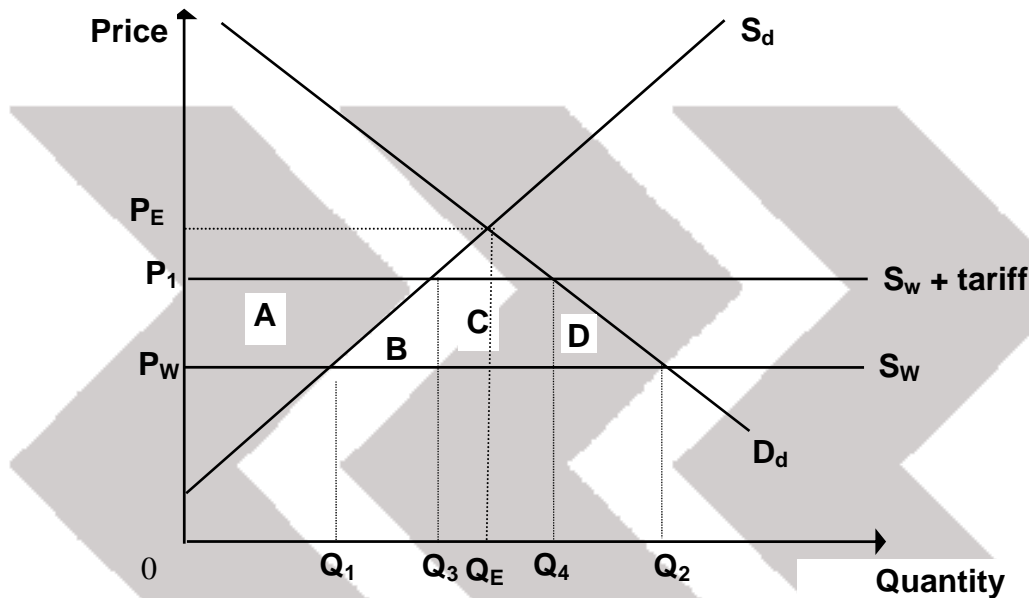
- Dumping takes place when goods are sold in a foreign market at a price below cost or below that sold at the home market.
- **In view of globalization, dumping may be undertaken by a foreign government to drive out local producers of another country. Hence, some countries may be unfairly victimized by competing foreign imports that are "dumped" in their markets.**
- E.g. USA has been blaming China for dumping their goods in US.
- Protectionism such as tariffs is thus often used to reduce imports and increase domestic production.

#### Limitation:

- Use a tariff diagram to illustrate the potential welfare gains and loss to the society

### Explanation with reference to Figure 4:

Figure 4: Decrease in imports due to tariff



- $S_d$  and  $D_d$  represent the domestic supply and demand curve respectively.  $S_w$  is the world supply which is perfectly elastic.
- Without protectionism and under free trade, the goods will be sold at  $P_w$  and  $Q_1$  will be produced by the domestic producers and  $Q_2$  will be demanded by the consumers and thus  $Q_1Q_2$  will be imported.
- To protect the home industry against dumping, the government levies a specific tariff on the imported good, thus raising the world supply curve from  $S_w$  to  $(S_w + \text{tariff})$ . The price now increases from  $P_w$  to  $P_1$ .
- At  $P_1$ , domestic production increases from  $0Q_1$  to  $0Q_3$ , hence **domestic unemployment is reduced**; domestic buyers are buying less at  $Q_4$ . The tariff has caused a fall in the amount of imports from  $Q_1Q_2$  to  $Q_3Q_4$ .

### Evaluation:

- In such instances, the ultimate cost of protection is borne by domestic consumers, e.g. American car consumers suffer welfare losses if their car-manufacturers end up paying higher costs for using domestically produced steel.
- With reference to Figure 1, since the price is higher after the tariff, **consumers are worse off** compared to having free trade as consumer surplus is reduced. The **loss in consumer surplus** is equal to the **Areas (A + B + C + D)**.
- Though **producers gain in producer surplus** in terms of increased domestic production and higher price of the good (**Area A**) and **government** can expect to **collect an amount of tax revenue** equivalent to **Area C**, the loss of consumer surplus of **Areas B and D** are not transferred to other sectors of the economy, they are **deadweight loss to the society**.

Also, in practice, countries may find it convenient to use this argument also as a pretext to keep out imported goods for other reasons. In actual fact, foreign producers may be indeed more efficient than local producers. For instance, in the face of mounting trade deficits with China in recent years, this argument has been used by the USA to pressure China to cut back its steel exports to USA.

### (3) Protection of declining or "sunset" industries

Prevent sudden **massive structural unemployment** in those industries which employ a substantial proportion of the workforce

- **With the trend towards globalization, structural unemployment arise due to the following:**
  - faster rate of economic transformation and technology transfer results in new machines and methods that make old skills obsolete**
  - greater flow of cheaper imports which compete directly with domestic producers → decline in demand for domestic goods → retrenchment of workers as import-substitutes domestic firms lose their comparative advantage and shut down → workers face difficulty seeking employment in**

### other industries

- Protectionism such as tariffs to reduce imports and increase domestic production provides a buffer for workers in these sunset industries with the opportunity to retrain and seek employment in other expanding sectors of economy
- Declining industries can also make use of the term of protectionism to reorganize and restructure themselves to compete effectively with the foreign rivals again.

*Note: If point 2 is not included in the essay, you need to use a tariff diagram to illustrate the potential welfare gains and loss to the society here for point 3.*

### Evaluation:

- Protectionism is not justifiable in the long run; It delays or slows down the restructuring process and prolong the inefficient use of the economy's resources
- While tariffs help to reduce unemployment, it brings about loss of consumer welfare in terms of higher prices and fewer goods consumed and loss of societal welfare

### CONCLUSION/JUDGMENT

From the above discussion it is clear that whilst globalization promotes growth and bring other economic benefits to countries which have embraced it, there are also drawbacks and problems that arise from time to time. If unresolved these problems might **threaten** the very **process of globalization** itself and make it **unsustainable**. For example, countries might withdraw from free trade if there perceived themselves as **losers or victims of unfair trade**.

Hence, it is **too sweeping** to say the trend towards globalization leaves no room for protectionism. Protectionism if used under the right circumstances e.g. discourage dumping, etc and actually helps in the **long run to sustain globalization** for all countries. Ultimately countries will embrace globalization only if they perceived free trade and free movement of capital and labour to be **fair and beneficial** (i.e. win-win) for everyone.

Nonetheless, one also has to note that protectionism at best should be practised in the short-run so as to reap the benefits of globalization in the long run.

*Note: For anti-thesis, under exam conditions, candidates may be able to cover only 2 points. Remember: Don't sacrifice depth/analysis for breath.*



## 2010 H2 Economics Case Study Question 1

- (a) Compare the changes in the value of fuel imports between 2002 and 2007 into China and the Philippines. [2]

### Similarity

Both China and Philippines experienced a yearly **increase in the value** of fuel imports between 2002 and 2007. [1]

### Difference

China experienced a **faster yearly rate of increase** as compared to the Philippines. [1]

Some details (not needed to get 1m): For this period, the value of fuel imports for China increased by 5 times of its original value while the Philippines' value of fuel imports increased by 3 times its original value.

- (b) With reference to the data, explain two possible reasons why the rise in the value of fuel imports differs from country to country. [4]

Candidates are to answer any two reasons supported by econ analysis:

- **Different extent of increase in demand for fuel:**

In China and India, car number increase between 1997 and 2007 were the highest (9x and 4x respectively) Petrol is a complement to cars and hence demand for fuel increases, which could lead to rise in value of fuel imports depending on how this demand is met

- **Different ability of local supply to meet demand for fuel:**

Domestic supply of fuel in China may have been unable to meet the increase in demand for petrol while countries such as Philippines has "developed indigenous fuel sources" and depend less on imported fuel to meet demand

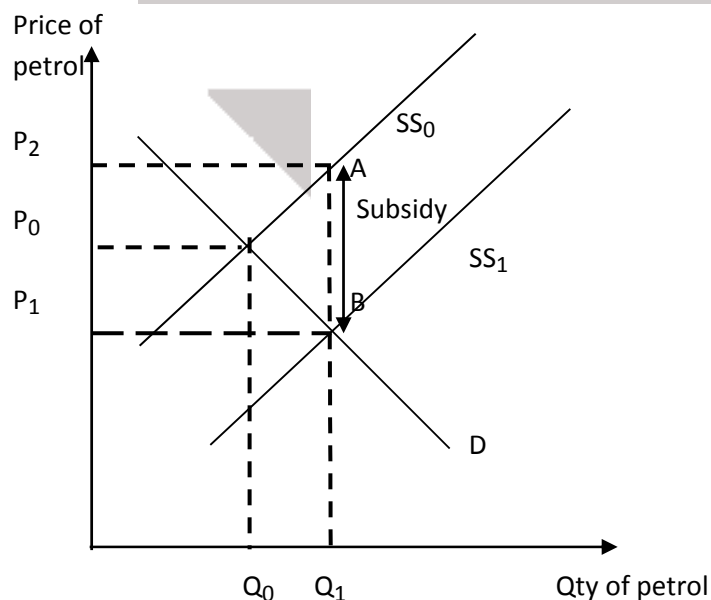
- (c) Using a diagram, show how subsidizing petrol affects its price. [2]

Subsidy shifts the supply curve from  $S_0$  to  $S_1$  due to lower cost.

Equilibrium quantity increases from  $Q_0$  to  $Q_1$

Price paid by consumer decreases from  $P_0$  to  $P_1$  increasing consumer surplus.

Value of subsidy =  $P_1 P_2 \times Q_1$



**(d) Explain why an appreciating Singapore dollar should mean that ‘the people of Singapore will not go hungry.’ [4]**

- Singapore is a small and open economy with no natural resources. Singapore depends heavily on imports for its consumption of goods and services, including its food supply as it “can’t grow tapioca, or corn” and local agriculture only feeds a small part of the domestic market. Since most of our food and raw materials need to be imported, we face a serious problem in times of rising prices for imports. (*Link to the context*)
- An appreciation of S\$ means S\$ would buy more units of foreign currency and that this would mean a reduction in the price of imports, ceteris paribus. Given that the demand for our imports is price inelastic as they are mostly necessities and raw material, quantity demanded will increase less than proportionate with a fall in price and thus the import expenditure will fall.
- An appreciating S\$ will cause price of Singapore’s exports to be higher in a foreign currency. However, this is partially offset by Singapore getting raw materials at a lower price for the production of these exports in the first place.

**(e) Discuss the view that Singapore ‘can’t compete in making Nike shoes or sewing gowns....[and should] move up to more complicated jobs and services.’ [8]**

**Theoretical framework**

The law of comparative advantage states that countries should specialize in the production of goods for which it has a lower opportunity cost.

If one unit of labour Singapore can manufacture 10 hard-disk drives or sew 10 gowns while one unit of labour in the Philippines can sew 8 gowns or manufacture 4 hard disks.

	Hard-disk drives	Gown
Singapore	10	10
Philippines	4	8

- The opportunity cost for manufacturing one hard-disk drive is 1 gown for Singapore but it is 2 gowns for the Philippines. Hence Singapore should specialize in the manufacture of hard disks drives
- The opportunity cost for manufacturing 1 gown is 1 hard-disk drives for Singapore and 0.5 hard-disk drives for the Philippines. Hence, the Philippines should specialize in the gowns.

**Thesis**

Hence Singapore should not specialize in labour intensive processes such as making Nike shoes or sewing gowns as Singapore does not have a large pool of unskilled cheap labour which is necessary for the manufacture of labour –intensive goods at low cost.

Instead, Singapore has a comparative advantage in the manufacture of higher-value add manufacturing goods such as hard-disk drives and in providing tertiary services because of her highly educated workforce, well-developed infrastructure and technology.

**Anti-thesis**

However, if Singapore were to place greater emphasis on high-end jobs and services, the manufacturing sector would likely shrink and cause high unemployment among the lower skilled workers in Singapore. This results in a greater widening of the income gap amidst greater growth.

Also, complete specialisation may make Singapore vulnerable to external threats. For example, Singapore does not have CA in production of food and relies solely on imports. This will cause Singapore to be at the mercy of her trading partners should they threaten to stop export of food to Singapore. Hence, complete specialization may not be advisable in certain circumstances.

### Synthesis/Conclusion

Overall, it is still advisable for Singapore to focus on developing its tertiary sector, attracting talented foreigners and educating/re-training Singaporeans well, because this is clearly where her comparative advantage lies. Although this will cause some structural unemployment in the SR.

On the other hand, Singapore should still put in some resources in the development of certain strategic areas even though we may not have CA as it concerns the survival of the nation.

### Mark Scheme:

<b>Knowledge, Application, Understanding, Analysis</b>		
<b>L1</b>	<ul style="list-style-type: none"> <li>▪ <i>no theoretical framework/ descriptive response to question</i></li> <li>▪ <i>no reference to case material</i></li> </ul>	<b>1 – 3</b>
<b>L2</b>	<ul style="list-style-type: none"> <li>▪ <i>evidence of theoretical analysis of comparative advantage</i></li> <li>▪ <i>insufficient depth or insufficient scope of analysis (eg. 1 sided approach)</i></li> <li>▪ <i>insufficient use of data/case material</i></li> </ul>	<b>4 - 5</b>
<b>L3</b>	<ul style="list-style-type: none"> <li>▪ <i>good theoretical analysis of comparative advantage explaining the concept of opportunity cost in relation to Singapore</i></li> <li>▪ <i>balanced answer with scope and depth</i></li> <li>▪ <i>stand evaluated with reference to case material</i></li> </ul>	<b>6 - 8</b>

**(f) In 2008, governments were faced with the conflict between rising government expenditure on subsidies and pressure to keep fuel and food prices down. Discuss the policy options available to governments in these circumstances. [10]**

### Introduction

Identify that the countries facing such a problem include China, India, Indonesia and Malaysia

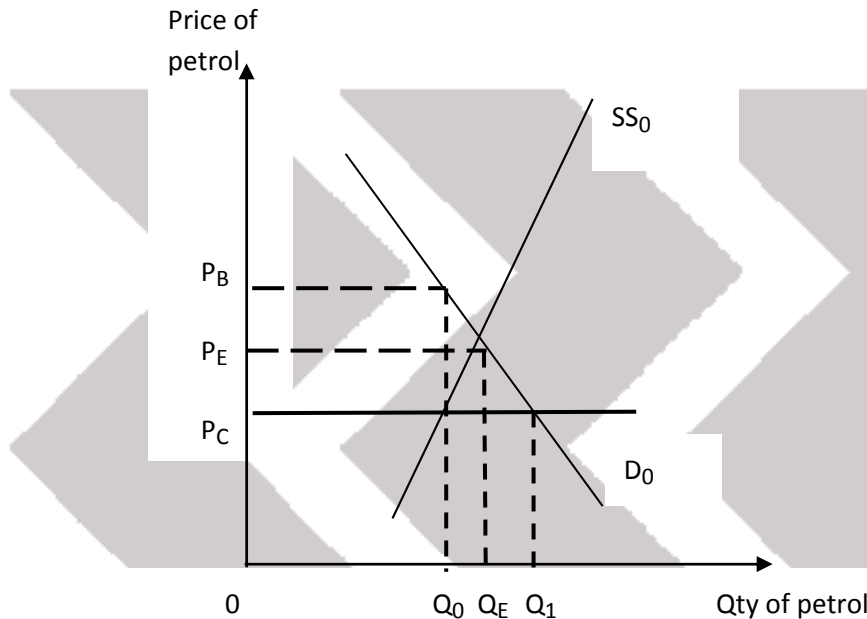
Reasons why governments are unwilling to remove subsidies include inflation in China and rising cost of living in Indonesia

### Body

As explained in part (c), subsidy can keep petrol price low but this requires a higher government spending that is likely to lead to a greater budget deficit unless government revenue can keep up with the spending. And to keep up with the spending, the governments might have to increase the level of income tax or value-added tax to finance the subsidy. Problems with such a policy would include loss of talents if the income tax is too high as well as increase the cost of living which is already a problem in Indonesia

## Suggest alternative policies – explain and evaluate with respect to the context given

### 1. Price ceiling – explain briefly with the help of a diagram how it works and the limitations.



A price ceiling which is a maximum price legally established below the equilibrium price will enable the fuel price to be lowered from equilibrium price of  $P_E$  to  $P_C$  thus making it more affordable.

Benefits: Does not require any government expenditure.

Problems: However, a shortage of  $Q_0Q_1$  will occur as domestic producers will be less willing and able to sell it at this price ceiling and consumers are willing and able to buy more. So this will result in a 'first-come-first-served' basis and many will have to go without having petrol. This may then lead to another problem of black market in which those who have the petrol will resell at a higher price of  $P_B$  which is higher than the equilibrium price of  $P_E$ .

**Note: Demand and supply of petrol is price-inelastic (explain) and thus the shortage is less severe as compared to when demand and supply is price-elastic. But the shortage will be worse as long as price ceiling is much lowered than equilibrium price and also it may grow if demand continues to rise and supply falls.**

### 2. Adjust the exchange rate to buffer the increase in oil price

- Given the increase in oil prices in the world, the governments can consider revaluing their exchange rates.
- When the value of the exchange rate increases, the oil prices in domestic currency will fall leading to an effect similar to that of a subsidy.
- **However**, this could be a problem for China which competes on price to sell their exports to the rest of the world. Also, to support a revalued currency, a lot of foreign reserves are needed which the developing countries may not have.

### 3. Increase investment in alternative sources of energy

- Governments can invest in other sources of energy such as solar, wind-power or even bio-fuels to reduce dependency on traditional fuel sources
- However, investment may take a long time to pay off, especially in the areas of solar & wind-power energy sources – some investment may not even pay off
- Also, with the increase inflation & cost of living, bio fuels may not be a good alternative for China & Indonesia – more expensive crops could add to the problems already present

#### 4. Policies in Singapore such as ERP and COE to reduce demand for driving/car and thus consumption of fuel

#### Conclusion

Governments should aim for the removal of subsidies in the long run. However, policies in the short run must be carefully managed to minimise any negative impacts on the economy. Alternatively, the governments can consider only subsidising certain groups of people in the country, perhaps based on income levels.

#### Mark Scheme:

<b>Knowledge, Application, Understanding, Analysis</b>		
<b>L1</b>	<ul style="list-style-type: none"> <li>- Lacks balance: One-sided Max 3m</li> <li>- Purely theoretical, no reference to Case material: Max 3m</li> <li>- Limited scope and weak development of analysis with glaring concept errors eg. Recommending anti-inflation policies</li> </ul>	<b>1 – 3</b>
<b>L2</b>	<ul style="list-style-type: none"> <li>- Balanced but inadequate scope &amp; depth in discussion</li> <li>- Some analysis with application of economic framework explaining policies but assessment of policies may not be complete</li> </ul>	<b>4 - 5</b>
<b>L3</b>	<ul style="list-style-type: none"> <li>- A thorough (adequate coverage) and balanced discussion with sufficient attempt &amp; effort to link to case material.</li> <li>- Sound analysis with good use of theoretical framework relating to how decoupling has or has not occurred.</li> </ul>	<b>6 - 8</b>
<b>Evaluation</b>		
<b>E1</b>	An unexplained judgement → An unexplained evaluative conclusion/comment	<b>1</b>
<b>E2</b>	Evaluative assessment supported by economic analysis → Substantiation of an evaluative comment and/or conclusion	<b>2</b>

## 2010 Case Study Question 2

### The Effects on Asia of Recession in the US

(a)(i) Using Figure 2, identify two changes in the exports of emerging economies between 2003 and 2007. [2]

There was a **decreasing proportion** of the emerging economies' exports to the United States and an **increasing proportion** of the exports to China between 2003 and 2007.

(a)(ii) What evidence is contained in the data to suggest that the US was heading into a recession in 2008? [2]

Definition of recession: two or more consecutive quarters of negative growth. This was suggested by the following:

(1) "Most enjoyed strong growth even as America's economy ground to a virtual halt in 2008." (Extract 4 para 2)  
If things continue to worsen, US might head into a recession in 2008.

(2) Figure 3 showed a declining trend in real GDP growth from 2004 to 2008, with a further forecasted dip in 2008. This declining rate of growth, if continued, might become a negative rate of growth in the future, hence suggesting that the US was heading into a recession in 2008.

**Student to take note:** A common error was to suggest that the declining rate of growth represents a negative rate of growth.

Declining rate of growth: e.g. from 6% in 2004 to 5% in 2005 (Real GDP is still increasing but at a decreasing rate)

Decreasing exports by emerging economies to the US based on Figure 2 cannot be accepted, because the article does not cite clear evidence that this is due to weakening domestic demand in the US. The data only serve to support the theory of decoupling.

(b) State the two factors that determine the impact on national income of increased export expenditure. [2]

The extent to which national income will increase will depend on the

1. Size of the increase in export expenditure and
2. Size of the multiplier

Assumption: There is availability of spare/excess resources & the economy is not operating at full capacity.

Note:

- $\text{Change in national income} = \text{Multiplier} \times \text{Change in Exports Expenditure}$  (mathematical formula not necessary).
- The multiplier is in turn dependent on the leakages or marginal propensity to withdraw. If the marginal propensity to withdraw (i.e.  $\text{MPW} = \text{MPM} + \text{MPS} + \text{MPT}$ ) is large, then the size of the multiplier will be small and limit the extent of an increase in national income given a change in exports expenditure.



(c) Explain the possible short-term and long-term consequences for living standards of a significant increase in 'real capital spending' such as that experienced in the emerging economies as referred to in Extract 4. [6]

- Explain that living standards can be defined in terms of material comfort: availability of consumption goods (vs. capital goods) or ability to consume/ level of income (real GDP per capita) and non-material/intangibles.
- The short-term consequences for living standards depend upon the extent of any unemployed resources. **If there are unemployed resources** then there could be an increase in the production of both capital goods and consumer goods. More capital goods could be produced **without** any reduction of consumer goods, so living standards would not necessarily fall as capital spending increased. In addition, the increase in real capital spending will increase I, increase AD, and national income, leading to an increase in consumption and hence living standards.
- **If the economy is already at full employment**, explain using PPC diagram to show that if there is no spare capacity, living standard in the short-term may be compromised as the increase in real capital spending would entail a sacrifice of consumer goods. In other words, **if full employment existed**, the **opportunity cost** of increased capital spending would be the consumer goods that would be sacrificed as resources were diverted to the production of capital goods.
- **For long term**, explain that real capital spending helps to boost productive capacity (give e.g.s), and that this shifts the PPC outwards. Show using the PPC diagram that this would imply a greater shift of the PPC rightwards as compared to a decision to produce more consumption goods in the short term. This would imply higher living standards in the long term.

In short, the **long-run** consequences of increased capital spending will be an expansion of the productive capacity of the economy, and this will increase the potential for consumption and improve living standards.

Non-materials: More factories being built - negative externalities – air/water pollution that affects health - decreases productivity

Note: Students who explain the LRAS consequences without considering the possibility of a trade-off or opportunity cost of consumer goods in the absence of spare capacity/resources, will fail to score the full range of the marks.

(d) Discuss the policy options available to deal with the type of unemployment in Guangdong Province. [8]

### Introduction

- From the extract, it was mentioned that consumers in US and Europe have stopped spending. As there are many factories in Guangdong that manufacture goods for the US and European markets, this will translate to lower exports for China
- This in turn leads to a fall in AD and national income (and increase in unemployment) via the multiplier (student can illustrate using AD-AS diagram showing a fall in AD).
- This type of unemployment is termed cyclical (or demand-deficient) unemployment where the lack of external demand from US and Europe due to the global financial and economic crisis resulted in a possible close down of about 20% (9,000 out of a total of 45,000) factories in Guangdong Province.
- Hence, the government can use expansionary fiscal or monetary policy to deal with cyclical unemployment.

### Body

#### I) Expansionary Fiscal Policy

- **Increase government expenditure:** The Chinese government can increase its spending on social infrastructure (i.e. better and new roads leading to industrial areas) in Guangdong. Hence  $G$  increases. The improved transport system could lead to more efficiency and also have the effect of lowering costs, thereby resulting in more competitive pricing for Chinese exports.
- **Lower corporate tax:** The government could lower the corporate taxes for Chinese companies. This will increase the after-tax profits made by Chinese companies and increase the incentives to invest. Hence  $I$  increases.
- **Lower income taxes:** Another way to solve the fall in export demand is to lower income taxes for Chinese household. The idea here is for the government to lower personal income tax policies so as to increase the disposable income of households. This would have the effect of switching demand from foreigners to local Chinese consumers. The rapid economic growth in China and affluence of many Chinese households (leading to more spending) could possibly compensate for the shortfall in international demand for Chinese exports.
- When  $G / I / C$  increases,  $AD$  increases, leading to a rise in national income and a fall in demand-deficient unemployment.

**Limitations:** An expansionary Fiscal Policy may fail to stimulate the expected rise in  $C$  and  $I$  in China if consumers' and business' confidence/outlook are pessimistic.

In the first place, Chinese exports are already very competitive (due to substantially lower labour costs). Further price reduction may therefore not have the effect of raising export demand. However, this may offset the effect of a stronger Yuan. Fiscal policies that lead to lower production costs (and more price competitive exports) may also not boost demand for exports to US and Europe if China's exports are positively income elastic: a fall in real income in US or Europe due to the recession would result in a fall in demand for China's exports if these goods are deemed as normal goods.

## II) Expansionary Monetary Policy

- The Chinese government could also pursue an expansionary monetary policy. This could be done by lowering interest rates and/ or raising money supply in the economy (which will eventually lead to lower interest rates as well).
- Lowering interest rates has the effect of lowering companies' business costs as it would be cheaper for companies to borrow money for investment (such as building new factories and buying more machineries). Consumers might also borrow more money to purchase interest-sensitive goods, such as houses.
- Hence,  $C$  and  $I$  increase,  $AD$  increases, leading to a rise in national income and a fall in demand-deficient unemployment

**Limitations:** The lower interest rates will ideally lead to the production of more goods (i.e. exports) and boost  $AD$ . However, the extent of the increase in level of investment would depend on the  $MEI$  (Marginal Efficiency of Investment) curve. In a global financial crisis, business outlook & expectation may be poor. Hence, even when interest rate is reduced, business sector may not borrow to invest if they expect their rate of return is lower than the rate of interest.

## III) Other policies:

- **Exchange Rate Policy:** The Chinese government could maintain a weak yuan by intervention sale in the foreign exchange market in order to boost export demand.
- **Trade Policies:** The Chinese government could also encourage its firms to diversify their markets for Chinese exports. When there is slowdown in the US and European markets, Chinese firms could try to export their products to other emerging economies in Asia where growth rate is 8% or more.

**Limitations:** The weaker Yuan could possibly result or worsen the trade friction between China and other countries, especially US which already has large trade deficit with China. This will result in retaliation in the form of protection against China's exports. Moreover, if Chinese exports are seen as close substitutes of other countries, China will be accused of unfair trade practices (through maintaining a weak currency). The success of this policy would also depend on the price elasticity of demand for China's exports. In addition, the export of



Chinese products into Asia could be seen as China “dumping” their goods and lead to retaliatory response from other Asia countries.

**Note:**

- It is important to determine the types of unemployment that beset the Chinese Economy in this case, the type of unemployment is demand-deficient unemployment
- The most appropriate policies would be expansionary Fiscal and Monetary policies, i.e. raise the level of AD
- The policies discussed should be evaluated in terms of their effectiveness in addressing the cyclical unemployment problem.
- It is sufficient for the marks allocated to discuss two policies to solve demand-deficient unemployment

**Mark Scheme:**

<b>Knowledge, Application, Understanding, Analysis</b>		
<b>L1</b>	<ul style="list-style-type: none"> <li>▪ no theoretical framework</li> <li>▪ one-sided (i.e. only thesis or antithesis- no evaluation of policies)</li> <li>▪ no reference to case material</li> </ul>	<b>1 – 3</b>
<b>L2</b>	<ul style="list-style-type: none"> <li>▪ evidence of theoretical analysis</li> <li>▪ insufficient depth or insufficient scope of analysis (e.g. only 1 policy adequately discussed)</li> <li>▪ insufficient use of data/case material</li> </ul>	<b>4 - 5</b>
<b>L3</b>	<ul style="list-style-type: none"> <li>▪ good theoretical analysis</li> <li>▪ balanced answer with scope and depth</li> <li>▪ policies evaluated with reference to case material</li> </ul>	<b>6 - 8</b>

(e) Extract 4 suggests there has been a “decoupling” of the US economy and the world’s emerging economies. Discuss the validity of this argument. [10]

<p><b><u>Introduction</u></b></p> <ul style="list-style-type: none"> <li>• <b>Definition</b> - Decoupling holds that emerging economies have sufficiently matured to the point that they no longer depend on the US economy for growth, leaving them insulated from the effects of trade cycle in the US economy</li> <li>• <b>Stand</b> - The validity of the argument is highly contentious and should be carefully examined using the full range of data provided</li> </ul>	
<p><b><u>Thesis:-</u></b></p> <p><b>‘Decoupling’ argument is valid:</b>  <i>the emerging economies are far less dependent on the US economy and have effectively decoupled.</i></p>	<p><b><u>Anti-Thesis:-</u></b></p> <p><b>‘Decoupling’ argument is somewhat <u>Invalid</u>:</b>  <i>decoupling is overstated and the US economy is still very important to the emerging economies and remains the principal driver of the world economy</i></p>
<p><b>Thesis 1 - Decoupling &amp; globalization can co-exist (Extract 4)</b></p> <ul style="list-style-type: none"> <li>• Emerging economies are less reliant on US for economic growth</li> <li>• Emerging economies have increased productivity growth, income and spending</li> <li>• <b><u>Analysis</u></b> – emerging economies have sufficiently boosted domestic consumption and investments (C + I) which are two key components of AD – thus offsetting any fall in</li> </ul>	<p><b>Anti-Thesis 1 - Decoupling cannot occur with globalization! (Extract 4)</b></p> <ul style="list-style-type: none"> <li>• Economies have become more integrated through trade and finance</li> <li>• Trade cycles more synchronized (para 1)</li> <li>• <b><u>Analysis</u></b> – Especially so with emerging economies which are small and open with substantial (X-M) component and reliant on US as export market. US still by far the largest economy in the world (accounts for about 30 percent of the world</li> </ul>

<p>X to US – e.g. BRICs’ experiences</p>	<p>economy)</p> <ul style="list-style-type: none"> <li>Fig 2 shows emerging economies’ proportion of exports to China is increasing &amp; China’s economy is still greatly dependent on the US economy (Extract 6). Hence, emerging economies are still indirectly link to the US economy.</li> <li>Fig 3 (extract 6) shows that the US and emerging economies growth rates are largely synchronized</li> </ul>
<p><b>Thesis 2 - Statistics backed up the case that decoupling is happening (Extract 4)</b></p> <ul style="list-style-type: none"> <li>Fig 1 – The gap between emerging economies’ exports to other emerging economies vs. exports to US has increased</li> <li>Fig 2 – emerging economies’ exports to China (increasing proportion) vs. to US (decreasing proportion) – Wef 2006, the proportion of emerging economies’ exports to China exceeded that to US</li> <li>Intra- emerging economies trade has risen faster and now accounts for over half of total exports (extract 4, para 6)</li> <li><b>Analysis</b> – emerging economies sufficiently developed their Comparative Advantage (CA), productivity growth and increased competitiveness aided by regional trade liberalization (e.g. ASEAN) and successful export-led strategies in recent years</li> </ul>	<p><b>Anti-Thesis 2 – Fig 1 &amp; 2 do not provide the full picture!</b></p> <ul style="list-style-type: none"> <li>Intra- emerging economies trade maybe caused by the shifting roles of these countries in the industrial chain due to changing CA, <u>not</u> due to decoupling (emerging economies are essentially large, intra-regional production-sharing networks)</li> <li>The vast majority of emerging economies’ finished output is still destined for developed economies ultimately</li> <li>Thus, any shocks in developed economy like US would still adversely affect demand for exports from these emerging economies – indirectly</li> <li><b>Analysis</b> – “Dependence” on US is exemplified by demand-deficient unemployment experienced in the industrial heartland in China (extract 6) – explain briefly</li> </ul>
<p><b>Thesis 3 – Other factors that could have aided decoupling</b></p> <ul style="list-style-type: none"> <li>There are other factors for consideration</li> <li>For instance, deliberate government intervention by emerging economies to make their domestic economies less susceptible to external shocks, especially in the wake of the US financial crisis, cannot be ruled out E.g. rising protectionism among developed countries in recent years</li> <li>This may further strengthen the “decoupling” school of thought</li> </ul>	<p><b>Anti-Thesis 3 – “Concertina” effect due to US financial crisis (Extract 5)</b></p> <ul style="list-style-type: none"> <li>The decline in trade ties with the US among emerging economies is more than offset by rapidly growing financial linkages</li> <li>Financial “contagion effect” has actually increased, not decreased over time</li> <li><b>Analysis</b> - Impact of US’ trade deficit and crisis of business confidence cannot be ignored (Extract 5)</li> </ul>
<p><b>Conclusion</b></p> <ul style="list-style-type: none"> <li>The validity of argument that decoupling has occurred is a highly contentious one</li> <li>Evidences for decoupling are credible but does not depict the full picture</li> <li>The effects of US economy on the emerging economies cannot be ignored e.g. “concertina” effect, demand-deficient unemployment</li> <li>Given the counter-evidences - the “decoupling” between US and emerging economies seems unlikely, at least in the short to medium-term.</li> </ul>	

**Mark Scheme:**

<b>Knowledge, Application, Understanding, Analysis</b>		
<b>L1</b>	<ul style="list-style-type: none"> <li>- Lacks balance: One-sided Max 3m</li> <li>- Purely theoretical, no reference to Case material: Max 3m</li> <li>- Limited scope and weak development of analysis with glaring concept errors</li> </ul>	<b>1 – 3</b>
<b>L2</b>	<ul style="list-style-type: none"> <li>- Balanced but inadequate scope &amp; depth in discussion</li> <li>- Some analysis with application of economic framework relating to how “decoupling” may or may not have taken place.</li> </ul>	<b>4 - 5</b>
<b>L3</b>	<ul style="list-style-type: none"> <li>- A thorough (adequate coverage) and balanced discussion with sufficient attempt &amp; effort to link to case material.</li> <li>- Sound analysis with good use of theoretical framework relating to how decoupling has or has not occurred.</li> </ul>	<b>6 - 8</b>
<b>Evaluation</b>		
<b>E1</b>	An unexplained judgement → An unexplained evaluative conclusion/comment	<b>1</b>
<b>E2</b>	Evaluative assessment supported by economic analysis → Substantiation of an evaluative comment and/or conclusion: Overall judgment of whether decoupling has taken place.	<b>2</b>

**TYS N2010 ESSAY Q1**

The price of sugar, an ingredient in many canned soft drinks, dropped dramatically by 32% between July 2006 and October 2008. Healthy living campaigns meant consumers became more aware of the possible health dangers of consuming too much sugar and they switched to 'diet' drinks that do not contain sugar.

Discuss how the combination of the fall in the price of sugar and the healthy living campaigns might affect expenditure by consumers on non-diet and diet canned soft drinks. [25]

**Dissect Question Using the 3'Cs'**

<b>C – Command word</b>	<b>Discuss:</b> Requires an explanation (SEE) and evaluation of the extent of change.
<b>C – Concept</b>	Demand and supply analysis with elasticity application (PED/PES/CED) Expenditure ( $P \times Q$ )
<b>C – Context</b>	Soft drinks- 2 markets (Diet and non-diet)

**Simple schematic plan:**

<b>Introduction</b>
- Define: total expenditure ( $P \times Q$ )
<b>Body</b>
Development 1: Explain and evaluate impact of non-diet soft drink market - Demand decreases and supply increases
Development 2: Explain and evaluate impact on diet soft drink market - Demand increases
<b>Conclusion</b>

**Introduction:**

Key words	Expenditure: Price x Quantity
Issue & Approach	Trigger for demand/supply change : "fall in the price of sugar and the healthy living campaigns"  The combination of the fall in price of sugar and healthy living campaigns could affect <u>both the demand and supply</u> of diet and non-diet canned soft drinks. Their <i>combined effect</i> on expenditure of the good depends on the resultant change in price and quantity of each good due to the demand and supply changes.

**Body:**

<b>Expenditure on non-diet soft drinks</b>	<b>Expenditure on diet soft drinks</b>
<b><u>Demand for non-diet soft drinks decreases</u></b>	<b><u>Demand for diet soft drinks increases</u></b>
<b>State:</b> Healthy living campaigns altered consumer's tastes and preferences for soft drinks  <b>Explain and exemplify (Diagram and its accompanied effects below):</b> More consumers now prefer the substitute, diet-soft drinks, as they become aware of health issues linked to sugar consumption → This decreases demand for non-diet → C.P, leads to total expenditure falling with a fall in price and	<b>State:</b> Healthy living campaigns have caused some consumers to "switch to 'diet' drinks that do not contain sugar"  <b>Explain and exemplify:</b> More consumers now prefer diet drinks due to health awareness leading to DD increases  Evaluate: However, some may switch to

quantity

### Supply for non-diet soft drinks increases

**State:** Decrease in price of sugar reduces cost of production for non-diet soft drinks, as sugar is an important input for production for non-diet soft drinks that rely on sugar to sweeten the drinks.

**Explain and exemplify (Diagram and its accompanied effects below):** Producers are therefore willing to sell more non-diet soft drinks at every price level as it is now more profitable to do so with lower cost of production. This increases supply for non-diet drinks

→ C.P., leads to price fall and quantity increasing

**Evaluate extent of change:** PED (Define)

Consumers' sensitivity to the price change due to the increased supply would depend on many factors. If habits are indeed changed such that there is a strong change in preference for diet soft drinks then price fall in non-diet soft drinks may lead to a less than proportionate increase in quantity demanded which means that expenditure will fall, C.P. (*Suggest 1 possible reason why you think PED is  $< 1$* )

[Combined effect]

### Changes in equilibrium price and quantity

- DD decreases from  $D_0$  to  $D_1$ , SS increases from  $S_0$  to  $S_1$
- Equilibrium price falls
- Equilibrium quantity increases if  $\uparrow SS > \downarrow DD$  (Fig. 1)
- Equilibrium quantity decreases if  $\uparrow SS < \downarrow DD$  (Fig. 2)
- Expenditure falls for both cases, and falls to a greater extent for when  $\uparrow SS < \downarrow DD$

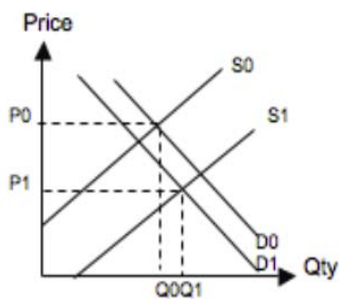


Figure 1

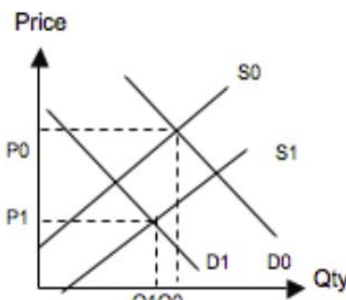


Figure 2

Evaluation:

*In the short run: it is likely that  $\uparrow SS > \downarrow DD$  since the price of soft drinks fell dramatically and soft drinks have a short production time. In the long run: it is likely that demand will continue falling if the health campaign has been successful and consumers of non-diet drinks are able to adapt their preferences to the substitute product without sugar. As a result, expenditure of non-diet soft drinks is likely to fall more.*

non-diet as the price of diet drink falls with lower cost of production leading to DD falling of diet drinks

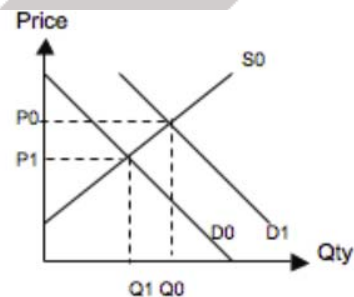
Overall demand for diet drinks increases as  $\uparrow DD > \downarrow DD$ . **Cross elasticity of demand (Define)** between diet and non-diet drinks is low. Consumers who preferred diet drinks in the first place may have already been health conscious and may perceive non-diet drinks as a poor substitute

### Supply of diet drinks is not affected by the two events

→ Sugar is not an input in diet drink production

### Changes in equilibrium price and quantity

- Demand increases from  $D_0$  to  $D_1$
- Eqm price increases from  $P_0$  to  $P_1$
- Eqm quantity increases from  $Q_0$  to  $Q_1$
- Expenditure increases



Possible evaluation:

Similarly, the demand for diet soft drinks is likely to increase with time.



**Conclusion:**

Expenditure on diet drinks increase and expenditure on non-diet drinks decreases, with the extent of change over time depending on extent to which consumers prefer diet over non-diet soft drinks.

Level	Mark	Descriptor
L3	15-21	For an answer that uses a clear analytical framework to show combined shifts and corresponding change in expenditure with application to the context given. Students were able to comment of the extent of shifts and apply elasticity concepts to evaluate the change in expenditure.
L2	9-14	For an answer that gives an analytical explanation of how demand and supply is affected in the 2 markets causing a change in expenditure. However answers lack depth or scope.
L1	1-8	For an answer that shows descriptive knowledge of demand and supply factors affecting the 2 markets.
E2	3-4	Explained evaluative comment
E1	1-2	Unexplained evaluative comment

**TYS N2010 ESSAY Q2**

Retailers in Singapore supply a wide range of services and products in a variety of market structures.

- (a) Explain the key differences between oligopolistic competition and monopolistic competition. [10]  
 (b) Consider different retailers in Singapore and discuss which of these two market structures best explain their market behavior. [15]

Dissect Question Using the 3'Cs'	
<b>C – Command word</b>	<b>Explain:</b> Requires an explanation (SEE)
<b>C – Concept</b>	Key differences in characteristics, price and output and profit levels of different market structures
<b>C –Context</b>	Oligopoly and Monopolistic competitive markets

**Q2 Part (a)****Note:**

From Cambridge feedback, the good scripts are those that included the following:

- Able to link the key characteristics together and the implications of the differences to pricing decisions.
- Show the difference in profits level in the long-run with AWESome diagrams.

**Introduction**

<b>Key Words</b>	An oligopolistic market structure consists of few dominant players with high entry barriers. Whereas with no or little barriers to entry, monopolistic competition is characterized by a large number of small firms, each of which produces/provides a <b>slightly</b> differentiated product/service.
<b>Issue &amp; Approach</b>	The key differences between oligopolistic competition and monopolistic competition can be explained under contrasting features, market behavior and performance in terms of profit levels in the long run.

**Note:** It is not meaningful to compare profits in the short-run as all firms can earn any of the 3 types of profits, namely, supernormal/abnormal, normal and subnormal profits in the short-run.

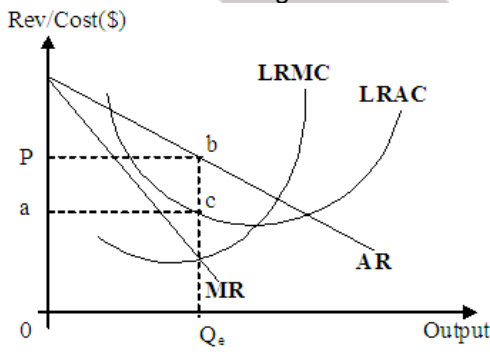
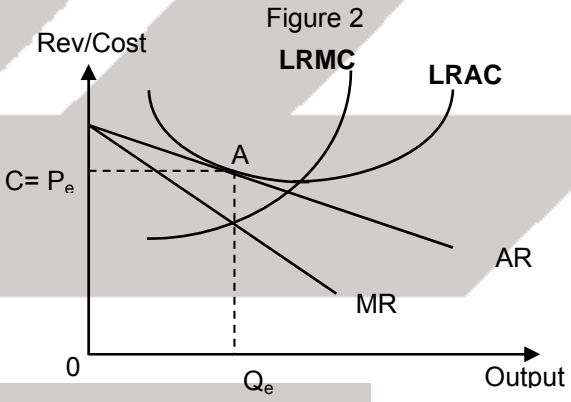
**Note:** To explain the differences, it is important that candidates do not contrast the individual characteristic by itself. A good answer will attempt to link related points together. E.g. Oligopoly has a few dominant firms due to the high barriers to entry in contrast with monopolistic competition as there are no barriers to entry.

## Body

### Differences in Characteristics / Features leading to different behaviour and profits in the long-run

Features	OLIGOPOLISTIC COMPETITION	MONOPOLISTIC COMPETITION
Number of firms	<b>Market dominated by a few large producers and each with significant market share.</b> <i>*Examples: A few major players in fast-food chain and telecommunication retailing.</i>	<b>Large number of small firms and each with insignificant market share.</b> <i>*Examples: Many small players in local food business, hawker stalls and bubble tea shops.</i>
Barriers to entry and exit	<b>High barriers to entry/exit</b> <ul style="list-style-type: none"><li>Firms are unable to enter freely the industry. The barriers are high enough to prevent entry of new firms.</li><li><i>Examples: Telecommunications retailing characterized by high legal barriers, high start-up costs, extensive EOS etc.</i></li></ul>	<b>No barriers to entry/exit</b> <ul style="list-style-type: none"><li>New firms are free to enter an industry and existing firms can leave the industry without much difficulty.</li><li><i>Examples: Food stalls, bubble tea shops – relatively low start-up costs, low legal barriers, limited EOS</i></li></ul>
Nature of Product	<b>Product can be homogenous OR differentiated.</b>  <b>Homogenous product</b> The products sold by the firms are <b>identical</b> and of the same quality.  <i>Example: Crude oil – The product is so highly standardized to the point that consumers are assured the quality is the same no matter which seller supplies this product. Consumers are not brand-conscious.</i>  <b>Differentiated products</b> For differentiated products – Real and/or imaginary (perceived) differences can exist. Products may vary in terms of attributes, service, accessibility, branding and packaging.  <i>Example: Cars – Cars are deemed to be a means of transportation to carry one from a destination to another. Yet, different brands and models are meant differently to the consumers. From the engine power, the design, safety concerns and even the brand names are different.</i>	<b>Differentiated product.</b> Though similar to oligopolistic competition for differentiated product, generally, the products/services here are only <b>slightly</b> different.  <i>Examples: Local hawker food - Real differentiation in terms of cooking style and ingredient and imaginary based on packaging.</i>  <i>As firms do not have high supernormal profits like the oligopoly as there are numerous of firms selling similar products, the differentiation is not prominent.</i>



<b>Price and Output Determination and Non-price Strategies</b>	<p>Firms are price-setters as they have monopoly power over their products / services. However, their business strategies are influenced by mutual Inter-dependence (i.e. actions/reactions of rivals) Either: Collusive vs non-collusive behaviour</p> <p>Example: <b>Pricing strategy</b></p> <ul style="list-style-type: none"> <li>Consider actions/reactions of rivals closely. Typical model is the Kinked demand curve model of price rigidity</li> <li>At the other extreme, firms might engage in price wars.</li> <li>Generally, firms will focus on non-price competition such as product development or promotion as mentioned above.</li> </ul>	<p>Firms are price-setters since their products / services are slightly differentiated.</p> <p>Unlike oligopoly firms, monopolistic firms do not need to consider the actions/reactions of rivals in formulating business strategies. They make business strategies independently.</p> <ul style="list-style-type: none"> <li>Each firm has only a very insignificant market share and the product sold is slightly differentiated. Hence, the actions/reactions of rivals do not impact very much on their market share.</li> <li>There is no danger of losing substantial market share to rivals nor is there the prospect of gaining substantial market share through aggressive pricing and promotion strategies.</li> </ul>
<p><b>Note: Do not 'over-write' on the above point and overlap with part (b). It is more for comparison. In this case, details should be covered in part (b).</b></p>		
<b>Profits in the long-run</b>	<p>Explain firms are able to retain the supernormal profits in the long-run due to high barriers to entry.</p> <p style="text-align: center;">Figure 1</p>  <p>From Figure 1, at the profit maximizing output where <math>MC=MR</math>, the firm has a total revenue of <math>OP_bQ_e</math> and total cost of <math>OaQ_e</math> and will earn supernormal profit of <math>Paba</math>.</p>	<p>Explain firms only earn normal profits in the long-run as supernormal profits in the short-run will result in entrance of new firms and the existing firms will experience a drop in demand as consumers turn to substitutes.</p> <p style="text-align: center;">Figure 2</p>  <p>From Figure 2, at the profit maximizing output where <math>MC=MR</math>, the firm has a total revenue of area <math>OP_eA Q_e</math> and is the same as total cost, <math>OCAQ_e</math>, thus earning normal profit.</p>

## Conclusion

As a result of no barriers to entry, firms in a monopolistic competition sell slightly differentiated products, and though they are price-setter and independent, they earn only normal profits in the long-run. On the other hand, there are huge barriers to entry in an oligopoly and thus there are a few dominant firms and they are price-setter. As there are few large firms, they are mutually dependent in their pricing strategy and able to retain supernormal profits in the long-run.

Level	Mark	Descriptor
L3	8 – 10	Clear analysis with diagrams to explain differences between the 2 market structures.
L2	5 – 7	Incomplete analysis to explain for differences between the 2 market structures.
L1	1 – 4	Answer shows some knowledge of the 2 market structure but does not show that question has been fully grasped.

Consider different retailers in Singapore and discuss which of these two market structures best explain their market behavior. [15]

Dissect Question Using the 3'Cs'	
<b>C – Command</b> word	<b>Consider:</b> Needs to weigh and make a reasoned judgment to address the word “best”
<b>C – Concept</b>	Examine features, price and output, profit levels of market structure/ explaining what is observed in real world
<b>C –Context</b>	Retailers in Singapore

#### Pointers:

Rephrase the question: Which market structure **best** explains the **market behavior** (i.e. business strategies, both price and non-price strategies, employed to sell their products in the market) of **retail firms in Singapore?**

#### Value Add to part (a).

Due to time constraint, candidates should **not** repeat answers they have written in part (a) which **explains** the market behaviors of oligopoly and Monopolistic competition. Focus on the **Application based on what has been analysed in part (a)**. Students need to apply specific contexts of retail (not manufacturing!) businesses in Singapore for this question.

#### Simple schematic plan

<b>Introduction</b> Retailing refers to the sale of products and services to the final/end consumers. Retailing covers a broad spectrum of industries ranging from petrol retailing, telecommunication companies, hawkers to online blogshops. Using appropriate examples, I shall discuss why retailers in Singapore could either be operating in oligopolistic as well as monopolistically markets.	
<b>Body</b>	
<b>Thesis</b>	<b>Anti-Thesis</b>
Oligopoly can explain the market behavior of many retailers in Singapore Case 1 – Petrol retailing ( petrol kiosks) Case 2 – Supermarket chains	However, some forms of retailing exhibit the market behavior of monopolistic competition. Case 1 – hawker food; bubble tea retailing Others – hairdressing/haircuts; beauty salons etc.
<b>Synthesis</b> There can be “transition” of market structures in certain case.	
<b>Conclusion</b> Provide final judgment that oligopoly still explains the market behavior of many retailers in Singapore, but there are exceptions.	

#### Introduction

<b>Key Words</b>	Retailing refers to the sale of products and services to the final/end consumers and the retail industry is a major sector of the Singaporean economy. Retailing covers a broad spectrum of industries ranging from petrol retailing, telecommunication, hawkers to online blogshops. Oligopoly and monopolistic competition are the two common market structures among retailers in Singapore.
<b>Issue &amp; Approach</b>	I shall discuss why retailers in Singapore could either be operating in oligopolistic or monopolistic competitive markets.

## Body





### (I) Thesis: Oligopoly best explains the market behavior of retailers in Singapore

In retail markets where the firms are few and large, I shall highlight 2 good examples found in Singapore context

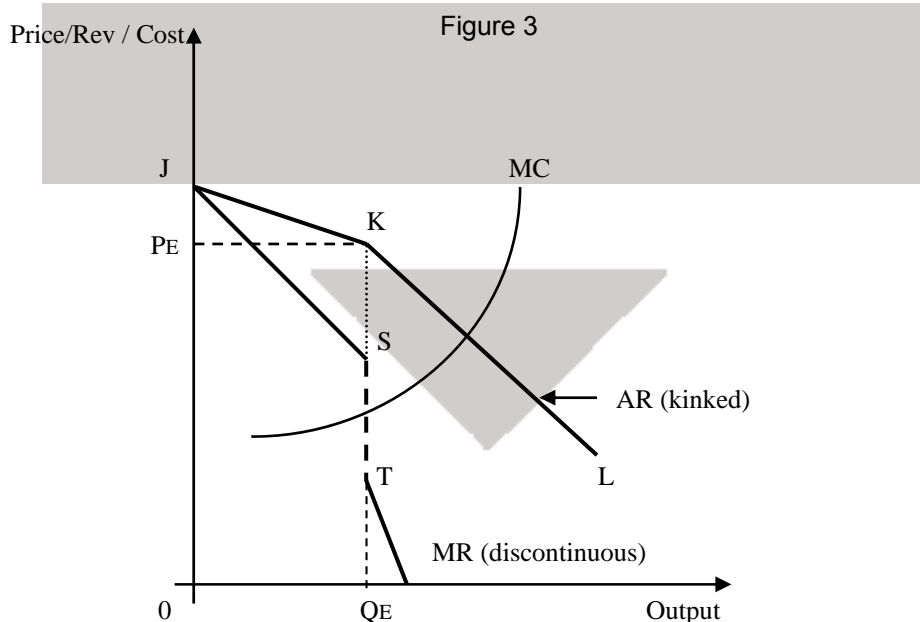
#### Case 1a- Petroleum Retailing

##### Market features:

- Few large firms relative to market size (e.g., Singapore Petroleum Company (SPC), ExxonMobil, Shell, Caltex)
- Significant barriers to entry (e.g. petrol stations, storage facilities, tank trucks)
- Differentiated (Note: Though petrol itself maybe rather homogeneous, they are sold under different “iconic” brand names and together with different service, they are deemed different by consumers.)
- Petrol kiosk chain operators e.g. SPC, ExxonMobil and Shell are notable examples of **non-collusive (competitive) oligopolies** due to the unique characteristic of **mutual interdependence (should be elaborated in part (a))**.
- Pump prices tend to be “uniform” at various petrol kiosks throughout the year for the 3 different grades of petrol, 92, 95 and 98.

	92UL	95UL	98UL	PREMIUM	DIESEL
 CALTEX	2.030	2.080	NA	2.215	1.630
 ExxonMobil	2.030	2.080	2.140	NA	1.630
	NA	2.080	2.140	2.340	1.635
 SPC	2.030 ▲	2.080 ▲	2.130 ▲	NA	1.620 ▲

- This **price rigidity** can be explained using the **kinked demand-curve model**.



Refer to Figure 3

- $OP_E$  &  $OQ_E$  represent the prevailing market price & quantity respectively where  $MC=MR$  for profit maximizing level. Point K marks the kink.
- Assuming rival petrol firms do not match price increases, if say SPC raises its price independently above  $P_E$ , it will find its quantity sold fall more than proportionately as most of his customers will switch to the relatively cheaper substitute in ExxonMobil, Shell and Caltex. Hence, at output prices above  $P_E$ , the oligopolist faces a relatively price-elastic demand (AR) curve.
- By the same argument, as rival firms are assumed to match any price reduction, SPC when lowers its price will not sell proportionately more of its output, so it faces a relatively price inelastic demand curve at prices below  $P_E$ .
- The result is a **kinked demand curve** consisting of 2 distinct demand segments, one that is price elastic & the other which is price-inelastic.
- The price is 'rigid' at  $P_E$

**Note: Cambridge has given feedback numerous times on the inaccuracy of the diagram. Make sure AR and MR are not parallel. The AR is twice the slope of MR.**

### **Price-leadership**

However, it does not mean the petrol companies do not change price at all.

For example, in the recent pump price revision in Jul 2011, the Petrol 92 and 95 are priced S\$2.03 and S\$2.08 in all the petrol stations in Singapore. Why? No explicit collusion (e.g. price fixing or cartel because it is outlawed). But, there seems to be tacit collusion in the form of **price leadership**. The revision of prices among the various firms occurred within days after one raised its price.

**Nonetheless, petrol companies do not compete base on price or revise pricing frequently (usually only when crude oil price is exceptionally high). Usually, they focus on non-price competition.**

### **Non-Price Competition**

- Instead of price competition, the petrol retailer would focus more on non-price strategies.
- For example, petrol kiosks branding their unique quality of their product as well as offering complementary services like car wash, mini-supermarkets; gifts; contests and credit facilities to draw customers.
- Thus, the petroleum retailers' market behaviour adheres to the kinked-demand curve model of a non-collusive oligopoly to a large extent.

### **Evaluation**

- However, occasionally price wars do erupt or breakout among the retailers especially in a downturn. But again, this is only temporary and last only for a few days. It seems to be more of a publicity stunt than real price-war.
- Other non-price behavior of petrol retailers that strengthen the case of oligopoly: Merger (exxon-mobil in 1999), market penetration (presence of many outlets at key traffic junctions, expressways)

### **OR Case 1b - Telecommunication Companies**

#### **Market features**

- Few large firms relative to market size (Market Concentration Ratio of 3 firms of SingTel, Starhub and M1 is 100%)
- Significant barriers to entry (e.g. satellites, government license, etc)
- Pricing for basic subscription plan is the same and similar pricing for others.
- Focus on non-price competition such as the quality of reception, joint promotion with mobile phones brand/models, number of incoming calls/SMS, customer loyalty points and lots of advertising.

## Evaluation

Nowadays, to make pricing 'ambiguous' to the customers, the companies have been trying to bundle services together. Offers such as a 'promotional package' of mobile phone line with land-line, internet and pay-TV services are bundled and charge a seemingly attractive pricing.

*Note: Given time constraint, you may not be able to use another example to further exemplify/substantiate your analysis. So the tip is to use ONE GOOD example to illustrate all the main points (kinked demand curve, price-leadership, price war and non-price competition). Do not choose an example that can only illustrate one point and not the others. Nonetheless, it is acceptable to use different retailers to illustrate different main points.*

## (II) Anti-Thesis: Oligopoly does not fully explain market behaviour of some retail firms in Singapore

Besides big retailers there are **small retailers** that operate in other industries in Singapore where the market structure resembles monopolistic competitive model rather than oligopoly.

### Case 2a: Online Blogshops selling ladies apparel

- **Many** blogshops selling ladies apparel in the Internet with **insignificant market shares**.
- **Low to zero barriers to entry/exit**: Internet start up costs is minimal – setting a blog is free and the only thing is the knowledge to set up a blog. The cost of the items sold on the internet can be low, depending on the quality and quantity the owner wants to sell. As a result, the cost of exit is low too as sellers can exit without much penalty. She can simply sell the clothes to other sellers, wear the clothes herself or give away as gifts.
- **Slight product differentiation**: Sellers can try to scout for different designs in other countries that cannot be easily found on other blogshops together with customized service such as free delivery, award points for consumer's loyalty, etc. It can also advertise in different websites.
- As a result, the owners of the blogshops can **price independently** and prices are not the same for the blogshops. This means, they need not lower price when a competitor lowers its price.
- In fact, even if they were to undercut their rivals the impact is unlikely to be significant as their share of the total market is negligible.
- Typically such firms earn **normal profits in the long run** limiting their ability to expand the scale of the businesses and to innovate.

### OR Case 2b: Chicken Rice sold in Hawker Centres

Dining at hawker centre is part of the Singapore culture. There are hawker stalls such as chicken rice stalls located in hawker centres spread across Singapore. Each of these stalls has only an insignificant market share.

- Barriers to entry relatively low (e.g. inexpensive to rent a stall space, buy cooking equipment; usually small family business)
- Product (Services) tend to be slightly differentiated (e.g. in location, different styles of cooking; service etc)
- Price is not the same for every stall.
- As monopolistically competitive firms, their selling point is in "differentiating" their products from those of their rivals e.g. personalized service; good location; yummy chilli sauce etc

## Evaluation

In some industries, small retailers co-exist with big establishments. Examples, Breadtalk and Four Seasons with huge market shares are found in the midst of the confectionary shops, Jean Yip amongst the beauty salon, etc. In fact, with franchising and internal expansion, more and more traditionally monopolistic competitive industries are growing bigger and behave more like an oligopoly.

**Conclusion**: In Singapore, oligopoly best explains the market behaviour of big and mid-size retail enterprises where barriers to entry are high, Economies of scale are extensive, with firms exhibiting mutual interdependence in pricing behavior. For industries where barriers to entry are low and economies of scale are limited, firms exhibiting independence in pricing behavior, the monopolistic competition model seems to be more applicable.

Level	Mark	Descriptor
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L3	9-11	Well-elaborated answer with diagrams to give a reasoned explanation of the best market structure to account for market behavior of retailers in Singapore.
L2	5-8	Able to give analysis to market behavior but with little application to retailers in Singapore/analysis is incomplete.
L1	1-4	Answer shows limited knowledge of market behavior of firms but little/no application to Singapore context
Evaluation		
E2	3-4	Ability to comment in the context of Singapore, to give a reasoned judgment about the market structure that is most observed.
E1	1-2	Evidence of some evaluation.

### TYS N2010 ESSAY Q3

- (a) Explain why government intervention is advocated in the markets both for public goods and for goods where externalities are present. [12]
- (b) In the UK, entry to national museums and art galleries is free of charge and tickets to see the opera are heavily subsidised. In contrast, in Japan, entry to national museums and art galleries comes at a high price and a ticket to see opera is among the most expensive in the world.

Assess the economic case for these two different approaches. [13]

- a) Explain why government intervention is advocated in the markets both for public goods and for goods where externalities are present.

Dissect Question Using the 3'Cs'	
<b>C – Command word</b>	<b>Explain</b>
<b>C – Concept</b>	Market failure (Efficiency) -Public good - Externalities
<b>C –Context</b>	Give own examples

Simple schematic plan:

Introduction
Body
Development 1: Explain public goods resulting in complete market failure Non-excludable (Free-rider problem) Non Rivalry (MC=0)
Therefore government intervenes to provide what is socially optimal.
Development 2: Explain externalities resulting in under/over consumption/production
Therefore government intervenes to increase/decrease to socially optimal amounts.
Conclusion

INTRODUCTION	
Key words	Adam Smith's invisible hand says that, as individual maximize their self- interest, they are led by market prices to maximize society's interest, leading to allocative efficiency.
Issue	Market failure occurs when free markets, operating without any government intervention, fail to deliver an efficient allocation of resources to produce goods and services.
Approach	This essay will be explaining why the market mechanism will fail to provide the correct prices for both public goods and goods with externalities, allowing government intervention to improve resource allocation.



## BODY

### Public Goods

For public goods, use the standard SEE approach

S: A public good is non-rivalry in consumption

E: Non-rivalry in consumption: an additional person consuming the goods does not diminish the amount available to others. Hence, the marginal cost of providing the good to one more person is zero. If the marginal cost is zero, the efficient price to charge should be zero ( $P = MC$ ). If a price were charged, there would be a welfare loss to society. But no private firms who are assumed to be profit-motivated would be willing to supply the good at efficient levels if the price is zero!

E: Street lighting: an additional person enjoying the streetlight does not mean the light becomes dimmer.

S: A public good is non-excludable in consumption

E: Non-excludability in consumption: Once provided, it is not possible / is costly to prevent non-payers from consuming the good.

E: Street lighting: once street lighting is provided, it is not possible / is costly to collect payments from users. Hence, non-payers could also get to enjoy the good.

Due to the characteristic of non-excludability in consumption of public goods, this leads to the problem of free ridership; **there is a lack of price signal, leading to zero production, resulting in complete market failure.**

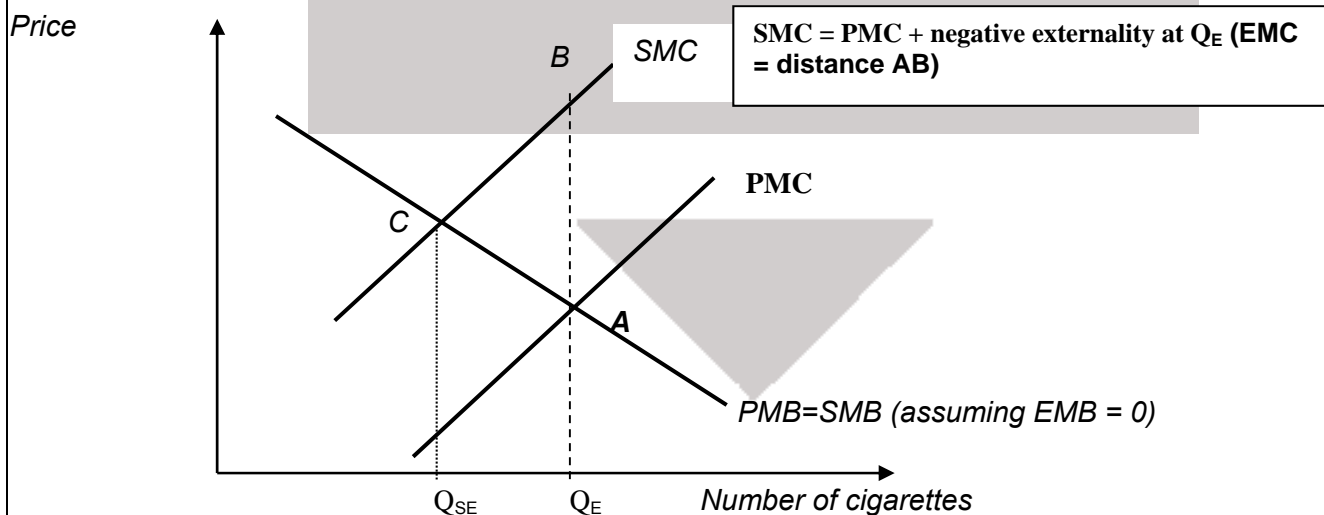
**Government can improve resource allocation by providing the good and charge the entire society through compulsory taxation.**

### Goods with externalities (positive and negative)

Using SEED approach

- Individuals consider only private cost/benefits in deciding whether to smoke the next cigarette, to go for another year of education.
- Give examples of such costs/benefits.
- By smoking/getting educated, there are external costs/benefits to 3rd parties.
- Give examples of such costs/benefits
- Individuals will decide on amount of cigarettes smoked or amount of education by equating  $PMB = PMC$  for final unit.
- However, allocative efficiency requires  $SMB = SMC$  for final unit.
- Resulting in the wrong consumption, leading to deadweight losses.
- Draw a diagram to illustrate all these points clearly.

**Example in the case of smoking** (Students should have one explanation each for positive and negative externality)

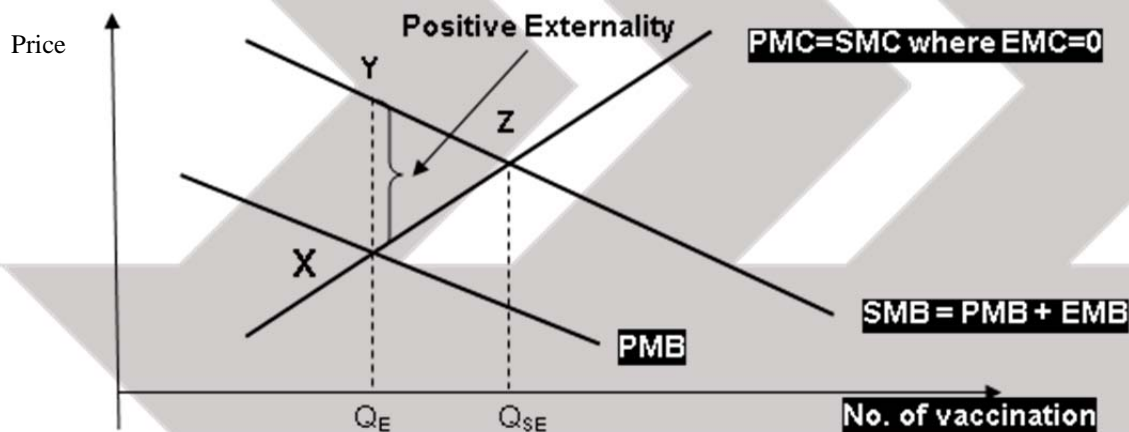


In the diagram above, the **market equilibrium** occurs at  $Q_E$  when producers and smokers account only for their private benefit and cost i.e.  $PMB=PMC$ . However, due to the presence of negative externalities (EMC which is measured by

distance AB) of second hand smoke, the social cost of smoking is higher than the private cost. Hence, the social equilibrium occurs when society takes into account of the negative externalities when **SMB=SMC** at  $Q_{SE}$  (assuming no positive externalities present,  $PMB=SMB$ ) **There is an overconsumption of cigarettes by  $Q_E - Q_{SE}$ . The overconsumption created an increase in social cost of  $BCQ_{SE}Q_E$ , while the increase in social benefit is only  $ACQ_{SE}Q_E$  resulting in a deadweight welfare loss of ABC.**

#### For positive externalities (example flu vaccinations)

- Assume that this activity only results in positive externality; and not negative externality i.e.  $EMC=0$ . Thus,  $PMC=SMC$ .
- In perfectly competitive market, the equilibrium outcome will be at point X of output  $Q_E$  where  $PMB=PMC$ .
- But due to the positive externality, the actual benefit to the society is represented by Social Marginal Benefit (SMB) which takes into account the full benefit to society of the influenza vaccination. SMB lies above PMB, as it includes both PMB and external marginal benefit (EMB). Hence, the allocatively efficient output should be  $Q_{SE}$  where  $SMC=SMB$  and not  $Q_E$ .
- Hence, there is **underconsumption** of  $Q_E - Q_{SE}$ .
- Area  $YZQ_{SE}Q_E$  is the incremental social benefit for  $Q_E - Q_{SE}$ .**
- Area  $XZQ_{SE}Q_E$  is the incremental social cost for  $Q_E - Q_{SE}$ .**
- Area XYZ represents the welfare loss from the underconsumption of  $Q_{SE} - Q_E$  because if left to the market i.e. without government intervention, the outcome will be  $Q_E$ .**



Thus, either the price is too low (for smoking case since it only measures private costs), or too high (for education since it only measures private benefits).

Government can step in to adjust the price, through taxes and subsidies, to ensure resources are efficiently allocated, eliminating the deadweight loss.

#### CONCLUSION

Thus, when prices are absent from the economy (the case of public goods) or when prices incorrectly reflect the true social costs and benefits to society (the case of externalities), allocative efficiency may not be reached with the price mechanism. Hence government intervention can improve resource allocation.

Level	Mark	Descriptor
L3	9 – 12	Clear analysis/explanation (For externalities: with diagrams) to demonstrate inefficiency leading to market failure.
L2	5 – 8	Incomplete analysis to explain for market failure.
L1	1 – 4	Answer shows some knowledge of the sources of market failure but analysis is inaccurate.

- b) In the UK, entry to national museums and art galleries is free of charge and tickets to see the opera are heavily subsidized. In contrast, in Japan, entry to museums and art galleries comes at a high price and a ticket to see opera is among the most expensive in the world.

Assess the economic case for these two different approaches.

(13)

Dissect Question Using the 3'Cs'	
<b>C – Command word</b>	<b>Assess: Evaluate</b>
<b>C – Concept</b>	Application of (a): Nature of good (Not pure public good, merit good?)
<b>C – Context</b>	Museums and art galleries (differences in UK and Japan)

### Simple schematic plan

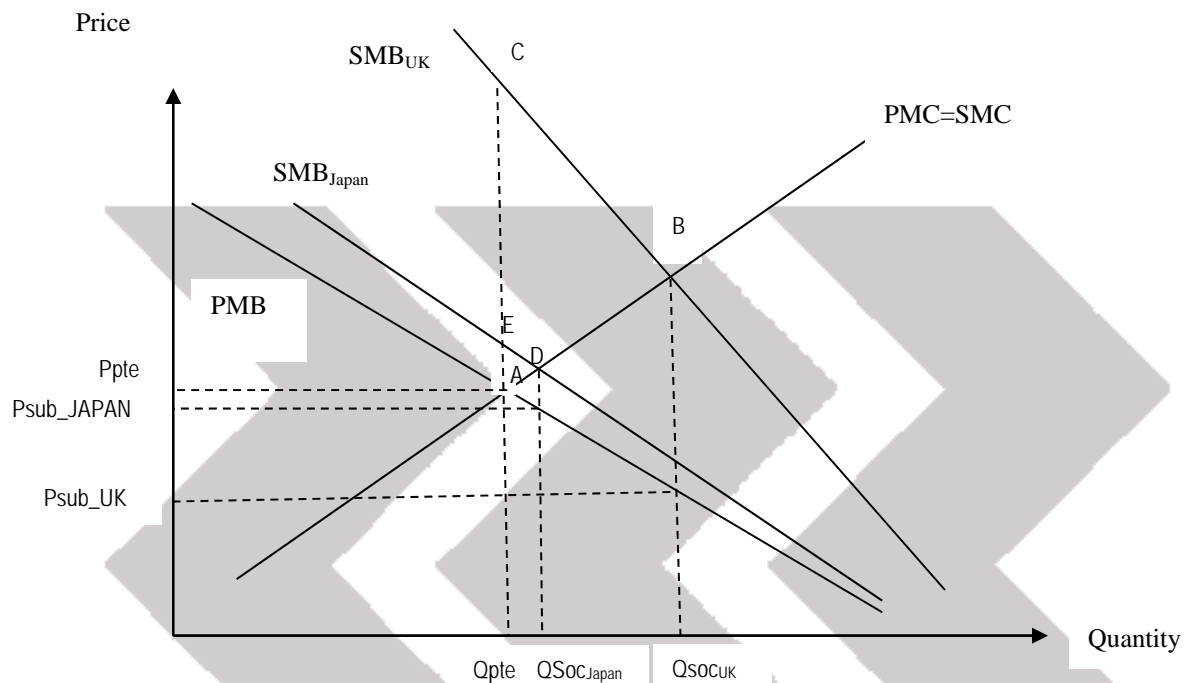
<b>Introduction</b>	
<b>Development:</b>	
Body 1: Explaining that museums and art galleries are not pure public goods.  Body 2: Explaining that they are deemed as merit goods especially as exemplified by UK government. Therefore they are heavily subsidized if not directly provided	However, UK enjoys greater amount of positive externalities as compared to Japan  UK places a greater emphasis on equity as compared to Japan. Therefore there is less intervention in Japan's market
<b>Synthesis</b>	

### **Introduction**

- The two main arguments for the subsidizing museums, art galleries and operas are **positive externalities** and **equity**.
- The government would intervene and subsidise to increase consumption if they believe it is a merit good. Therefore in my essay I would discuss how the different governments treat this goods differently.

### **Development**

- Both museums and operas are excludable as it would be possible to allow entry by ticket only. Museums (if not crowded) are likely to be non-rival as the enjoyment of the museum by one person does not diminish the quantity available for consumption by another person. Operas on the other hand are likely to be rival as the tighter space constraints and acoustic effects imply that one person's enjoyment of the opera will reduce the number of seats available for other consumers. Museums, and operas are therefore not public goods but the non-rival nature of museums meant that the MC of supplying a museum to one extra visitor would be zero. Setting  $P=MC=0$  to maximise welfare led to free entry to museums.
- They are generally viewed as merit goods as they generate positive externalities to the society:
  - (i) They generate national pride enjoyed by everyone.
  - (ii) They leave important legacies for the next generation.
  - (iii) Artistic innovation benefits other artists. Unlike in many other fields, it is not generally protected by intellectual property laws.
  - (iv) Their provision contributes to education, which provides wider civil benefits.
  - (v) They encourage tourism from abroad, and so benefit the wider economy.
- Japanese government was willing to leave both museums and operas to private markets as the externalities were considered to be zero or negligible, whilst in the UK the government considered them to be high. As the demand was likely to be inelastic this leads to high prices.



- With reference to the diagram above, assuming that the private benefits derived in UK and Japan are the same, both economies' marginal private benefit in the market is shown by the PMB curve. As people are self-interested, they ignore externalities and consume/produce where their  $PMB = PMC$  at  $Q_{pte}$ . We assume in this case that there are no external costs and the costs incurred in UK and Japan are the same. Hence  $PMC = SMC$  for both economies.
- In the case of UK, as the government deems that there are huge external benefits to the consumption of the museum and arts, the  $SMB_{UK}$  is very much higher than the PMB. As such the socially optimal level of museum and arts consumption is very much higher where  $SMB_{UK} = SMC$  at  $Q_{soc_{UK}}$ . The welfare loss from consuming at  $Q_{pte}$  is triangle ABC.
- In the case of Japan, because the government does not view the consumption of the museum and the arts as a good with extensive external benefits. As such,  $SMB_{Japan}$  is not very much higher than PMB. Hence  $Q_{soc_{Japan}}$  is not very much higher than  $Q_{pte}$ . The welfare loss from consuming at  $Q_{pte}$  instead of  $Q_{soc_{Japan}}$  is much smaller at triangle ADE.
- The ideal amount of per unit subsidy to affect the  $Q_{soc}$  level of output for UK and Japan is BC and DE respectively. As these per unit subsidies are actually equivalent to the EMB at  $Q_{soc}$  level of output, the subsidy in UK is much higher than the subsidy in Japan since the perceived EMB is much higher in UK than in Japan. It follows that the subsidised price enjoyed in UK will be much lower compared to the subsidised price in Japan, if any in Japan are to be provided in the first place, since the external benefits are so negligible. Given that external benefits are negligible and the subsidised price therefore not much lower than the free-market price, the government is likely to let the free market determine the price of museums and the arts.
- The consumption of museums and arts is not equitable. At market prices, those on low incomes could not afford the ticket prices. Subsidies are therefore needed so that the poor are not excluded from enjoyment of the arts. Redistributing income is not a solution because art is a merit good, "desirable to provide in quantities greater than consumers would wish to purchase at market prices."
- **Argue that: UK enjoys greater amount of positive externalities as compared to Japan**
  - Arts investment plays a vital role in the journey from talent to the creative industries, which are fundamental to the future competitiveness of British business. Between 1997 and 2006 the creative economy grew faster than any other sector, accounting for 2 million jobs and £16.6 billion of exports in 2007.
  - Arts and culture are central to tourism in the UK: this was worth £86 billion in 2007 - 3.7% of GDP - and directly employed 1.4 million people. Inbound tourism is a vital export earner for the UK economy, worth £16.3 billion to the UK economy in 2008.
  - The UK has the largest creative sector in the EU, and relative to GDP probably the largest in the world. Japan's creative sector on the other hand is smaller relative to its GDP.

- Japan's creative industries employment as a ratio to total employment is lower as compared to UK. (3.2% in Japan (2001 survey data) as compared to 4.6% (97-98 survey data))

▪ **Argue that: UK places a greater emphasis on equity as compared to Japan**

- Traditionally, only a very small fraction of Japan's population visited art galleries and the opera as they are considered not a necessity.
- This contrasts with UK where more people viewed it as a necessity.
- The above diagrammatic analysis assumes that people in UK and Japan derive equal benefits from museum and the arts. Culturally, the arts are more a part of the lives of the UK people compared to the Japanese. Hence demand is likely to be more price-inelastic and more benefits are derived from the arts and the museums. This would make the free-market price in UK much higher and all the more warrant a subsidy by the government to make it affordable.

**Possible Evaluation**

**Opportunity cost of subsidy:** The challenge for UK is getting sufficient funds to finance the heavy subsidies for opera and operation of national museums and art galleries so that they are free for UK citizens. It needs to set a tax rate that is reasonable and does not cause disincentive to work which may in turn slow down the UK economy.

UK, in light of the current Euro crisis, may wish to reconsider this "wasteful" use of government funds.

**Government failure:** The government should definitely not be running these cultural sites as they are unlikely to do a good job. Even if private firms are the ones running these cultural sites, subsidizing to such a great extent for national museums and art galleries for free visits might cause inefficient behavior.

In a free market without government intervention, museums/art galleries which are well run should expand, and those who did not do a good job should close down.

If you subsidize all the museums, it might make the private firms running these museums complacent to consumer preferences, and might also result in X-inefficiency problems. (to be covered later under market structure)

**Conclusion**

UK and Japan adopted two different approaches in funding of museums and the arts. One reason is due to the different amount of positive externalities gained by the whole economy, with the UK economy gaining more as compared to the Japan economy. Hence government funding is more significant in UK. Besides differences in the amount of positive externalities, tax incentives also influenced the final price paid by consumers to museums, art galleries and operas. In UK, more art organisations are tax-exempt organisation and private donors to these organisations received tax benefits by having to pay lower amount of taxes to the government. On the other hand, there are less such organisations in Japan. Without much private funding to complement public funding, consumers must rely on their personal income to pay for admission. Furthermore, Japan focused more on cultural conservation and less so on promoting arts whereas UK placed more emphasis on promoting arts. Therefore these explained the scenario presented in the preamble with consumers in Japan paying much more as compared to their counterparts in UK.

Level	Mark	Descriptor
L3	9-11	Well-elaborated answer with diagrams to give a reasoned discussion for the different arguments why the governments treat arts galleries and museums differently.
L2	5-8	Able to give some analysis about art galleries and museums being merit goods but unable to give sufficient explanation why the governments intervene differently.
L1	1-4	Answer shows limited knowledge of the nature of goods.
Evaluation		
E2	3-4	Reasoned judgment.
E1	1-2	Evidence of some evaluation.



### TYS N2010 ESSAY Q4

The recent worldwide recession caused many governments to re-assess their use of fiscal policy in order to stimulate their stagnating economies.

(a) Explain what would reduce the effectiveness of fiscal policy as a stimulus to the Singapore economy [10]

(b) Assess alternative policies that might be more appropriate in managing the Singapore economy when faced with a worldwide recession. [15]

Dissect Question Using the 3'Cs'	
<b>C – Command word</b>	<b>Explain:</b> Use SEE approach
<b>C – Concept</b>	Factors affecting effectiveness of using fiscal policy (limitations) as an expansionary tool
<b>C – Context</b>	In the Singapore context

Simple schematic plan:

Introduction		
Body		
Part 1: Multiplier effect explained [to lead in to factor (a)]		
Part 2: Factors affecting effectiveness of policy		
(a) Size of multiplier	(b) Size of G relative to other components on AE	(c) Others: Eg. External factors / conditions, confidence of households/firms (in relation to tax cuts) during recessions etc.
Conclusion		

#### Introduction

Key words	Discretionary fiscal policy, stimulate econ growth
Issue & Approach	Discretionary fiscal policy can be used to counteract the lack in <b>private demand</b> by an increase in government spending, G and/or to encourage greater private consumption and investment with cuts in taxes, T.
	Factors that reduce the effectiveness of fiscal policy in Singapore.
	The extent of effectiveness depends on the size of the multiplier in Singapore, size of domestic market to AE/AD, consumer and business optimism, flexibility of the government and policy time lag.

#### **Suggested Answer**

##### **Explain how fiscal policy works**

Explain fiscal policy as a demand-management policy to address the recession due to the current global crisis

Expansionary fiscal policy is relevant in this case, entailing either an increase in government spending (G) and/or a decrease in taxes. Increase in G increases AD directly, while a cut in corporate/income tax (either decrease MPT or specific tax) indirectly encourages investment/consumption, which are components of AD.

Explain using a diagram how this leads to an increase in AD and hence GDP growth through the multiplier effect. (Note: can use either an AE or AD/AS diagram)

##### **Explaining the multiplier effect:**

- As **government spending is a component of aggregate expenditure (AE)**, this increases the level of AE and leads to an unplanned decrease in stocks. As firms increase production to increase their stock levels back to desired levels, they hire more workers (as well as other factors of production), employment and



hence national income increases.

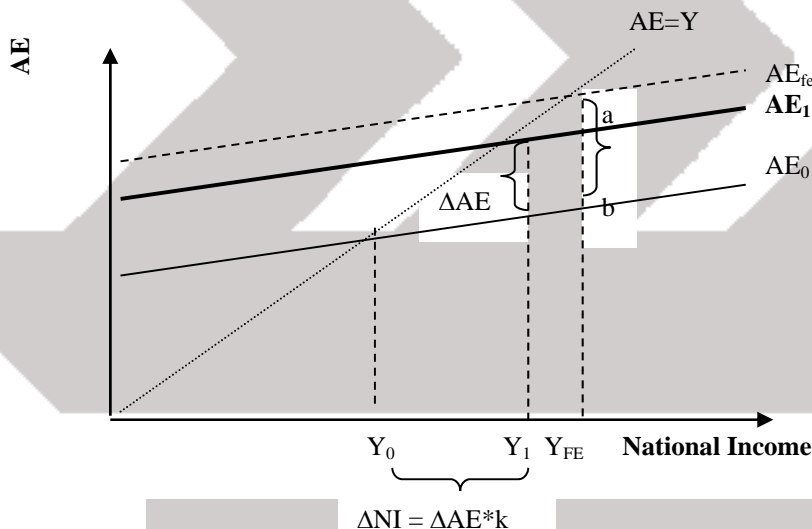
- Through the multiplier effect, the higher income induces an increase in aggregate consumption.
- This leads firms to hire more workers again to meet the rising demand for goods and services and national income rise a second round.
- This second round increase in national income induces another round of consumption, leading to a third round increase in national income.
- With each successive round of increase in income, the amount of leakages or withdrawals, in terms of savings, taxes and import expenditure, also rises.
- This process will continue until the leakages have risen by the same amount as the initial increase in investment/autonomous consumption/net exports, by which time, national income would have increased by a multiple and employment would also have risen significantly.

### Illustrate the Multiplier using a numerical example:

For example if the  $MPC = 0.6$  or  $MPW = 0.4$ , this means that 60% of any change in income received will be spent on domestic output. Thus, if autonomous  $G$  initially rises by \$100m and  $AE$  rises by \$100m, the effect on national income will be:  $\Delta Y = \$100m + \$60m + \$36m + \$21.6m + \dots = \$250m$ , i.e. national income will eventually rise by \$250m., which implies that the multiplier has a value of 2.5. The economy is therefore stimulated since the real national income has increased.

If there is real GDP growth, employment will also increase.

Figure 1a: Expansionary Fiscal Policy to Solve Unemployment (AE-Y Model)



Referring to Figure 1a, there is a deflationary gap of 'ab' and the national income is  $Y_0$  which falls short of the full employment level of  $Y_{FE}$ .  **$Y_0 Y_{FE}$  is an output gap which means not all resources are being employed to produce goods and services and it signifies unemployment.** An expansionary policy will cause an increase of  $AE$  from  $AE_0$  to  $AE_1$  will cause national income to increase by a multiplier from  $Y_0$  to  $Y_1$  getting closer to the  $Y_{FE}$

### Effectiveness of fiscal policy in Singapore context

#### Limitation 1: Small Multiplier

- The Singapore economy is small and very open. Due to the lack of natural resources, we have to import raw materials and intermediate goods to produce our exports. In addition, we also import other basic necessities for consumption. As such the import leakage is large, i.e.  $MPM$  is high. Hence, the size of our multiplier is small due to the high  $MPW$ .
- In addition, a significant proportion of Singaporean's wealth is "locked up" in the Central Provident Fund (CPF), which is a form of mandatory savings chiefly for retirement and medical purposes. This means that our  $MPS$  is high and our multiplier size small.
- As explained above therefore, **each round would have a high amount leaked away as savings and imports spending therefore reducing the overall multiplier effect in increasing national income.**

**Note: This is a very crucial criticism for Singapore and must be well-elaborated and not just stated. Example of a statement: Singapore has a small multiplier due to high savings and imports and therefore effectiveness of fiscal policy is limited.**

[2 other possible factors]

#### **Limitation 2: Relative small size of government spending to other components of AD**

The **relatively small size of government spending to other components of AD** means a fall in export revenue due to recession of trading partners' economies of say 5% would require an increased government spending by some 100%, as export revenue is more than 20 times government spending. This alone makes fiscal policy ineffective as a demand management policy tool.

#### **Limitation 3: Time lag**

There is often a serious time lag between the identification of the problem to be dealt with and the time when the fiscal measures begin to take effect. This may mean that fiscal policy takes effect at the wrong time. Hence fiscal policy could even be destabilising when such time lags are considerable. For example, expansionary fiscal policy to stimulate unemployment may not come into effect until the economy has recovered. This may result in an overheated economy (with inflationary pressure) instead.

#### **Conclusion**

Even though fiscal policy in Singapore faces many limitations, it is **still used by our government** for the following [NB: these are just suggestions, students do not have to replicate everything]:

- It **boosts the confidence of both investors and consumers** since it serves to send a strong signal that the government is trying to resuscitate the economy. So fiscal policy has a '**crowding-in**' effect.
- Also,  $\Delta NI = \Delta AE \cdot k$  which means even if  $k$  is small, there is **still some positive impact on the NI** when there is a rise in autonomous spending such as government expenditure.
- Moreover, Singapore's fiscal policy **will not lead to crowding out of private consumption and investment** as the government has huge budget reserves and need not resort to borrowing.
- Furthermore, it is **easier/more flexible** for the Singapore government to use 'off budget' as parliamentary debates are minimal.

But due to the small multiplier, the government has adopted fiscal policies that look at the **supply side effects** of government spending. Besides, the government also uses **other policies such as exchange rate policy** to encourage exports. In other words, the government uses a **MULTI-PRONGED APPROACH** to combat cyclical unemployment and slow/negative growth.

Level	Mark	Descriptor
L3	8 – 10	Clear analysis to explain the limitations of fiscal policy in Singapore context including how the high leakages in the context of Singapore would reduce the multiplier effect.
L2	5 – 7	Explains with some analysis how fiscal policy works and the various factors limiting its effectiveness eg. in terms of time of implementation and the extent of the multiplier effect.
L1	1 – 4	Answer shows some knowledge of fiscal policy but does not show that question has been fully grasped.

(b)

Dissect Question Using the 3'Cs'	
<b>C – Command word</b>	<b>Explain:</b> Use SEE approach then <b>Assess:</b> Students need to evaluate if alternative policies were " <b>more</b> appropriate", <u>weighing out</u> the relative advantages and disadvantages to existing measures. <u>Reasoned judgment</u> required.
<b>C – Concept</b>	Explain/Suggest <u>alternative policies</u> to macroeconomic problems (unemployment and growth issues) brought about by worldwide recession.
<b>C – Context</b>	In Singapore, taking into consideration that the policies recommended were in

	relation to the context of a worldwide recession.
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## Simple schematic plan:

Introduction		
<i>[Highlight that in (a) we have examined the weaknesses of fiscal stimulus in Singapore]</i>		
Body		
Explain and Evaluate 3 alternative policies		
Exchange Rate Policy	Supply-side policies	Trade policies
Conclusion		

### Introduction

Key words	Alternative policies, worldwide recession
Issue & Approach	<p>Alternative policies to fiscal policies include: monetary, exchange rate, supply side policies and trade policies. Assess how these could be used to turn Singapore around should a recession happen.</p> <p>The appropriateness of these policies has to be examined in the context of Singapore (openness of our economy and small multiplier) as well as the worldwide recession, which implies a fall in demand of Singaporean goods i.e. Singapore exports and possibly an increase in unemployment among industries dependent on foreign exports.</p>

*\*Students may want to also briefly highlight that the macroeconomic issues that we are managing is our stagnating growth and higher unemployment brought about by the worldwide recession.*

### Body

Policy [State]	Elaborate and Exemplify
<p>Exchange rate policy:</p> <p>(Explain how S'pore uses managed float exchange rate system)</p>	<p>Explain how exchange rate policy works: in this case, depreciate the Singapore dollar to boost (X-M), AD, and thus employment and economic growth.</p> <p>Analysis: Generally, when times are bad, the pressure of high import prices such as oil and food prices will become less prominent. So there is a less pertinent need to maintain a strong currency. Not only that, as the world economy continue to slow down, the demand for our exports will fall as the foreign importers of our goods experience a fall in income.</p> <p>By allowing the depreciation of the S\$, it makes Singapore's <b>exports cheaper in terms of foreign currency</b> and hence allow the exports to gain export price competitiveness. The quantity demanded of exports will increase more than proportionately (if <math>PED_x &gt; 1</math>) leading to an increase in export revenue in foreign currency. <b>Demand for Singapore's exports in S\$</b> will increase resulting in an increase in export revenue (in S\$). Additionally, imports will become relatively more expensive in terms of S\$ and assuming <math>PED_m &gt; 1</math>, quantity demanded for imports will fall more than proportionately and hence import expenditure (in S\$) will fall. Overall net exports (X-M) will increase, leading to an increase in AD and NI through the multiplier effect. Since there are unplanned fall in stocks, producers will hire more workers to meet this shortfall and hence cyclical unemployment will be reduced.</p> <p>However, Singapore's <b><math>PED_m</math> is likely to be <math>&lt; 1</math> due to the fact that she has limited natural resources and needs to import for consumption and production of exports.</b> Hence a depreciation of S\$ will lead to a less than proportionate fall in quantity demanded for imports and overall an increase in import expenditure (in S\$) instead. Hence, net exports may not increase.</p> <p>Additionally, given the fact that <b>Singapore's exports have a high import content, a depreciation of S\$ will raise the price of imports such as raw materials and contribute to import price push inflation for the Singapore economy.</b> This will raise cost of production for firms and lead to a loss in export price competitiveness, which will partially offset the price advantage gained from the weakening of the currency on our exports.</p>

	<p><b><u>Evaluation</u></b></p> <p>As long as <b>Marshall-Lerner condition holds</b>, i.e. sum of the price elasticities of demand for import and export is more than 1, a depreciation of a currency, S\$ included, will lead to an improvement in the balance of trade. This means that net exports will increase and hence AD and employment levels.</p> <p>Since Singapore's exported <b>services' PEDx likely to be &gt; 1</b>, as there are many substitutes. As long as PEDx or PEDm is &gt;1 ML condition will definitely hold.</p> <p>But one still has to take note of the <b>J-curve effect</b> which shows that depreciation will first worsen the BOT before eventually improving it due to the less responsiveness of both quantity of exports and imports to price change at the beginning as time is needed for people to adjust to try out new alternatives and some contractual obligations.</p>
<p>Supply side policy: (Explain how supply side policy works)</p>	<p>Supply side policy aims to shift AS to the right by increasing productive capacity of the economy, and by improving workings of product and factor markets.</p> <p>E.g. increasing incentives to work, education and training, trade union reform, privatization and deregulation, prices and incomes policy to cut cost of production. But in Singapore's case, trade union reform and privatization and deregulation are not effective as we have a cooperative trade union and few state owned companies. <b><u>Instead, Singapore pursues the unique policy of cutting costs in the short term via shifts of SRAS to the right – (to increase real GDP and reduce GPL) through job credits, wage freeze, cutting of business costs, and education and retraining in the long term (shift LRAS).</u></b></p> <p>A flexible wage system was introduced in 1988, the system was to replace the need for the government to initiate wage cuts or wage freezes necessary to counter cyclical unemployment. This system incorporated an annual wage supplement (AWS) and a monthly variable component (MVC) that varied with the performance of the economy as well as the firm. By 1993, all government statutory boards had adopted the system and in 2004, some 80% of workers in large firms and 42% of workers in SMEs are on a flexible wage system. Across the private sector, 63% of the labour force had some form of flexibility built into their pay. <b>These flexibilities allowed firms to adjust labour cost by adjusting wages so that they could avoid having to retrench workers as much as possible.</b></p> <p>In the most recent recession, the government introduced the Jobs Credit Scheme to subsidise the cost of labour hence reducing the cost of production for firms allowing the firms to avoid having to retrench workers.</p> <p>Give examples of education and training schemes conducted in Singapore. Show using a diagram how higher economic growth and employment can be achieved without corresponding rise in inflation.</p> <p>However, most of the long term supply side policies require time to take effect. (Evaluate based on supply-side policy chosen)</p>

<b>Trade policy:</b>  <i>(Necessary to discuss since it is a worldwide recession and Singapore is an open economy. Generally we are unlikely to adopt protectionist policies for fear of retaliation given our reliance to trade.)</i>	Diversify trading partners: Do not be over-reliant on only a few top trading partners like EU (27) or US; turn to Asia.  Diversify export baskets: when demand for one good falls, say electronics, there is demand for other exports.  Use YED as economic analysis. Since it is a worldwide recession where income levels are falling, there would be a fall in demand for normal goods especially luxury goods (YED >1). Singapore is involved in exporting value-added high end products such as electronics where YED >1 so a more diversified basket of goods will reduce our vulnerability to a worldwide recession.
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### **Conclusion**

Since the cause of a stagnating economy is due to lack of external demand, effectiveness of demand management like fiscal policy may be limited because its effects changes through G, I and C.

Given the unique characteristics of Singapore as an open economy, our managed float exchange rate policy, supply side and trade policies would be more appropriate for Singapore.

Level	Mark	Descriptor
L3	9-11	Well-elaborated answer with reasoned explanation of the limitations of each alternative policy applicable for Singapore in relation to worldwide recession
L2	5-8	Correct explanations of at least two alternative policies, or underdeveloped explanations of alternative policies with evidence of application to context
L1	1-4	Answer shows some knowledge of policies but without application to Singapore context
Evaluation		
E2	3-4	Reasoned judgment
E1	1-2	Some attempts to evaluate policies but largely unsubstantiated

### **TYS N2010 ESSAY Q5**

**When there are large increase in the prices of oil and other primary products, they are usually expected to lead to rising inflation throughout the world's economies.**

**Discuss the extent to which these factors are likely to affect the rate of inflation in Singapore. [25]**

Suggested Answer

Dissect Question Using the 3'Cs'	
<b>C – Command word</b>	<b>Discuss:</b> Students need to <u>evaluate the extent</u> to which the factors would affect inflation in Singapore. Reasoned judgment required.
<b>C – Concept</b>	Different factors affecting inflation in Singapore. <i>Note: Factors mentioned in question (Cost-push inflation- Import-price push inflation).</i>
<b>C –Context</b>	Relate to the Singapore economy.

A simple schematic plan:

<b>Introduction</b>
<b>Body</b>
Thesis: Explain how the factors mentioned causes cost-push inflation in Singapore



Anti-there: However there are other factors affecting inflation in Singapore.

### Conclusion

#### Recall: Factors that affect the rate of inflation in Singapore

Cost-push	State of the Economy	Government Policies
<ul style="list-style-type: none"><li>• Import-price push inflation</li><li>• Statutory Policies push inflation (GST, COE, levy on foreign labor – add to business cost)</li><li>• Wage push inflation</li></ul>	<ul style="list-style-type: none"><li>• Tight capacity – demand-pull inflation</li><li>• Spare capacity – slow growth and bring down GPL</li></ul>	<ul style="list-style-type: none"><li>• Exchange rate policy to combat import price push inflation; Supply-side policies that leads to lesser reliance on oil, increase productivity and working with unions to solve wage-push, etc.</li><li>• Demand-management tools</li></ul>

#### Introduction

Concept	Inflation is defined as the sustained increase in price level. It should be noted that higher oil and primary products prices may not immediately raise inflation rates if this increase is simply a one-time increase. In order to have an impact on inflation, this increase must be sustained.
Context & Approach	<p>Historically, inflation rate in Singapore has been low. It averages about 3% for the past decade. In recent times, the high economic growth and affluence in emerging economies like China and India has led to increased competition for resources like oil / food products. In addition, the recent global change (drought and flood) has severely affected the supply of primary products (such as wheat). This leads to a rise in price levels in resource scarce, import-dependent Singapore.</p> <p>This essay aims to discuss the extent to which these factors are likely to affect the rate of inflation in Singapore.</p>

Body	
Thesis: The increase in price will affect inflation in Singapore	
State	The increase in prices of oil and other primary products leads to import-price push inflation.
Elaborate with Diagram	<p>In cost-push inflation, higher overall process is brought by changes to the cost of production. For example, as the price of oil increases, this leads to a rise in unit cost of production for most firms in Singapore as prices of energy increase. It leads to a fall in SRAS (<math>SRAS_0 \rightarrow SRAS_1</math>), contributing to rise in general price level (<math>P_0 \rightarrow P_1</math>).</p>
Elaborate with Example	<p>The rate of inflation in an economy is normally measured by Consumer Price Index (CPI), which tracks a basket of goods that households consume. In Singapore, this basket consists of items like education, healthcare, transportation, food and housing. The implication of higher oil and primary products prices would translate to higher transport and food prices and hence affect the rate of inflation in Singapore.</p> <p>Transport and Food make up about 16% and 20% of the overall CPI index in Singapore. As compared to education (about 7%) and clothing/ shoes (about 3%), an increase in transportation costs and food prices would therefore have a greater the impact on CPI (and hence inflation rate) in Singapore.</p> <p><b>And since the <u>weights</u> are high for transport and food, the impact on the CPI will be even greater.</b></p>

Anti-Thesis: There are other factors that would impact inflation in Singapore	
State	Government Policies to mitigate import-price push inflation
Elaborate	<p>The above analysis assumes a lack of government intervention in the market. A surge in prices of these primary products could be detrimental to both businesses and the lower income group especially when Singapore is heavily depended on imports. The government could therefore intervene by allow the SGD to appreciate so that that imports (such as oil and primary products) can be make cheaper in terms of S\$.</p> <p>In the LR, government is also subsidizing firms to turn to alternative energy sources. But for other primary products, probably difficult.</p>
State	Other Causes of Cost-push inflation in Singapore
Elaborate with Example	<p><b>Statutory Policies:</b></p> <p>This occurs when the increase in indirect taxes imposed on goods and services raises the cost of living. If firms face a rise in costs through taxes, they usually respond by passing some of the higher costs to consumers through higher prices, and partly by cutting back on production. The increase in Goods and Services Tax (GST) in Singapore in 2007 from 5% to 7% caused prices to rise in the year it was implemented. The government implemented this as a result of a changing tax paradigm from direct to indirect tax: lowering income and corporate tax to attract foreign talents and encourage local investment and FDI.</p>

Also recently, the government is reducing the number of COEs in the market to control car ownership so as to solve congestion resulted in spike in the price and adds on the business cost in terms of transport costs especially for transport and delivery companies.

In order to spur productivity and rely less on cheap foreign labor, the government has also increased levy on foreign workers and this further increases business cost.

**Evaluation:** This is a result of conflicting goals. The government at best comes up with GST-offset packages for lower income households to cope with rising prices.

Business cost should lower in LR if productivity drive is successful.

Policies (eg. max car loan reduced to 5 years, increasing the downpayment to 50%) to dampen demand for cars was implemented to curb the spike in COE price. Price of COE did cool off a little but still remained high.

#### **Wage-push**

This occurs when wages rise faster than labour productivity, then wage-push inflation may result due to rising unit cost of production, thereby shifting SRAS to the left. Singapore's productivity has been falling behind due to over-reliance on cheap foreign workers and not focusing on R&D by companies.

**Evaluation:** More subsidies are given to companies which invest in technology to improve productivity.

State	<b>State of the economy: A fall in AD could mitigate inflation resultant from higher oil and food prices and similarly a rise in AD may worsen the inflation.</b>
Elaborate with Example	<p>As mentioned, the price increase in oil/ primary products will affect the supply side. SRAS will shift leftward and this contributes to a rise in general price level (inflation). However, if we assume that there is a corresponding reduction in AD (<math>AD_0 \rightarrow AD_1</math>), then the inflationary pressures can be curbed or dampened (<math>P_1 \rightarrow P_2</math>).</p> <p>AD in Singapore could possibly fall as the world is currently facing a slowdown due to the financial problems surrounding US and Europe. The US sub-prime problem is not fully resolve and there is still widespread unemployment. In addition, the financial crisis that is affecting Europe (in particular, Greece and Ireland) has resulted in austerity measures for these economies The economic problems faced by these economies will likely affect Spore through lower export demand. As US and Europe represent two of our largest trading partners, then there would be a fall in AD (due to lower export demand).</p> <p>During good times when AD is higher, Singapore may have both cost-push and demand-pull inflation.</p> <p><b>Evaluation:</b> Government can use fiscal policy to affect the level of AD.</p>
Conclusion	

As oil and primary products affect the transport and food prices, an increase in their prices would directly contribute to higher inflation rates. It will nevertheless be a less significant cause during worldwide recession when demand for oil is falling. However, the extent to which the rate of inflation increase could be affected other cost-push factors and also by a change in AD and government policies.

Level	Mark	Descriptor
L3	15-21	For an answer that uses a clear analytical framework to explain how the increase in commodities prices would cause cost-push inflation and also elaborates on other factors that are prevalent in Singapore.
L2	9-14	For an answer that gives an explanation of how the increase in commodities prices would cause inflation but has an incomplete discussion of other factors.
L1	1-8	For an answer that shows descriptive knowledge of factors affecting inflation.
NB: There must be attempts to comment on the degree of impact on inflation to enter into L3 range.		
E2	3-4	Reasoned judgment.
E1	1-2	Unexplained evaluative comment

### TYS N2010 ESSAY Q6

There is a general consensus among economies that protectionism is a bad thing.

- Explain why protectionism exists. [8]
- Assess the extent to which the Singapore government's approach to international trade may need to be adjusted in response to a growth in worldwide protectionism. [17]

- 
- Explain why protectionism exists. [8]

Dissect Question Using the 3'Cs'	
<b>C – Command word</b>	<b>Explain:</b> Use SEE approach To consider why there is protectionism
<b>C – Concept &amp; Context</b>	Reasons for protectionism – to be linked back to macro goals Protection of infant industries for EG Protection of against domestic unemployment (cyclical & structural) Protection against BOP disequilibrium

### Simple schematic plan:

NB: Any 3 factors examined would suffice.

<b>Introduction</b>		
<b>Body</b>		
Reasons for protectionism		
(a) Infant industry argument	(b) Protection against dumping	(c) sunset industry
<b>Conclusion</b>		

### Introduction

Economic theory suggests that when 2 or more countries specialise according to its own area of Comparative Advantage (CA), and trade with one another freely, the gains from trade in terms of higher output of goods and lower prices will accrue to all countries. Despite the potential gains from trade, in reality, countries sometimes adopt protectionistic measures to restrict international trade.

Protectionism is the shielding of domestic industries from foreign competition by discouraging imports, through the use of tariffs or non-tariff barriers that raise import prices or limit import quantity. The reasons for a country to engage in protectionism will be for the achievement of her macroeconomic goals, namely economic growth, employment and BOP equilibrium.

### Body

**State:** One of the reasons for protectionism is the protection of infant industries.

**Explain and exemplify:** Initially, certain industries, usually known as infant industries, are defined as those which have potential CA but are too young or undeveloped to realise this potential, especially in the face of more established foreign competitors. Without protection, these infant industries will not survive competition from abroad. Infant industries face high start-up cost at their initial stage of production. **Subsidies** which help to lower cost of production and as a result price can be given to these producers. This will make them more competitive against the more efficient foreign producers. Protection can be given until it matures and is able to expand its output sufficiently to reap economies of scale and establish market share that it is able to compete with the foreign firms. Hence, protectionism is necessary in the short-run to produce a level playing field.

It is suggested that if protection against foreign competition is provided during the early stages, then the new industry can develop and in time be able to compete on more equal terms with its competitors. Eg Malaysia's Proton cars

**State:** Protectionism against dumping

**Explain and exemplify:**

**Dumping refers to the selling of the same good to a foreign country at a lower price than that charged to the domestic buyers and often below the marginal cost of production.**

- The objective is to drive out rival producers in the importing country and eventually monopolize the market. Import-substituting industries in the receiving market may not be able to compete against such foreign exporters and hence may not be able to develop.
- Also, production is often subsidized by the government, this leads to unfair competition with producers in the importing countries. For example, the steel industry on USA is highly subsidized and this is creating unfair competition among other producers in the world.
- Hence, domestic producers of particular products often argue that they are unfairly victimized by competing foreign imports that are "dumped" in domestic markets.
- In the long run, the consequence may be the destruction of local producers, which produces a competing product. The biggest concern is that, after the competitors are destroyed, the monopolist will now charge a higher price to its overseas consumers, making consumers worse off.
- Protectionism such as tariffs is thus often used to reduce imports and increase domestic production.

**State:** Protecting sunset industries

**Explain and exemplify:**

In some situations countries may temporarily protect industries which are no longer competitive in order to prevent sudden massive structural unemployment in those industries which employ a substantial proportion of the workforce.

After a country decides to specialise and trade, the workers previously employed in the contracting sunset industry (which has lost its comparative advantage), will be unemployed. The transitional period of readjustment and reallocation of resources within each country could be painful and costly.

With the trend towards globalization, massive structural unemployment can arise due to the following:

- faster rate of economic transformation and technology transfer results in new machines and methods that make old skills obsolete
- greater flow of cheaper imports which compete directly with domestic producers → decline in demand for domestic goods → retrenchment of workers as import-substitutes domestic firms lose their comparative advantage and shut down → workers face difficulty seeking employment in other industries

Protectionism such as tariffs to reduce imports and increase domestic production provides a buffer for workers in these sunset industries with the opportunity to retrain and seek employment in other expanding sectors of economy

Declining industries can also make use of the term of protectionism to reorganize and restructure themselves to compete effectively with the foreign rivals again.

## Conclusion

In summary, protectionism does exist.

Level	Mark	Descriptor
L3	7 – 8	Clear analysis to explain arguments for protectionism.
L2	4 – 6	Incomplete analysis to explain argument for protectionism.
L1	1 – 3	Answer shows some knowledge of protectionism but unable to explain why it is practiced.

b) Assess the extent to which the Singapore government's approach to international trade may need to be adjusted in response to a growth in worldwide protectionism. [17]

Dissect Question Using the 3'Cs'	
C – Command word	Assess the extent – make a judgment on issue in the question
C – Concept	1. increase in worldwide protectionism 2. approach to international trade - policies towards trade
C – Context	In the context of Singapore, should there be a change to the way we change we approach international trade?



### Simple schematic plan:

Introduction
Body
<b>Thesis: There is NO need to change Singapore government approach to international trade in face of increasing protectionism.</b>
Explain and evaluate strength of existing policies. <ul style="list-style-type: none"><li>- Trade policy: FTAs</li><li>- Gradual appreciation of S\$</li><li>- Supply-side policies (Improve exports competitiveness)</li></ul>
<b>Anti-thesis: There is A need to change Singapore government approach to international trade in face of increasing protectionism</b>
In view of limitations of existing policies, suggest and evaluate how policies are to be modified/new policies adopted. <ul style="list-style-type: none"><li>- Supply-side policies (Develop new areas of CA)</li><li>- Trade policies</li></ul>
Conclusion

### INTRODUCTION

Singapore's approach to international trade is based on the theory of comparative advantage. We export goods & services (increase in amount of services exported in recent years has increased significantly) in which we have a comparative advantage in and import goods & services which we do not have comparative advantage in. Singapore takes a proactive approach in reviewing our areas of comparative advantage and seeks to continually find new niche areas we can specialise in.

More importantly, Singapore rides on the wave of globalisation and actively pursues the policy of signing Free Trade Agreements (FTAs) with various countries all over the world. This aids Singapore by allowing our exports preferential access to these countries. This helps Singapore to achieve her macroeconomic aims of sustained economic growth and low unemployment.

However, in light of the recent worldwide economic slowdown, many countries have taken the stance of protectionism to shelter their domestic economy. In view of this, whether or not Singapore needs to change her approach to international trade depends on whether she is able to find new areas of comparative advantage and the validity of the FTAs signed.

### BODY

**Thesis: There is NO need to change Singapore government approach to international trade in face of increasing protectionism**

**(1) Explain Singapore's current approach to international trade is based on the Law of CA**

- **Explain theory of CA: Elaborate on the concept of opportunity cost and use relevant examples to support the approach to trade**

The law of comparative advantage states that countries should specialize in the production of goods for which it has a lower opportunity cost.

If one unit of labour Singapore can manufacture 10 hard-disk drives or sew 10 gowns while one unit of labour in the Philippines can sew 8 gowns or manufacture 4 hard disks.

	Hard-disk drives	Gown
Singapore	10	10
Philippines	4	8

**Anti-thesis: There is A need to change Singapore government approach to international trade in face of increasing protectionism**

Explain main impacts of growth in worldwide protectionism on Singapore:

- Slower growth due to lower export revenue, arising from higher export prices of Singapore's exports

Current approach insufficient to help us achieve macroeconomic goals, thus need a change in the following areas:

Thus, need to adjust her approach to international trade by the following possible methods:

- Find new areas of comparative advantage that other countries are unable to compete with (Supply-side policies)

- The opportunity cost for manufacturing one hard-disk drive is 1 gown for Singapore but it is 2 gowns for the Philippines. Hence Singapore should specialize in the manufacture of hard disks drives
- The opportunity cost for manufacturing 1 gown is 1 hard-disks drives for Singapore and 0.5 hard- disk drives for the Philippines. Hence, the Philippines should specialize in the gowns.

Hence Singapore should not specialize in labour intensive processes such as making Nike shoes or sewing gowns as Singapore does not have a large pool of unskilled cheap labour which is necessary for the manufactured of labour –intensive goods at low cost.

Instead, Singapore has a comparative advantage in the manufactured of higher-value add manufacturing goods such as hard-disk drives and in providing tertiary services because of her highly educated workforce, well-developed infrastructure and technology.

**(2) Approach to international trade through diversification:  
Explain workings of FTA to increase export markets & sources of imported raw materials**

**(3) Gradual & modest appreciation of SGD to control for import-price push inflation to lower cost of production for our exports**

**(4) Combined with SSP to increase productivity to increase attractiveness of exports in terms of price and quality**

**Current approach to international trade have helped us achieve: Macroeconomic goals, Efficiency and High SOL**

- Usually protectionism affects certain industries in the economy
- If Singapore is able to acquire a niche in a new area of goods/service, we may be able to expand of export markets
- This can be accomplished through the use of policies by the government to encourage innovation & R&D
- Lesser total trade in the world due to protectionism means that Singapore needs to rely more on bi-lateral FTAs rather than trading with all other countries in the world

## CONCLUSION

Although the world has been experiencing a decline in economic activity leading to the raise in protectionism, Singapore has not been significantly affected. Instead, we have recorded an increase in GDP over the past few years. This goes to show that the current trade policies that Singapore has engaged in has been effective & successful. If any changes need to be made, it should likely be in terms of who and when to sign FTAs with and what new areas of CA to engage in.

Level	Mark	Descriptor
L3	10 – 13	Clear analysis to explain Singapore's existing approach to international trade works and evaluates the strengths and weaknesses in relation to the worldwide protectionism before making recommendations.
L2	5 – 9	Explains with some analysis how Singapore's approach to international trade works but fail to fully comment to recommend if the government should change or how.
L1	1 – 4	Answer shows some knowledge of international policies but does not show that question has been fully grasped.
E2	3-4	<i>Evaluative assessment supported by economic analysis. Students will need to make a reasoned judgment on the degree that the government should modify existing policies.</i>
E1	1-2	Unexplained judgment

## H2 Case Study A level 2011 Question 1: The UK air travel market

(a)	<b>With reference to the data in Table 1, explain the effect on the total revenue from leisure flights to UK destinations of</b>	
(i)	<b>a fall in price.</b>	<b>[2]</b>
	<p>The price elasticity of demand for leisure flights to UK destination is (-) 1, which implies that a fall in price will lead to a rise in quantity demanded by the same proportion (1m), thus leaving total revenue which is derived by multiplying price by quantity unchanged (1m).</p> <p><i>Note: Total Revenue (TR) is derived by multiplying Price by the Quantity sold [i.e. <math>P \times Q</math>]</i></p>	
(ii)	<b>a rise in income.</b>	<b>[2]</b>
	<p>Total revenue should rise because it is normal good (1m)</p> <p>Given that the income elasticity of demand has a positive coefficient of greater than 1 (or 1.5), an increase in income will result in a more than proportionate increase in demand for leisure flights to UK thus causing <math>P \times Q</math> sold or TR to rise (1m).</p> <p><i>Note: It is a normal good.</i></p>	
(b)	<b>Explain one possible reason for each of the following.</b>	
(i)	<b>Why the demand for leisure flights to non-UK destinations is less price elastic (0.2) than that for UK destinations (1.0).</b>	<b>[2]</b>
	<p><b>Key determinant:</b> The key reason is due to the availability of close substitutes.</p> <p><b>Analysis:</b></p> <ul style="list-style-type: none"> <li>Non-UK destination : Demand for air travel by leisure travelers in UK to non-UK destination (ie outside the UK) is less price elastic because there is few close substitutes (if any) for air travel. Air travel is the preferred mode of transport because it is faster and more convenient. Travel by sea, road or rail to non-UK destination is slower (e.g. UK to nearby France) and not always possible (e.g. UK to SG) (1m).</li> <li>UK destinations : On the other hand, the demand for internal flights within the UK itself is more price elastic because consumers have a wider choice of alternative modes of transportation such as rail and road to travel within the UK (1m).</li> </ul>	
(ii)	<b>Why the income elasticity of demand for business flights to UK destinations [1.4] is higher than that for non-UK destinations [0.6].</b>	<b>[2]</b>
	<p><b>Key determinant:</b> The prime determinant of the value of income elasticity of demand is the degree to which a good is a normal good or a necessity.</p> <p><b>Analysis:</b></p> <ul style="list-style-type: none"> <li>Demand for business flights to overseas non-UK destinations are considered more of a necessity than a luxury. Unlike leisure flights, business travel are borne out of necessity e.g. to close a business deal or meet up with clients. Thus as UK businessman get better off when their incomes increase there is no reason why they will want to make more business trips by air. (1m)</li> <li>However, as for UK destinations, the demand for business flights is considered more of a luxury than necessity. Since most business trips can be done within the UK by air, road or rail it stands to reason that as UK businessmen become better off they will want to travel by air for more convenience and comfort (1m)</li> </ul>	
(c)	<b>Explain the likely value of the cross-elasticity of demand between high-speed rail travel and air travel.</b>	<b>[2]</b>
	<p>Cross elasticity of demand between high-speed rail travel and air travel is likely to be <b>positive and high</b> (1m).</p> <p>High speed rail travel and air travel are <b>close substitutes</b> as evident in Extract 1, para 2, the purpose of building high speed rail is to provide an alternative to air travel within the UK especially for “domestic journeys” and “short</p>	

	haul trips” made within the UK. With a decrease in price of high-speed rail travel, demand for air travel will fall more than proportionately as consumers switch to travelling on high-speed rail travel as it provides very similar level of satisfaction at least in terms of travel time (1m).															
(d)	Explain either one demand or one supply factor that has led to a rise in VFR travel.	[2]														
	<p>With reference to Case material in Extract 4:</p> <p><u>Demand (DD curve shifts rightwards) – elaborate on any 1 of the following:</u></p> <ul style="list-style-type: none"><li>Market Size: Increase in the potential market size for social travel due to an “increase in the number of countries belonging to the EU”.</li><li>Changing Tastes/Preferences due to the increased desire to build and maintain relationships</li><li>Globalisation –a sub-set of Tastes/Preferences. Rise in labour mobility and migration</li></ul> <p><u>Supply (SS curve shifts rightwards) – elaborate on any 1 of the following:</u></p> <ul style="list-style-type: none"><li>Market Liberalisation: Relaxation of regulatory restrictions on market for air travel. Rise in the number of flights and lower costs of air travel.</li></ul> <p><i>Note: VFR travel or travel for social reasons is a subset of Leisure travel. Diagram is not required.</i></p>															
(e)	With reference to the data where appropriate, and using economic analysis, discuss the effects of globalization and improved technology on the market for air travel.	[8]														
	<p><b>Introduction</b></p> <ul style="list-style-type: none"><li>Define globalisation to be characterized by greater cross border movement of goods, capital and people.</li><li>With reference to the data, globalisation and technology improvements have both positive and negative effect on the market for air travel, affecting both demand and supply.</li></ul> <p><b>Body:</b></p> <table><tr><td colspan="2"><b>Different impact on Demand:</b></td></tr><tr><td><b>Demand Increases (shift rightwards)</b></td><td><ul style="list-style-type: none"><li>From Extract 4, there is a change in <b>taste and preference of people (demand factor)</b> as there is a greater movement of people for business and social purposes.</li></ul></td></tr><tr><td><b>Demand Falls (shift leftwards)</b></td><td><ul style="list-style-type: none"><li>Demand might fall due to technological improvements such as video-conferencing mentioned in Extract 1 which is a “substitution for business travel”.</li><li>Extract 1 also mentioned the development of high-speed rail for domestic journeys and short-haul trips –“could reduce demand for air travel by up to 8% by 2050”.</li></ul></td></tr><tr><td colspan="2"><b>Evaluation:</b> In the SR, demand is likely to rise as the fall in demand due to changes in taste and preferences for substitutes is likely to affect LT demand.</td></tr></table> <table><tr><td colspan="2"><b>Different impact on Supply:</b></td></tr><tr><td><b>Supply Increases (shift rightwards)</b></td><td><ul style="list-style-type: none"><li>Extract 4, Globalisation: More countries are open to air travel and there of deregulation of aviation industry and liberalization of the air travel market that allows more players into the market.</li><li>Extract 3, para 2, Government’s plan for airport expansion – ‘Heathrow’s third runway’.</li></ul></td></tr><tr><td colspan="2"><b>Evaluation:</b> Environmental concern places a limitation on the supply side of the market e.g. may slow down the construction of new airports and consequently the expansion of the air travel industry.</td></tr></table> <p><b>Impact on PED + PES</b></p> <p>Supply becomes more price-elastic i.e. Qs is more responsive to higher ticket prices. Why? Possible reasons – airlines industry have more spare capacity e.g. bigger fleets; shorter time span to increase capacity due to better technology (i.e. shorten time frame to manufacture new aircrafts given better technology). Consequently, as demand rises, there is less upward pressure on airfares.</p> <p>Demand may also become more price elastic i.e. Qd is more responsive to higher air ticket prices due to the availability of substitutes such as video-conferencing or high-speed rail. Consequently airlines have less pricing power.</p>		<b>Different impact on Demand:</b>		<b>Demand Increases (shift rightwards)</b>	<ul style="list-style-type: none"><li>From Extract 4, there is a change in <b>taste and preference of people (demand factor)</b> as there is a greater movement of people for business and social purposes.</li></ul>	<b>Demand Falls (shift leftwards)</b>	<ul style="list-style-type: none"><li>Demand might fall due to technological improvements such as video-conferencing mentioned in Extract 1 which is a “substitution for business travel”.</li><li>Extract 1 also mentioned the development of high-speed rail for domestic journeys and short-haul trips –“could reduce demand for air travel by up to 8% by 2050”.</li></ul>	<b>Evaluation:</b> In the SR, demand is likely to rise as the fall in demand due to changes in taste and preferences for substitutes is likely to affect LT demand.		<b>Different impact on Supply:</b>		<b>Supply Increases (shift rightwards)</b>	<ul style="list-style-type: none"><li>Extract 4, Globalisation: More countries are open to air travel and there of deregulation of aviation industry and liberalization of the air travel market that allows more players into the market.</li><li>Extract 3, para 2, Government’s plan for airport expansion – ‘Heathrow’s third runway’.</li></ul>	<b>Evaluation:</b> Environmental concern places a limitation on the supply side of the market e.g. may slow down the construction of new airports and consequently the expansion of the air travel industry.	
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	<p><b>Draw DD-SS Diagram: A rise in demand + A rise in supply – overall Q will rise but P is indeterminate depends on the extent of shifts of the demand and supply.</b></p> <p>Evaluation:</p> <ul style="list-style-type: none"> <li>Indeterminate outcome depends on the extent and direction of shift of each curve as well as the relative change in price elasticities of D and S.</li> </ul> <p>Conclusion:</p> <ul style="list-style-type: none"> <li>Ceteris paribus, with the advancement of globalisation the demand for cross border air travel is set to increase substantially into the foreseeable future. Improved technology (faster and bigger aircrafts using cleaner fuels) would certainly go a long way to drive growth in the market for air travel.</li> </ul>
(f)	<p><b>With reference to air travel and/or other parts of the travel industry, discuss whether taxation or improved technology is the key to achieving a more efficient allocation of resources.</b> [10]</p>
	<p><b>The context:</b> The travel industry comprises of air travel and others such as rail and road transportation are a major source of market failure.</p> <p><b>Market Failure and Exemplification using case material:</b></p> <ul style="list-style-type: none"> <li>CO2 emission or GHS global warming; Environmental concerns – climate change</li> <li>Noise pollution e.g. Heathrow Airport</li> <li>Problem : Getting worse ...Booming Sector –Aviation</li> <li>Problem set to worsen because of projected increased in air travel</li> <li>Globalisation... economic growth.... Social visits</li> <li>Falling airfares...</li> <li>Migration flows ...VFR may not continue to grow by the same magnitude.</li> </ul> <p><b>Using SMB/SMC diagram explain the market failure</b></p> <ul style="list-style-type: none"> <li>PMC = Cost of additional unit of provision of air travel</li> <li>EMC or third party effects = define and in this case CO2 emissions from aircraft causes global warming. As a result, people are affected by global warming and its consequences such as extreme weather conditions like floods and famine, for which they cannot claim compensation from airlines operators.</li> <li>SMC = PMC + EMC</li> <li>PMB = define and in this case satisfaction of air travel</li> </ul> <p><b>Explain</b> how the divergence between private and social costs leads to over-allocation of resources and hence a deadweight loss to society.</p> <p><b>Outcome:</b> Sustainable air travel</p> <p><b>Solutions:</b></p> <p><b>(1) Taxation</b></p> <ul style="list-style-type: none"> <li>Examples of using tax to internalize the externality: CO2 emission tax and Air Passenger Duty =&gt; consumption tax</li> <li>Diagram: Pigouvian Tax to correct a negative externality</li> <li>With reference figure, explain how a pigouvian tax can be used to internalize the negative externality caused by CO2 emissions from aircrafts using “fossil fuels” and allocation of resources would be at socially efficient level.</li> </ul> <p><b>Limitations:</b></p> <ul style="list-style-type: none"> <li><b>Trade-offs or conflicts with other economic goals - Equity Issues versus Efficiency ('preserve of the rich'):</b> The focus on efficiency may produce unintended consequences on society such as inequity in the distribution of resources. Using Carbon pricing to internalize the externality may correct market failure. However, such tax raises the cost of air travel causing airlines to jack up airfares to remain profitable. This in turn raises concerns such as affordability of air travel. Airfares may increase to a level where air travel may become the “preserve of the rich”. If this happens, then the rest of society may not have access to airline services.</li> <li><b>Difficulty in measuring the tax accurately</b></li> </ul>



## **(2) Technology**

Improvement in aircraft engines and air traffic management and use of alternative fuels (Extract 1)

Clean engine ( more efficient aircraft engine – Extract 1)

Clean fuels (alternative fuels – Extract 1)

**Link to analysis:** This reduces the negative externalities i.e. reducing the divergence between PMC and SMC, reducing the DWL.

Some success: 70% improvement in carbon emissions in the last 40 years { extract 2, para 4}

### **Limitations:**

- High speed rail (clean fuel – electric powered) is only for domestic travel but not international travel.
- It requires significant investment in rail infrastructure

**Evaluative comment:** However, if air fares are going down –there might be less incentive to innovate.

## **(3) Others**

- Regulation e.g. liberalization of air travel market - Increased flights.
- “curbs on airport expansion” { extract 2, para 2}; Restrict supply capacity: e.g. abandon plan to build 3<sup>rd</sup> Heathrow runway.
- Setting Caps or Quotas: Government set a target that CO2 emissions from UK air travel in 2050 should be at or below 2005 levels.
- Better airport management (improving management efficiency)
- Less emission if aircraft is not circling around the airport waiting for a slot to land.

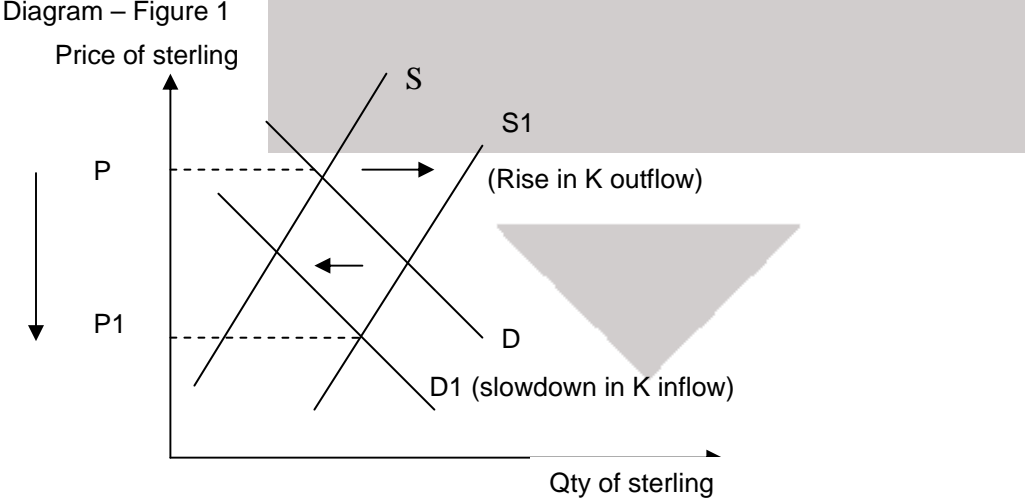
### **Conclusion:**

- Whilst using taxation is a standard measure to control pollution, it should be complemented by long term plan to introduce clean technology so as to ensure that resources are allocated efficiently on a sustainable basis.
- Pollution is a problem created as a by-product of producing a good such as aircrafts. Conceptually, this problem can ideally be eradicated by the introduction of aircrafts that are pollution-free i.e. Creation of a good that does not produced a “Bad” as a by-product.
- This is possible if there is a breakthrough in technology in the long run. In the meantime, taxation can be used as a tool to provide the incentive to nudge the market towards searching for such a clean technological solution to the problem of CO2 emission.

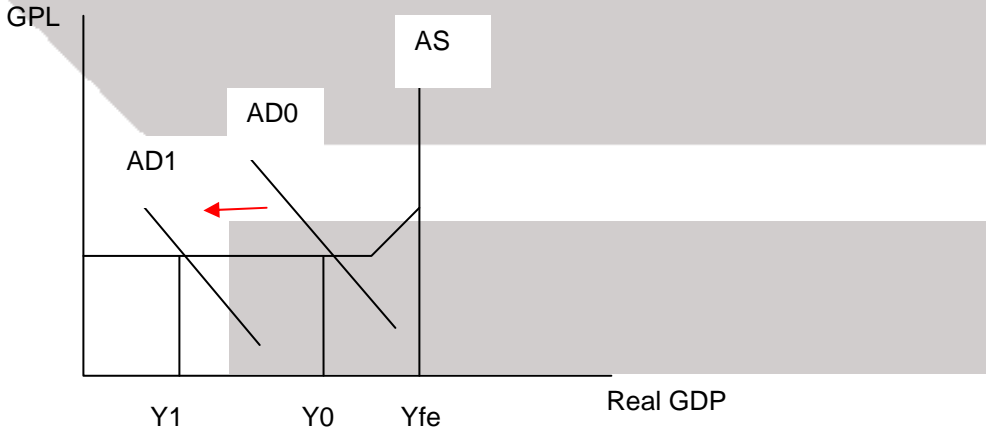
*Note: learn to give an AWESOME conclusion. There are many parts in the data which hints at improving technology than taxation as the preferred long term solution e.g. Extract 2, last paragraph: “The key to sustainable air travel is technology not taxation.”*



## H2 Case Study A level 2011 Question 2: Interest rates in Australia and the UK

(a)	<b>Compare the UK's recession with that of Australia between 2007 and 2009</b>	<b>[2]</b>
	<p><u>Similarity:</u> Both Australia and the UK display a decline in the rate of growth of real GDP.</p> <p><u>Difference:</u> However, in 2009 the UK suffered an absolute fall in GDP, but Australia's real GDP continued to grow, albeit at a declining rate.</p>	
(b)	<b>(i) Describe the trend in the UK's public sector debt shown in Fig. 2.</b>	<b>[1]</b>
	Upward trend between the dates in the figure.	
	<b>(ii) With reference to the data, explain how recession affects public sector debt.</b>	<b>[3]</b>
	<p><u>Increased G spending</u> Recession leads to a rising public sector debt because during recession there is a rise in unemployment which leads automatically to increasing welfare payments for the unemployed.</p> <p><u>Reduced T revenue</u> In addition there will be declining tax revenues as people pay less income tax and also spend less, causing revenue from sales tax to fall.</p> <p><i>Note: This is automatic stabilizers at work.</i></p>	
(c)	<b>(i) Using a diagram, explain why the pound sterling fell in value after the warning about the UK's credit rating.</b>	<b>[2]</b>
	<p>Explain the warning may have undermined investors' confidence in buying and/or holding UK government bonds.</p> <p><b>Capital flight or outflow:</b> This could have led to a sell-off of UK government bonds by foreign investors to invest in other "safer" bonds. Such capital outflows would result in a rightward shift of the SS curve for pound sterling.</p> <p><b>Slowdown in capital inflow:</b> At the same time, foreign investors cutback purchase of new UK government bonds resulting in a leftward shift of the demand curve for pound sterling.</p> <p>The combined effect of an increased in SS and fall in DD, explains why the pound depreciated as shown in figure 1.</p> <p>Diagram – Figure 1</p>  <p><i>Note: With reference to figure 1, the pound fell in value against other major currencies (e.g. USD/Euro – Extract 8) following the warning about UK's credit rating.</i></p>	
(ii)	<b>Explain how this fall in the pound sterling might affect prices of goods and services in the UK.</b>	<b>[2]</b>

	<p>A fall in the pound sterling implies a depreciation of the currency. This could lead to <b>cost-push inflation or demand-pull inflation</b></p> <p><b>(1) Cost push inflation due to rise in Import Prices</b></p> <ul style="list-style-type: none"> <li>• A depreciation of the sterling would mean UK importers have to pay more for imported goods priced in foreign currencies.</li> <li>• A rise in the price of imports would lead to increases in the price of inputs that would lead to cost-push inflation.</li> </ul> <p><b>OR</b></p> <p><b>(2) Demand pull inflation due to improvement in X-M</b></p> <p>A depreciation of the sterling would mean UK exports are cheaper in terms of foreign currency and imports are more expensive in terms of pound sterling. If ML condition is satisfied, trade balance will improve leading to an increase in AD that might trigger demand-pull inflation.</p>	
<b>(d)</b>	<b>What evidence is there in the data that real interest rates were negative in the UK during most of 2009?</b>	<b>[2]</b>
	<p>Real interest rate is nominal interest rate adjusted/discounted for inflation. Real interest rate is negative if the rate of inflation exceeded the nominal interest rate.</p> <p>Evidence/Exemplification: Table 3 showed that whilst the rate of inflation in the UK was 1.9 for 2009, the nominal interest rate as represented by BOE interest rates in figure 1 was less than 1.9 % over the same period. For instance, in Jan 2009, the interest rate was only 1.5%. This implies that real interest rate is (-) 0.4%.</p>	
<b>(e)</b>	<b>With reference to the data, discuss why the authorities in the UK were expected to maintain low interest rates ‘for years’ {extract 7, line 1} while the authorities in Australia have increased them.</b>	<b>[8]</b>
	<p>Interest rate is a key policy instrument used by central banks to carry out monetary policy in both UK and Australia.  <b>UK context:</b> With reference to Extracts 6 and 7, why interest rate was kept low at around 0.5%?</p> <p><b>(a) Weak UK economic recovery</b></p> <p>Data indicated that UK economy showed no clear signs of a recovery. In fact the UK economy contracted by 0.6% between April-June 2009 and further decline by 0.2% in the third quarter of 2009; whilst unemployment rose to 7.6%.</p> <p><b>(b) Fiscal Policy- limited scope</b></p> <p>Limited scope for pursuing expansionary fiscal policy because UK's public Finances in “bad shape” due to high Debt to GDP ratio {68.5% cf to only 19% for Australia}</p> <p>In fact, the UK had to embark on fiscal austerity to reduce its fiscal deficit. This would further contract the economy (G falls leading to fall in AD).</p> <p>Use AD/AS analysis :</p> <p>Hence by keeping interest rates low, the aim is to continue to encourage C&amp;I or at least not cause C&amp;I to fall.</p> <p><b>Australia's Context:</b> Why interest rate has been raised in Australia from 3% to 3.5%? With reference to Extract 5</p> <p><b>(a) Recovery “is continuing”</b>– Data suggest that Australia's economy is recovering well. Recovery was driven by strong exports demand in Asia for Australia's products especially commodities. Australia is a resource-rich country. E.g. Growth in China has been very strong creating demand for commodities/resources which are key Australian exports.</p> <p><b>(b) Threat of Inflation</b></p> <p>As recovery gathered pace, the concern was the economy might face demand-pull inflationary pressures. Australia's CB had therefore to raise interest rates in order to tighten monetary policy so as to prevent potential inflationary pressures from derailing economic growth and eroding living standards.</p>	

	<p><b>Use AD/AS analysis:</b> For Australia, AD is already rising with the strong demand from Asia (X). With the increase in interest rate, C&amp;I fall, this is to prevent the economy from overheating.</p> <p><b>Conclusion</b> The UK has adopted a loose monetary policy stance of keeping interest rates low because the key concern was to stimulate AD in order to revive the weak economy.</p> <p>In contrast, the Australian central bank had adopted a different monetary policy stance because recovery had already gathered pace and the key concern was the threat of rising inflationary pressures.</p>
(f)	<p><b>The CEBR (Centre for Economics and Business Research) chief executive predicted that ‘the next government will have to generate around £100 billion through tax rises and spending cuts to deal with the country’s budget deficit’. {Extract 7, para 2} Discuss the likely impact of such a restrictive fiscal policy on the UK economy.</b> [10]</p>
	<p><b>The restrictive fiscal policy is aimed at reducing UK public sector debt. It is meant as a fiscal austerity measure in order to reduce its debt/GDP ratio.</b></p> <p><b>Short run effects</b> <b>Policy Dilemma:</b> Reduction in fiscal deficit in times of a recession would only hamper recovery and even push the economy into a deeper recession.</p> <p><b>Dampen Demand</b></p> <ul style="list-style-type: none"> <li>• Dampen actual growth because increasing T and reducing G would cause a net withdrawal of expenditure from the circular flow.</li> <li>• Fiscal tightening will only further dampen AD and cause the economy to sink into a deeper recession. The consequent is contraction in output and higher unemployment.</li> </ul> <p>Diagram – AD/AS diagram</p>  <p>The diagram is an AD/AS model. The vertical axis is labeled 'GPL' (likely representing the price level) and the horizontal axis is labeled 'Real GDP'. A vertical line represents the 'AS' (Aggregate Supply) curve. Two downward-sloping lines represent the 'AD' (Aggregate Demand) curve, with 'AD0' being the initial curve and 'AD1' being a curve shifted to the left. A red arrow points from AD0 to AD1. The initial equilibrium is at the intersection of AD0 and AS, corresponding to output level 'Y0' on the horizontal axis. The new equilibrium after the shift to AD1 is at the intersection of AD1 and AS, corresponding to output level 'Y1' on the horizontal axis. A third output level 'Yfe' is marked on the horizontal axis to the right of Y0, representing the full employment level. Vertical lines are drawn from Y1, Y0, and Yfe up to the AS curve.</p> <p>With reference to figure above the reduction in government spending will cause AD to fall from AD to AD1. Firms will experience an unplanned increase in stocks and react by reducing output. Real output in the economy will fall from Y to Y1. Unemployment will also increase as firms retrench workers made redundant by the fall in output.</p> <p><b>Evaluative comments:</b> Monetary Stimulus limitations + Moreover, in the UK the problem is compounded by the fact that monetary stimulus has not proven to be effective and there is not much room for further cuts in interest rate given that it is already standing at 0.5% or close to zero.</p> <p><b>Long Run Effect</b> Higher taxes saps productivity – dampen the desire to work, invest, save and be entrepreneurial. Thus, may limit the country’s potential growth.</p> <p><b>Evaluative comments:</b> But it depends on which type of taxes is hiked e.g. GST the impact would be on SRAS However, in the long run fiscal austerity if successful benefits the economy. How?</p>

<p><b>Fiscal Prudence</b> Restore confidence in government's ability to finance its debt. Without fiscal prudence, private investors lacked the confidence to keep financing the deficit by purchasing government bonds. Private sector may not be willing to keep on lending unless interest rates is high enough to compensate for the risk forcing the government to turn to other international financial institutions such as the IMF</p> <p><b>Restore the economy's competitiveness.</b> Once fiscal deficits are cleared there would be no pressing need to raise future taxes improving the competitiveness of the economy</p> <p><b>Conclusion:</b></p> <ul style="list-style-type: none"> <li>• In the context of the UK, a restrictive fiscal policy meant to instill fiscal austerity is likely to bring about short term pain (i.e. belt tightening) but long term gain (i.e. Healthy fiscal balance).</li> <li>• In the SR more fiscal austerity is likely to slowdown economic growth because of its contractionary effect on spending. However, in the LR if public debt is reduced to a sustainable level it should spur economic growth because it will inspire more investment and consumption in the economy.</li> </ul> <p><i>Note: The policy dilemma facing the government is how to cut back spending without restricting long term economic growth.</i></p>	<p><b><u>Glossary of terms related to the DATA</u></b></p> <p><b>0.25% or basis points</b> A typical/modest level of adjusting interest rates. Anything more is considered drastic ie slashed rates</p> <p><b>QE</b> Aka for printing new money. The Central Bank pumping new money into the economy by purchasing bonds with newly printed money.</p> <p><b>Credit rating</b> AAA (lowest borrowing cost). Once downgraded the borrowing cost soars – 7% tipping point or unsustainable levels. Investors demand higher returns to compensate for the higher risks of default. AAA – risk-free. Probability of default is close to zero.</p> <p><b>Debt/GDP ratio</b></p> <ul style="list-style-type: none"> <li>• A measure of debt sustainability.</li> <li>• Provides a measure of the quantum of a nation's debt in relation to the nation income, and hence it is an indirect measure of a nation's ability to borrow/ service debts.</li> <li>• The higher the ratio, the higher the burden of servicing the debt. Question :</li> <li>• Can the country afford to borrow without the danger of defaulting?</li> <li>• Tipping point is reached with debt ratio becomes so high that private investors are reluctant to lend, except at exorbitant interest rates e.g. Euro Sovereign Debt Crisis.</li> </ul>
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## Suggested Answers to TYS 2011 A Level H2 Economics Essay Questions

### TYS 2011 Q1

Consumers and producers are generally assumed by economists to be motivated by self-interest.

- (a) Explain how, according to economists, the pursuit of self-interest can help to address the problem of limited resources and unlimited wants. [10]  
 (b) Assess whether the price mechanism will always allocate scarce resources in the most efficient manner for all goods and services in a market economy. [15]

### Part (a)

#### Paraphrase the questions + requirements of the questions:

This question asks how consumers and producers, when pursuing their self-interests, enable limited resources to be allocated despite their unlimited wants. Therefore, we need to understand what the respective self-interests of the consumers and producers are, how they go about pursuing them, and how their self-interests overlap.

Dissect Question Using the 3'Cs'	
<b>C – Command word</b>	<b>Explain:</b> Use SEE approach
<b>C – Concept (s)</b>	Limited resources and unlimited wants – Scarcity, which is in other words the 'Central Problem of Economics'.
<b>C – Context</b>	Behaviour of consumers and producers in pursuing their respective self-interests

### Schematic Plan

<b>Introduction – focus on the central concepts to be explained.</b>
<ul style="list-style-type: none"> <li>Scarcity is a universal problem faced by every society. This problem concerns the welfare of society because it has got to do with how best to use society's limited resources to satisfy unlimited wants.</li> <li>Ironically, according to economists, this problem is best resolved by the pursuit of self-interest within the context of a free market economy.</li> <li>It is the aim of this essay to explain how the pursuit of self-interest in a market economy can lead to the maximisation of society's welfare.</li> </ul>
<b>Body</b>
<b>A. Explain the link between scarcity + market economy + satisfaction of wants</b>
Explain what is a market: <ul style="list-style-type: none"> <li>Economy in which wants are satisfied by exchange of goods and services (i.e. buying and selling).</li> <li>Hence consumers and producers have different self-interest when buying and selling goods in the market.</li> <li>Graphically, a market is best illustrated by using a demand and supply diagram.</li> </ul>
<b>B. Pursuit of self-interest – Using demand and supply concepts</b>
<b>Demand curve</b> <ul style="list-style-type: none"> <li>The self-interest of consumers revolves around maximizing the consumer surplus from the consumption of goods and services, given their limited disposable income.</li> <li>Because their disposable income is limited, consumers are constrained by their <i>ability and willingness to pay for goods and services</i>.</li> <li>Consumers thus have to make choices since it is impossible for them to consume everything.</li> <li>Opportunity costs are thus incurred, because the spending of disposable income on one type of good or service means that another type of good or service has to be forgone.</li> <li>It is in the self-interest of consumers to pay only according to the satisfaction or value they received from each additional unit of output.</li> <li>As marginal utility falls, price that consumers are willing to pay also falls. Hence demand curve slopes downwards.</li> </ul>
<b>Supply curve</b> <ul style="list-style-type: none"> <li>The self-interest of producers revolves around maximizing the producer surplus they derive from the sale of goods and services, given limited resources and cost constraints.</li> <li>Because resources acquired and owned by producers are limited, producers have to make choices since it is impossible for producers to produce everything.</li> <li>Opportunity costs are also incurred because the usage of resources to produce one type of good or service means that the production of another type of good or service has to be forgone.</li> <li>Therefore, producers need to decide <i>What to Produce, How to Produce and For Whom to Produce</i>, given the consumers' <i>ability and willingness to pay</i>.</li> </ul>

- It is in the self-interest of producers to charge more as marginal cost rises in order to max profits. Hence, supply curve slopes upwards.

### C. Market Equilibrium Outcomes and Society's Welfare

Given demand curve is upward-sloping and supply curve is downward sloping the point where they intersect is the market equilibrium.

Diagram

Market equilibrium outcomes:

No shortages or surpluses

Consumer surplus is maximised

Producer surplus is maximised

Society's welfare is maximised

### Conclusion

The market economy is driven by the pursuit of self-interest as buyers and sellers make decisions based on what is in their best interest. However, the outcome is socially efficient because scarce resources are allocated in a manner that maximises society's welfare. Thus, according to economists, the pursuit of self-interest can help to address the problem of scarcity by promoting society's interest as well.

### Part (b)

#### Paraphrase the questions + requirements of the questions:

**This question requires you to recapitulate the meaning of allocating scarce resources in the "most efficient manner". Is this possible in reality? What are the factors that may hinder resources from being allocated in the most efficient manner?**

A practical question you might want to ask yourself while attempting this question:

- If the price mechanism were so perfect in allocating resources, then why is there more often than not a need for government intervention? It shows that the price mechanism is not entirely perfect...

#### Dissect Question Using the 3'Cs'

<b>C – Command word</b>	Assess: Thesis/anti-thesis expected; evaluation expected; conclusion with reasoned judgment expected.
<b>C – Concept (s)</b>	Efficient allocation of resources
<b>C – Context</b>	Free workings of the price mechanism in a market economy

### Schematic Plan

<b>Introduction – focus on the central concept the price mechanism</b>	
The price mechanism is a reference to the use of prices as signals and profits as the incentive to allocate resources in a market economy. In theory the price mechanism is supposed to allocate resources in the most efficient manner. However, in reality this is not always true due to sources of market failure and shall be discussed in this essay.	
<b>Thesis: Yes, in theory the price mechanism is the most efficient in allocating scarce resources.</b>	<b>Anti-thesis: No, price mechanism is not efficient in allocating scarce resources due the presence of market failure</b>
<ul style="list-style-type: none"> <li>Scarcity + Choice or Resource Allocation</li> <li>What and How much to produce?</li> <li>How to produce?</li> <li>For whom to produce?</li> </ul> <p>Price mechanism is efficient because it can deliver the following outcomes:</p> <ul style="list-style-type: none"> <li><b>Allocative Efficiency</b> – right mix of goods in the right quantities. Right = according to consumers taste and preferences.</li> </ul>	<p>In reality, market failure exists in various forms such as public goods, externalities; imperfect information, market dominance and factor immobility.</p> <p><b>Elaboration</b></p> <ul style="list-style-type: none"> <li>Public Goods e.g. national defence, law and police, street lighting, Road signage; No provision or allocation. Why?</li> <li>Merit goods e.g. health care and education; Under-provision or under-allocation. Why? (Diagram)</li> </ul>



<ul style="list-style-type: none"> <li>• <b>Productive Efficiency</b> – least-cost method</li> <li>• <b>Distributional efficiency</b> – distributed to those who value the goods most highly.</li> </ul>	<ul style="list-style-type: none"> <li>• Demerit Goods E.g. tobacco smoking and car ownership; Over-production/consumption (Diagram)</li> </ul>
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### Conclusion (Justified judgement)

Whilst in theory the price mechanism is supposed to allocate resources efficiently for ALL goods and services in a market economy, this is often not true in reality. In reality the price mechanism cannot allocate resource efficiently where there is market failure such as the provision of public goods, merit goods and demerit goods as discussed above. In such instances, the unaided price mechanism results in the misallocation of resources and the consequent negative impact on society's welfare.

Hence, in aiding the price mechanism, government intervention is necessary to ensure that resources are allocated in the most efficient manner for all goods and services in a market economy.

## Detailed Answers

### Question 1(a)

#### Introduction

- Scarcity is a universal problem faced by every society. This problem concerns the welfare of society because it has got to do with how best to use society's limited resources to satisfy unlimited wants.
- Ironically, according to economists, this problem is best resolved by the pursuit of self-interest within the context of a free market economy.
- It is the aim of this essay to explain how the pursuit of self-interest in a market economy can lead to the maximisation of society's welfare.

#### Body

#### Explain the link between scarcity and market economy

A market is where buying and selling takes place for goods and services with the aim of satisfying wants. A market economy is based on a system of specialisation and exchange which entails the use of money and prices. In this system of exchange, goods are produced for sale in the markets and consumers buy these goods from the producers by paying the prices for them with their money. In making the decisions to buy and sell, both consumers and producers are guided by the pursuit of self-interest. Consumers aim to max satisfaction and producers aim to max profits.

In a perfect competitive market, consumers and producers maximise consumer and producer surplus respectively.

#### Pursuit of self-interest – Using demand and supply concepts

The pursuit of self-interest can be represented graphically by the market demand and supply curves for goods and services.

#### Demand curve

- The self-interest of consumers revolves around maximizing the consumer surplus from the consumption of goods and services, given their limited disposable income.
- Because their disposable income is limited, consumers are constrained by their *ability and willingness to pay for goods and services*.
- Consumers thus have to make choices since it is impossible for them to consume everything.
- Opportunity costs are thus incurred, because the spending of disposable income on one type of good or service means that another type of good or service has to be forgone.
- It is in the self-interest of consumers to pay only according to the satisfaction or value they received from each additional unit of output.
- As marginal utility falls, price that consumers are willing to pay also falls. Hence demand curve slopes downwards.

#### Supply curve

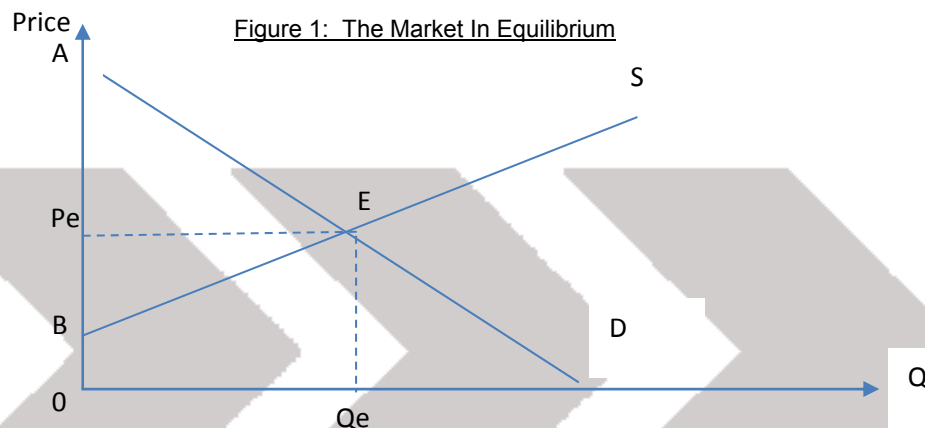
- The self-interest of producers revolves around maximizing the producer surplus they derive from the sale of goods and services, given limited resources and cost constraints.
- Because resources acquired and owned by producers are limited, producers have to make choices since it is impossible for producers to produce everything.
- Opportunity costs are also incurred because the usage of resources to produce one type of good or service means that the production of another type of good or service has to be forgone.
- Therefore, producers need to decide *What to Produce, How to Produce and For Whom to Produce*, given the consumers' *ability and willingness to pay*.
- It is in the self-interest of producers to charge more as marginal cost rises in order to max profits. Hence, supply curve slopes upwards.

#### Market Equilibrium Outcomes and Society's Welfare

The outcome of the interplay of self-interest is graphically represented by the market equilibrium.

With buyers and sellers acting in self-interest, a free market would reach an equilibrium at the point of intersection between the

demand and supply curves as shown by point E in Figure 1.



#### **No shortages or surpluses**

At this point, the  $Q_d = Q_s$ . Producers are supplying exactly the quantities consumers want. There is neither a shortage nor a surplus of the good in the market.

If too much is produced relative to the preferences of consumers, prices will start to fall to signal a surplus. On the other hand, if too little is produced, prices will start to rise to signal a shortage. The profit-incentive ensures that producers will respond accordingly to the price signals by directing resources to produce more when prices rise and less when prices fall. Thus, the most desired quantity of output produced is the allocatively efficient output at  $Q_e$ .

#### **Consumer surplus is maximised**

The area APE represents the consumer surplus. It refers to satisfaction consumers for which they need not pay. In other words consumer surplus represents a “bonus” to consumers or satisfaction consumers enjoyed.

#### **Producer surplus is maximised**

The area PBE represents the producer surplus. These are profits which are above the normal or opportunity costs of production. It is a surplus to producers because it represents “extra” or supernormal profits.

Finally, the combined area  $APeE + PeBE$  represents the maximisation of society's welfare.

#### **Conclusion**

The market economy is driven by the pursuit of self-interest as buyers and sellers make decisions based on what is in their best interest. However, the outcome is socially efficient because scarce resources are allocated in a manner that maximises society's welfare. Thus, according to economists, the pursuit of self-interest can help to address the problem of scarcity by promoting society's interest as well.

#### **Question 1(b)**

##### **Introduction**

The price mechanism is a reference to the use of prices as signals and profits as the incentive to allocate resources in a market economy. In theory the price mechanism is supposed to allocate resources in the most efficient manner. However, in reality this is not always true due to sources of market failure and shall be discussed in this essay.

##### **Body**

**Thesis: Yes, in theory, price mechanism is the most efficient in allocating scarce resources.**

##### **Scarcity + Choice**

In the context of scarcity where wants are unlimited and resources are limited, every society has to make choices with regard to what and how much to produce? How to produce and for whom to produce?

##### **Maximisation of society's welfare**

In theory, the price mechanism is able to allocate resources efficiently in such a manner that society's welfare is maximised.

The price mechanism works on the basis of Consumer Sovereignty. In other words, prices act as signals and profit as the incentive to direct producers to produce goods in accordance with consumers' tastes and preferences. Ultimately it is the consumers who decide how resources should be allocated through the price mechanism.

How price mechanism allocates resources is best explained with reference to the diagram in Figure 1 in part (a).

##### **Allocative Efficiency**

As explained in part (a), the price mechanism ensures that the market eventually reaches an equilibrium and produces at point E where  $Q_d = Q_s$ . At this point, the quantity produced is neither too much (no surplus) nor too little (no shortage).

### Productive Efficiency

The desire to maximise profits drives producers to minimise costs. Thus, producers are motivated to use factors of production in the most efficient manner using the least-cost method of production which is the productively efficient method.

### Distributional efficiency

The goods produced are finally rationed or distributed through the price mechanism to those who are willing to pay or bid the highest prices for them. In other words, the goods go to those who value them most highly. This is an efficient system because it ensures that goods produced are distributed only to those who can get the most satisfaction out of them and hence there is no wastage.

At the end of the day, the price mechanism acts in accordance with consumers' preference to ensure that the most desired mix of goods and services are produced in the desired quantities at the least-cost.

Thus it can be said that the price mechanism allocates resources in the most efficient manner by ensuring that society can get the most satisfaction and value out of its scarce resources.

### Anti-thesis: No, price mechanism is not efficient in allocating scarce resources due to the presence of market failure

However, whenever there is market failure, the price mechanism cannot allocate resources efficiently.

In reality, market failure exists in various forms such as public goods, externalities; imperfect information, market dominance and factor immobility.

#### Public Goods

- Public goods are socially beneficial goods such as national defence, law and order; street lighting and road signage which the market cannot provide.
- Such goods promote society's welfare e.g. national security and public infrastructure but the free market cannot produce them because of the problem of free ridership as public goods are non-excludable and non-rivalrous.
- **Non-excludability** of a good means that it is impossible or prohibitively expensive to exclude non-payers from consuming that good. Take for instance street lighting. Once provided, it is impossible to prevent any individual, whether or not they have contributed towards paying for it to enjoy the benefits of lighted streets.
- Likewise, street lighting is **non-rivalrous** in nature. Non-rivalry of a good implies that the consumption of it by one person does not diminish the amount of that good left for others to enjoy. **Marginal cost of providing the good to the additional user is zero.** This applies for street lighting - as one pedestrian enjoys the light from the street lamps along the walkway, he does not make the street lamp any less bright for others in the vicinity.
- Under such circumstances, the price signals and profit incentive cannot function efficiently to direct producers to produce them efficiently at a profit.
- No private producers would be willing to supply such goods because it is impossible to make a profit.
- Government provision at zero user charge is therefore necessary to correct for this form of market failure. Government can circumvent the problem of free ridership by financing the provision of such goods through compulsory taxation.

#### Externalities

Merit goods are goods which are deemed by the government to be socially desirable for consumption and usually have positive externalities or beneficial spillover effects on society. If left to the free market, such goods will be underproduced and underconsumed. As a result, society's welfare is not maximised.

Merit goods e.g. health care and education are another class of goods which cannot be efficiently provided through the price mechanism.

The **Private Marginal Cost (PMC)** - The private additional cost of producing education e.g. salaries of teachers, principals, utilities bills.

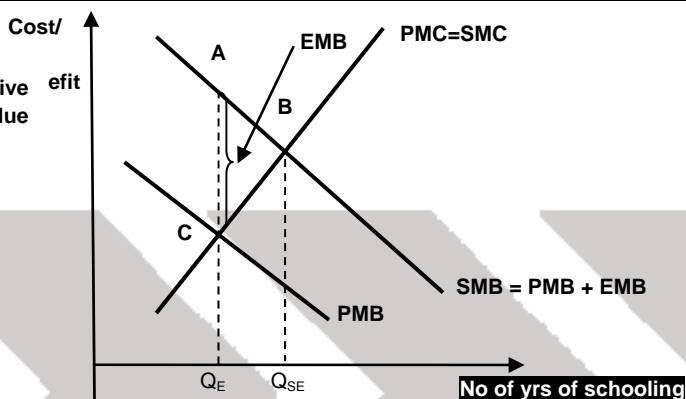
The **Private Marginal Benefit (PMB)** - The private benefits of **additional** years of schooling is the benefit derived from acquiring more knowledge and the prospect of a good paying job.

#### Social Benefits

However, the consumption of education creates positive externality or **External Marginal Benefits (EMB)** to society at large. This positive third party spillover effect includes the benefits of having an educated and skilled workforce to employers and the economy.

The price mechanism fails to bring about a socially efficient allocation of resources in this case. This is because the benefit to other parties created is **unpriced** by the price mechanism and therefore is not included in the **private benefits** of receiving education. Hence we can say that there is a divergence between the **Social Marginal Benefit (SMB)** and the **PMB**, and as a result **SMB lies above that of PMB. i.e.  $SMB = PMB + EMB$ .**

Figure 2a: Positive external benefits due to education.



From Figure 2a, the **market equilibrium** occurs at  $Q_E$ , where  $PMB=PMC$  since consumers only take into account their own benefits and costs. However, due to the presence of positive externalities (EMB) which is represented by AC, the social benefit of receiving education is higher than the private benefit. The socially efficient allocation occurs when society takes into account of the positive externalities when  $SMB=SMC$  at  $Q_{SE}$  (assuming no negative externalities present,  $PMC=SMC$ ). This divergence between private and social benefits causes a misallocation in the form of under-consumption of education illustrated in the diagram by  $Q_{SE}-Q_E$ . As a result of this under-consumption, the potential gain in social benefit of consuming at the  $Q_{SE}$  represented by  $ABQ_{SE}Q_E$  which is greater than the social cost of  $CBQ_{SE}Q_E$  is gone. There is a deadweight welfare loss of ABC.

### Demerit Goods

Demerit goods are goods which are deemed by the government to be socially undesirable for consumption. If left to the free market, such goods will be underproduced and underconsumed. As a result society's welfare is not maximised.

In contrast to merit goods, these are goods which are often associated with negative externalities. Examples of such goods include tobacco smoking and car usage.

### Elaboration using driving

The **Private Marginal Cost (PMC)** of the consumption measures the cost to the consumer from the **additional unit** obtained. In this case, it is the cost, such as petrol, incurred by the drivers in making an extra or additional car journey/trip.

The **Private Marginal Benefit (PMB)** of a good measures the value that the consumer places on the **additional unit** of the good bought. The benefit is the value placed by consumers for the convenience/ease of commuting from place to place by car.

However, when the roads get too congested it creates negative externality or External Marginal Cost (EMC) to third parties. Third-parties are those who are not directly involved either as consumers or producers. In this instance, they refer to other road users who happened to be caught in traffic jams such as students, office-workers and even ambulances and other emergency services like fire engines. The delay is costly to society in terms of loss of productivity, lives and property.

The price mechanism fails to bring about a socially efficient allocation of resources in this case. This is because the cost to other parties created is **unpriced** by the price mechanism and therefore is not included in the **private costs** of consumers. Hence we can say that there is a divergence between the **Social Marginal Cost (SMC)** and the **PMC**, and as a result **SMC lies above that of PMC**. I.e.  $SMC = PMC + EMC$ . What consumers pay is not the same (i.e divergence) as what society has to pay.

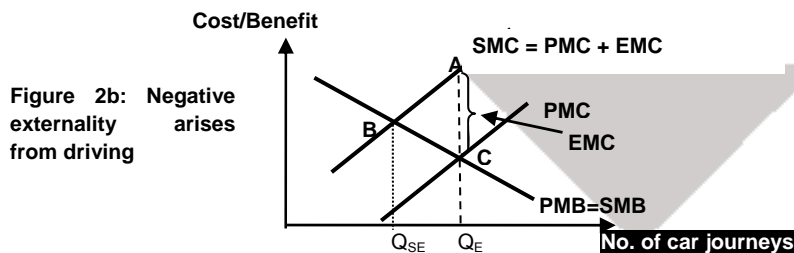


Figure 2b: Negative externality arises from driving

In the diagram above, the **market equilibrium** occurs at  $Q_E$  when car users accounts only for their private benefit and cost i.e.  $PMB=PMC$ . However, due to the presence of negative externalities (EMC which is measured by distance AC) of congestion and inconvenience to other road users, the social cost of car usage is higher than the private cost. Hence, the social equilibrium occurs when society takes into account of the negative externalities when  $SMB=SMC$  at  $Q_{SE}$  (assuming no positive externalities present,  $PMB=SMB$ ) There is an **overconsumption** of cars on the road by  $Q_E-Q_{SE}$ . The overconsumption created an increase in social cost of  $ABQ_{SE}Q_E$ , while the social benefit is only  $CBQ_{SE}Q_E$  resulting in a **deadweight welfare loss** of ABC.

## Conclusion

Whilst in theory the price mechanism is supposed to allocate resources efficiently for ALL goods and services in a market economy, this is often not true in reality. In reality the price mechanism cannot allocate resource efficiently where there is market failure such as the provision of public goods, merit goods and demerit goods as discussed above. In such instances, the unaided price mechanism results in the misallocation of resources and the consequent negative impact on society's welfare.

Hence, in aiding the price mechanism, government intervention is necessary to ensure that resources are allocated in the most efficient manner for all goods and services in a market economy.

## TYS 2011 Q2

Singapore is facing an ageing population issue. By 2030 senior citizens are expected to comprise almost 20% of the population. Using economic analysis, discuss the likely effects of this demographic change on product markets in Singapore. [25]

C – Command word	Discuss: Students need to evaluate extent of change
C – Concept (s)	Demand, Supply, Elasticity concepts; Impact of price and quantity of product markets.
C – Context	Ageing population in Singapore

## Simple Schematic Plan

<b>Introduction</b> Using demand-supply analysis to discuss the demographic challenge and impact on product markets in Singapore.	
<b>Body</b>	
<b>Change in Demand</b>	<b>Change in Supply</b>
<b>Change in tastes and preferences</b> <ul style="list-style-type: none"><li>• Increase in demand for products catering to the elderly population - "silver industry" e.g. Healthcare related products such as wheelchairs, hearing aid, etc.</li><li>• <math>\uparrow P</math> and <math>\uparrow Q</math></li><li>• Elaborate the extent of change depends on PES of the types of goods with appropriate examples</li><li>• Illustrate with diagram</li></ul>	An ageing population may mean a rising wage costs due to lower productivity and manpower crunch especially service sector  <b>Evaluation:</b> Mitigation measures e.g. lengthening retirement age, pro-migration policy.
<b>Implications and evaluation</b> <ul style="list-style-type: none"><li>• Fear of prices skyrocketing out of the reach of the elderly e.g. hospitalisation. But price may not increase that high as supply may increase with suppliers' expectation and government intervention (subsidy) increase in supply will lower price and increase Q; final impact on price is indeterminate which depends on the relative increase in demand and supply. Illustrate with a diagram.</li><li>• May have negative impact on demand for products catering to the younger population (below 65). E.g. big cars and expensive homes. But this is not necessary true as having a larger proportion of elderly does not mean there is a decline in the number of people who are working (% <math>\neq</math> absolute). By 2030, the population is more likely to increase and demand for such products will still rise.</li></ul>	
<b>Falling income and purchasing power of elderly:</b> <ul style="list-style-type: none"><li>• Increase in demand for "inferior goods" or goods with negative YED (explain). E.g. smaller flats and public transportation compared to bigger flats and private car ownership.</li><li>• <math>\uparrow P</math> and <math>\uparrow Q</math></li><li>• Extent of change depends on PES</li><li>• <b>Evaluative comments:</b><ul style="list-style-type: none"><li>• Not true for elderly that retired with substantial passive incomes.</li><li>• There is also the possibility that SS may also fall as firms start to move away from supplying goods</li></ul></li></ul>	



for the young over to supplying goods for the elderly in response to market signals. For example, investors and entrepreneurs might prefer to switch from fast cars and big apartments to smaller apartments set in a retirement village.

### Conclusion

Whilst there is a silver lining due to the expected boom in the silver industry catering to the tastes and preferences of the elderly, there are dark clouds looming in other sectors of the economy. This is due mainly to two major negative impact associated with an ageing population i.e. falling purchasing power and lower productivity.

However, these negative outcomes may be mitigated by timely pre-emptive measures to rejuvenate the population (increase birth rates or migration); raise productivity and encourage the elderly to remain economically active for as long as possible.

## Detailed Answers

### Question 2

#### Introduction

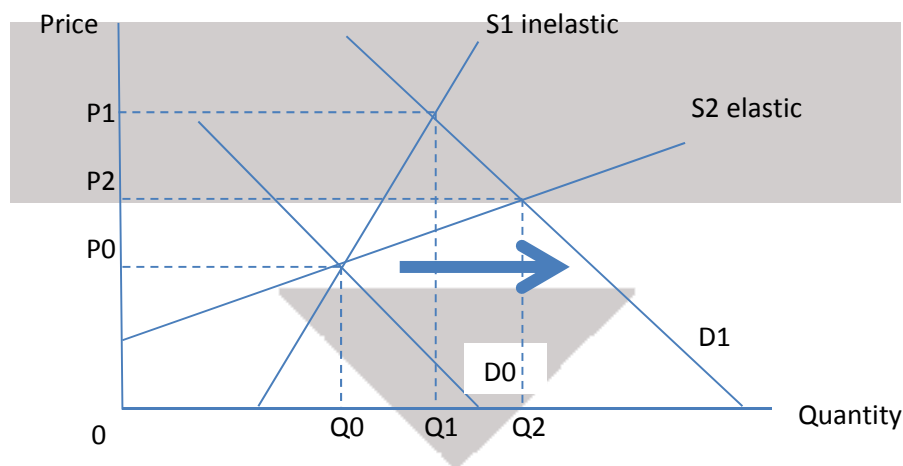
It is a known fact that Singapore is facing a demographic challenge in the form of a “silver tsunami” that will hit the country by 2030, when 1 out of every 5 persons will be 65 years of age and above. It is the aim of this essay to discuss the possible impact of this demographic change on product markets in Singapore using demand and supply analysis.

#### Body

##### Impact on Demand – Change in tastes and preferences and Incomes

- As the population ages the elderly will form a significant proportion of the market for consumer goods and services.
- The product markets are likely to experience a significant change in the demand pattern which will reflect the tastes and preferences of this group of elderly consumers.
- In particular, it is predicted that there is likely to be a boom in the so-called “silver industry” – an industry catering to the tastes and preferences of the elderly.
- For example, in the health-care sector the demand may veer towards more elderly care centres, wheel chairs, walking and hearing aid; hospices and medical treatment for the elderly patient e.g. geriatrics.
- Given such changes in tastes and preferences products that are meant for the elderly population is likely to experience in a surge in demand that will cause both price and quantity exchanged to rise.
- The extent of the increase on price and quantity will depend on the elasticity of supply.
- Ceteris paribus, the impact of the surge in demand for elderly care services is likely to result in significantly higher prices for these products especially if supply is price inelastic.

Figure 1 : The Market for elderly Care Centres



Referring to the figure above, when demand increases from  $D_0$  to  $D_1$ , price and quantity exchanged increase to  $P_1$  and  $Q_1$  for a price inelastic supply and  $P_2$  and  $Q_2$  for a price elastic supply. For a price inelastic supply, the price rise is more than significant than the rise in quantity and a price elastic supply, quantity increases more than proportionate than price.

This example of a possible hike in prices due to the surge in demand when the silver tsunami hits could be extended across a whole range of elderly care products e.g. hospitalisation and home nursing. Hence, this prediction has implication for the welfare of the



elderly.

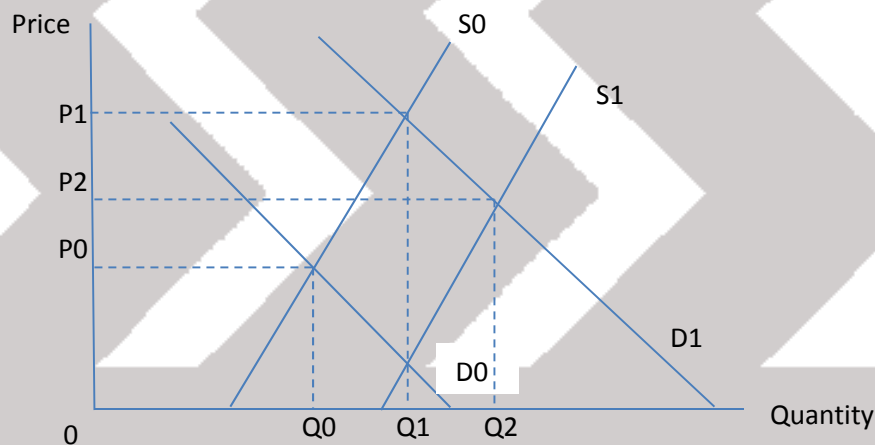
#### Evaluative comments:

A key concern is whether the elderly can afford to enjoy good health care services in the light of rising future medical costs. The extent prices will increase will depend on the existence of spare capacity in this sector. If there is ample existing spare capacity, the increase in prices is likely to be in the moderate range. This may explain why in Singapore the government is already planning ahead by building more of such elderly care centres as well as more hospitals in anticipation of increasing demand as the population ages so as to avoid a future crunch in supply and spike in prices for such products. Also, to allay such concerns the government in Singapore has begun to introduce measures such as strengthening the 3Ms (Medisave, Medishield and Medicare) for elderly to ensure such services continue to remain affordable well into the future.

#### Long run impact

In the long run, the supply curve is likely to shift rightwards with the government policy and as this business becomes more profitable, it will attract more firms into the industry on the assumption that there are no significant barriers to entry. The increase in supply will lower price and increase quantity and final impact on price is indeterminate which depends on the relative increase in demand and supply.

Figure 2: Simultaneous shifts in Demand and Supply



A rise in demand from  $D_0$  to  $D_1$  causes the price and quantity to rise from  $P_0$  and  $Q_0$  to  $P_1$  and  $Q_1$  respectively. When supply increases from  $S_0$  to  $S_1$ , it will bring down the price from  $P_1$  to  $P_2$  and quantity further increases to  $Q_2$ .

**Judgment:** So an increase in both demand and supply will increase quantity but price is indeterminate as depends on the relative shifts. In the above diagram, as demand increases more than supply, price falls.

#### The impact on non-elderly friendly products or products for the younger population

- As the % of the population becomes older it stands to reason that demand goods favoured by the young will be negatively impacted.
- Typical examples of goods favoured by the younger set say from teens to young working adults in Singapore includes cars; housing and entertainment (e.g. restaurant; movies; pubs)
- Moreover goods that cater to the very young (babies and kids) e.g. child-care centres; tuition centres and toys might suffer a decline assuming the fertility rate has remained the same.
- The fall in demand will lead to a fall in price and quantity exchanged.
- The extent of the decrease on price and quantity will depend on the elasticity of supply.
- Illustrate with diagram

#### Evaluative comments

However, given that the absolute population size is still growing, the impact on the demand for such goods favoured by the young may still increase though may not at a high rate.

Besides, there is also the possibility that supply may also fall as firms start to move away from supplying goods for the young, over to supplying goods for the elderly in response to market signals. For example, investors and entrepreneurs might prefer to switch from running tuition centres to elderly care centres as tuition industry contracts and the elderly care industry expands.

#### Change in income and Impact on demand for goods and services

- An ageing population has also impact on income and purchasing power.
- Income and purchasing power are likely to decline as more and more people retire from the workforce. Assuming this to be the case, the impact would be negative on the demand for normal goods but positive for inferior goods.
- For normal goods especially luxurious goods demand is likely to fall as the elderly switch to buying more affordable alternatives

e.g. smaller apartments or studio apartment instead of bigger and more luxurious homes.

- Similarly, demand for new cars is likely to fall whereas demand for cheaper modes of transportation like cabs or bus rides might rise as the elderly switch to taking more public transportation.

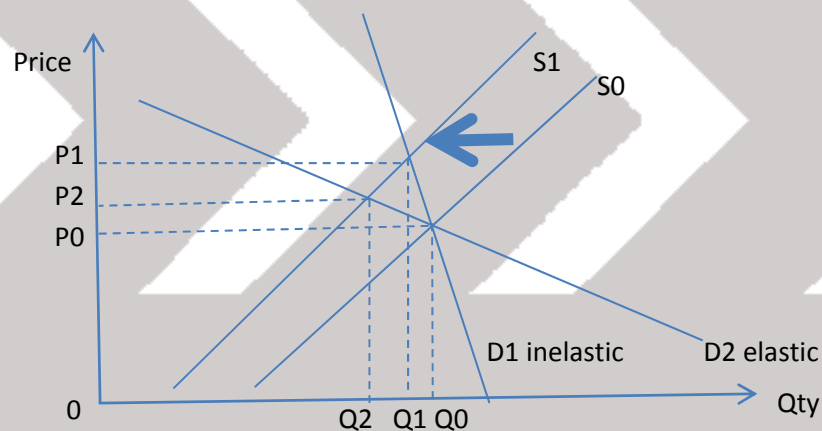
#### Evaluative comments:

Whilst it is true that most elderly would suffer a fall in income and hence have to adjust to a lower standard of living by purchasing "inferior goods" however there are some who can retire comfortably because they have substantial passive incomes in the form of investment incomes and CPF savings.

#### Supply side impact

- An ageing population has also impact on the supply of product markets.
- This impact is based on the fact that as the population ages there is likely be wage cost pressures. This is due to the fact that an ageing workforce is likely to be less productive and firms are likely to face a labour crunch as more and more elderly workers retire from the labour force.
- As wage cost rises across the board, firms will experience higher production costs which they could pass on to consumers by jacking prices of goods and services.
- As a result prices are expected to rise for many products especially where it is difficult to substitute labour with capital, e.g. service sector.
- Lower supply will lead to a rise in price and a fall in quantity traded.
- The extent of change depends on price elasticity of demand. Elaborate with Figure 3 below.

Figure 3: Impact of ageing population on supply of products especially service sector



#### Evaluation:

Whilst there is the possible upward pressure on wage costs, however, measures to mitigate this effect on wage costs can be taken such as extending the retirement age and raising productivity through the use of technology.

#### Conclusion

Whilst there is a silver lining due to the expected boom in the silver industry catering to the tastes and preferences of the elderly, there are dark clouds looming in other sectors of the economy. This is due mainly to two major negative impact associated with an ageing population i.e. falling purchasing power and lower productivity.

However, these negative outcomes may be mitigated by timely pre-emptive measures to rejuvenate the population (increase birth rates or migration); raise productivity and encourage the elderly to remain economically active for as long as possible.

**TYS 2011 Q3**

- (a) Explain how the different features of monopolistic competition and oligopoly affect the price and output determination in these market structures. [10]
- (b) Recession will affect firms in different ways depending, for example, on what they produce and the market structure in which they operate. Discuss the likely effects of a recession on different firms. [15]

<b>C – Command word</b>	Explain
<b>C – Concept (s)</b>	Features of Oligopoly and Monopolistic Competition. Output or/and price decisions.
<b>C – Context</b>	Theoretical

**Schematic Plan****Part (a)**

<b>Introduction</b>
Price and output decisions in different type of market structure depend on the features.
<b>Body</b>
<b>Monopolistic Competition Firm</b> <b>Features</b> <ul style="list-style-type: none"> <li>Many small firms selling a slightly differentiated output or product and there are virtually no barriers to entry.</li> <li>Price setters – limited market power (no uniform market price)</li> <li>Diagram: A typical monopolistically competitive firm in LR equilibrium earning normal profit (price and output at <math>MC=MR</math>, <math>P&gt;MC</math> – difference is small)</li> </ul>
<b>Oligopoly Firm</b> <b>Features</b> <ul style="list-style-type: none"> <li>A few large or dominant firms selling either a differentiated or homogeneous product with very high entry barriers into the industry.</li> <li>Price setters – substantial market power</li> <li>Diagram: Price and output at <math>MC=MR</math>, <math>P&gt;MC</math> – difference is big (steeper <math>AD/MR</math> than monopolistic competition firm)</li> <li><b>ELABORATE on Mutual Interdependence =&gt; different pricing policies (Price rigidity, Price leadership, Price war and Price fixing)</b></li> </ul>
<b>Conclusion</b>
To sum up, the key difference between monopolistic competition and oligopoly is that the former can act independently in making price and output decisions, whereas there is a high degree of mutual interdependence in making such decisions in an oligopoly market.

**Part (b)**

<b>C – Command word</b>	Discuss
<b>C – Concept (s)</b>	Recession's impact on firm's pricing and output decisions under various scenarios.
<b>C – Context</b>	Theoretical

<b>Introduction</b>
A recession is a time when the economy experiences a slowdown or contraction in economic activity. It is usually not a good time for firms or businesses. However the impact on firms is not the same, depending on the types of goods they sell and the type of market structure they operate in. This essay aims to discuss how firms may be affected differently in a recession.
<b>Body</b>
<b>Different products</b>
<b>Normal goods</b> Demand falls – YED is positive e.g. mass market cars compared to high end super luxurious models. Diagram showing profits fall with a fall in $AR/MR$ .
<b>Inferior goods</b> Demand increases e.g. second hand cars, budget air travel – YED negative. Enjoy good business.
<b>Different market structure</b>
<b>Monopolistic Competition</b>

Firms operating in a monopolistic market are likely to be more vulnerable in a recession than firms operating in an oligopoly market since they earn only normal profits in the LR. They will have to shut down if  $AR < AVC$ .

### Evaluation

The ability of monopolistic competitive firms to survive a recession also depends on their ability to differentiate their products successfully in the market. Firms may be able to survive if they can successfully engage in product differentiation to remain competitive E.g. Offer better service/packaging and special promotions.

However, their ability to engage in promotions depends on whether they have the necessary resources or funds as they are basically small businesses with limited resources.

### Oligopoly

Firms in an oligopoly market are less vulnerable to the ill-effects of a recession for 2 key reasons:

- (a) Big firms - more financial resources e.g. supernormal profits
- (b) Scope for mutual support: E.g. Strategic alliances to tide over difficult times.

### Evaluation

However, in a severe recession firms might be forced to engage in a price war. In the event of price war only the fittest survive. Alternatively, they may opt for mergers to consolidate their market share and bigger firms may choose to acquire smaller firms.

### Conclusion

In a recession both the product, as well as the market structure are key factors that can explain how firms are affected differently.

Whilst a recession may hit businesses generally, nevertheless, theory suggests that the impact is not the same for all firms. Some might even profit in bad times if they sell inferior goods and others might find it easier to survive because they are able to forge business alliances such as oligopoly firms.

## Detailed Answers

### Question 3(a)

#### Introduction

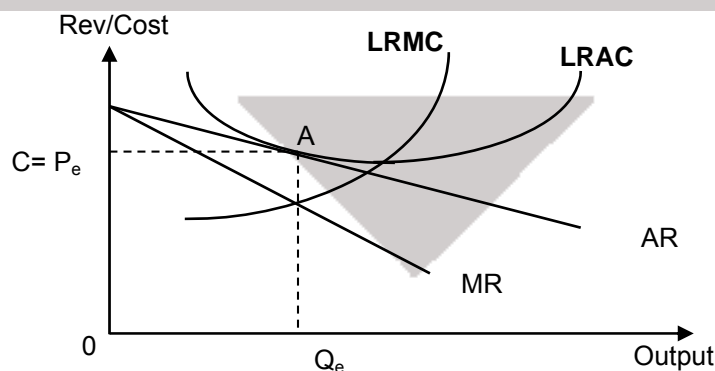
Price and output decisions have to be made by every business firm and how such decisions are made is influenced by the different features associated with each type of market structure. This essay aims to explain how the different features of monopolistic competition affect the firm's pricing and output decision.

#### Body

#### Monopolistic Competition

- Monopolistic Competition is market where there are many small firms selling a slightly differentiated output or product and there are virtually no barriers to entry.
- Each firm has only an insignificant market share relative to the size of the market.
- A typical example is that of the market for hawker food e.g. chicken rice. The chicken rice sold by each stall is slightly differentiated and so there are many very close substitutes available. There are also many such stalls in the market and none can be said to have a significant market share.

Figure 1a: A typical monopolistically competitive firm in LR equilibrium



From Figure 2, at the profit maximizing output where  $MC=MR$ , the firm has a total revenue of area  $0P_eAQ_e$  and is the same as total cost,  $0CAQ_e$ , thus earning normal profit, where  $P = LRAC$

### Sub-Optimal Output

At this output the  $P > MC$  which indicates that the firm is producing below the socially optimal or allocatively efficient level of output. This is because the firm is a price setter and hence faces a downward-sloping demand curve. The product it sells is unique or slightly differentiated and hence it has some degree of market power albeit very limited.

### No entry barriers

When in LR equilibrium every firm makes only Normal profits where  $AC = AR$  as shown in Figure 1. This is because there are no entry barriers into this market. New firms can enter easily if there are supernormal profits and existing firms will leave if they are making sub-normal profits or losses.

### Excess capacity

It should also be noted that monopolistic competition firms in LR equilibrium typically produced an output that corresponds to the falling portion of the AC curve. This implies there is excess or idle capacity. In other words the monopolistic competition firms are not working at full capacity and this is manifested in periods of off-peak hours, e.g. chicken rice stalls are not always packed to capacity throughout its opening hours. It is usually packed during lunch and dinner times but at other times the stall is operating below full capacity.

### Pricing policy

Monopolistic competition firms are price-setters. Hence there is no uniform industry price e.g. Different hawkers may charge different prices for a plate of chicken rice. Differential pricing is possible because the product sold is non-homogeneous but slightly differentiated. The uniqueness of each seller's product gives them the market power to set their own prices. However, the price differential is not very wide because the products sold are close substitutes or highly price elastic. This limits the market power of the firms.

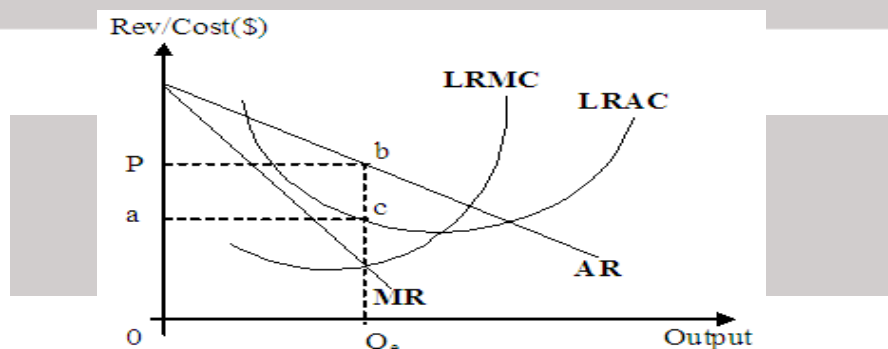
### Market share and pricing policy

Competition in this market does not take the form of price wars or price under-cutting. This is because in such markets each firm has only a very insignificant market share as by definition they are small firms. Cutting or slashing prices will not result in any significant gain in market share. This is very much unlike oligopolistic firms where price wars may erupt whenever firms feel threatened by rivals out to steal their market share.

### Oligopoly

- Oligopoly is a market where there are few large or dominant firms selling either a differentiated or homogeneous product, and entry barriers into the industry are very high.
- Each firm in an oligopoly market has a significant market share and hence has substantial market or pricing power.
- A typical example is that of the market for Fast Food in Singapore as it is dominated by large fast food chains such as McDonalds, KFC and Burger King.

Figure 1b: LR Equilibrium of an Oligopolistic Firm



From Figure 1b, at the profit maximizing output where  $MC = MR$ , the firm has a total revenue of  $OP_bQ_e$  and total cost of  $OacQ_e$  and will earn supernormal profit of  $PacQ_e$ , where  $P > LRAC$ .

### Output determination

Like any profit-maximising firm, an oligopoly firm will choose to produce an output where  $MC = MR$ . Like monopolistic firms, the output produced where  $P > MC$  and is socially sub-optimal or allocatively inefficient. This is again because the firm is a price setter and hence faces a downward-sloping demand curve.

*However, due to the presence of only a few firms, the demand curve is much steeper or price inelastic compared to monopolistic competitive firm. This implies that the firms have substantial market power.*

### Mutual interdependence

However, what is the most unique aspect of their price and output determination is that it is governed by a high degree of mutual interdependence or rival consciousness.

As such, unlike monopolistic competitive firms, they do not make independent decisions. Their decisions are very much influenced by how other firms in the market will act or react to their initiatives. Thus, in this market are 2 basic models to explain their pricing and output behaviour viz collusive versus non-collusive behaviour.

### **Kinked demand and Price rigidity**

A good example of such interdependent decision making is exemplified by the Kinked demand curve hypothesis. In this model, the firms typically avoid price competition, preferring to let the prevailing market price remains unchanged for as long as possible. Hence there is price rigidity. This is because they reckon that if they raise price independently their rivals will not follow. As a result they will lose market share and revenue. However, if they lower price independently they will also end up losing revenue because the rivals will match every price cut. The best strategy is therefore to leave price alone and concentrate on offering a better product to their customers.

### **Price leadership**

The high degree of mutual interdependence may also explain why sometimes oligopolistic firms prefer to follow a price leader. This is a form of tacit collusion. This form of pricing policy allows every firm to benefit as there is some form of mutual agreement not to compete to the detriment of everyone in the industry.

### **Price war**

However, occasionally the firms may decide it is in their best interest to engage in a price war. For example in a crisis when demand is falling sharply e.g. severe recession the market might become overcrowded. At such times, the incumbent firms might have to fight it out by slashing prices in order to retain their market share.

### **Price fixing agreements**

Given that the market is dominated by just a few firms, sometimes they might want to collude to fix prices e.g. OPEC oil cartel. This is form of explicit or open collusion. Again this form of pricing behaviour is a form of mutual agreement to avoid competition.

### **Conclusion**

To sum up, the key difference between monopolistic competition and oligopoly is that the former can act independently in making price and output decisions, whereas there a high degree of mutual interdependence in making such decisions in an oligopoly market.

### **Question 3(b)**

#### **Introduction – Focus on the key issues – Impact of Recession on different firms - vulnerability.**

A recession is a time when the economy experiences a slowdown or contraction in economic activity. It is usually not a good time for firms or businesses. However the impact on firms is not the same, depending on the types of goods they sell and the type of market structure they operate in. This essay aims to discuss how firms may be affected differently in a recession.

#### **Body**

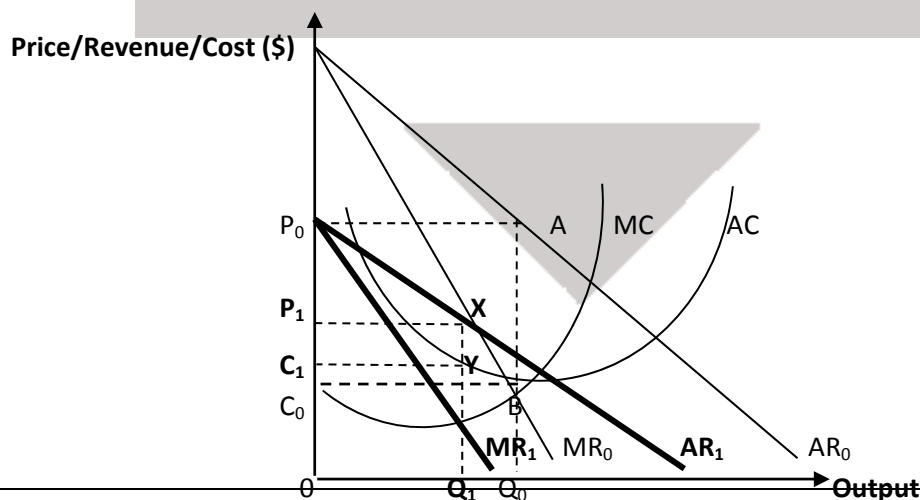
##### **Different products**

In the first place, how firms are affected in a recession will depend on the kind of product they sell.

##### **Normal goods**

Typically, firms selling normal goods should experience a fall in demand. This is because such goods e.g. new cars as compared to second-hand cars have positive YED. This implies that consumers are likely to cut back their spending on such goods when times are bad because of falling purchasing power.

**Figure 1: Increase in profits due to an increase in demand**





- With reference to Figure 1, for such firms the demand curve shifts inwards. Ceteris paribus, they should experience a fall in revenue and profits. The extent of the fall in demand depends on the degree of income elasticity – the higher the income elasticity, the greater the fall in demand.
- This fall in demand for their products and hence their revenue, ceteris paribus. (Price decreases from  $P_0$  to  $P_1$ , output decreases from  $Q_0$  to  $Q_1$ , and profit decreases from  $P_0ABC_0$  to  $P_1XYC_1$ ).
- If the fall is so bad that AR is below AVC, the firm will have to shut down.

#### Evaluative comments

However, what constitutes normal or even luxury goods to a consumer would depend on their unique circumstances. For example, in a recession an ordinary working class person may find buying a new car a luxury. He is likely to turn to cheaper substitutes such as buying a second-hand car. But, the same car might not be even be considered a luxury for a rich tycoon even in a recession. Hence, for firms selling super-luxurious models, e.g. Porsches and Ferraris may not be badly affected in a recession, as their clients are the super-rich. Whereas, firms selling mass market cars may experience sharp fall in business during a recession.

#### Inferior goods

In bad times, firms selling inferior goods are likely to experience good business. The demand for inferior goods is likely to rise because such goods have got a negative YED. For example, in a recession consumers might prefer to save costs and travel budget rather than by premium airlines. Hence, the demand for air travel by budget airlines is likely to increase. Firms or airlines supplying such services are likely to experience better business. Whereas airlines supplying premium services are likely to experience setbacks in their business such as falling demand, revenue and profits.

Hence, in a recession firms that are selling so-called upmarket luxury expensive products might opt to go down-market and sell low-end cheap no frills products. A good example could be premium airlines supplying budget airline services in bad times.

#### Different market structure

Recession impact firms differently also because of the kind of market structure in which they operate.

The 2 most common type of market structures are monopolistic competition and oligopoly.

#### Monopolistic Competition

- Firms operating in a monopolistic competition market are likely to be more vulnerable in a recession than firms operating in an oligopoly market.
- First, these are small firms or small businesses with limited resources and are thus in a weak position to weather the storms of a recession.
- Monopolistic competition firms are especially vulnerable to falling demand especially those making only normal profits. Unlike oligopoly firms, they do not have the extra 'buffer' in the form of supernormal profits to help them tide over the recession.
- Shutting down: If existing monopolistic competition firms are making only normal profits, a fall in demand will result in losses. If the  $P < AVC$  or cannot cover variable costs, the firms will shut down and leave the industry.

#### Evaluative comments:

However, the ability of monopolistic competition firms to survive a recession also depends on their ability to differentiate their products successfully in the market. Firms may be able to survive if they can successfully engage in product differentiation to remain competitive e.g. Offer better service; advertising and special promotions.

However, their ability to engage in promotions depends on whether they have the necessary resources or funds as they are basically small businesses with limited resources.

Or, being a small firm, monopolistic firms may be more able to react to the economic conditions and cut cost or re-organise their business model.

#### Oligopoly

Firms in an oligopoly market are less vulnerable to the ill-effects of a recession for 2 key reasons:

##### (a) More financial resources e.g. supernormal profits

In a recession, oligopoly firms selling normal goods are likely to be hit by falling demand. However, they are in a better position to weather such storms because of supernormal profits/ accumulated reserves. Such profits act as a buffer to enable them to tide over hard times. They can also be used by the firm to engage in product differentiation e.g. advertising and promotion to retain their market share.

#### Evaluative comments:

However, in a severe recession firms might be forced to engage in a price war. In the event of price war only the fittest survive. Alternatively, oligopoly firms may opt for mergers to consolidate their market share and bigger firms may choose to acquire smaller firms.

*In Aug 2010, there was an incidence of 98-Octane petrol price war. Oil companies differentiated their 98-octane petrol. Caltex's 98, marketed as an*

equivalent to Shell's V-Power, is \$1.945; Shell's 98 is \$1.90; while **Esso** and Singapore Petroleum Co retailed theirs at \$1.89 a litre. Shell's V-Power remained the costliest fuel, at \$2.099. **Prices** of other fuels were uniform. After a 2-cent across-the-board reduction, **prices** of 95 and 92-octane fuel (unavailable at Shell) were at \$1.817 and \$1.757 respectively.

Another example of airlines price war, in December 2008, dramatic reductions have been made in an attempt to woo passengers in the New Year, when effects of the economic downturn were exacerbated by a post-Christmas slump. British Airways offered a return flight to New York for as little as £259 and had cut the cost of flights to more than 75 other countries. Virgin Atlantic retaliated by undercutting the BA sale prices by £1 on many long haul destinations, including Chicago and Los Angeles. Even though the seat sales were an annual event, analysts believed this time round they were the latest shots in what could be a fierce battle between carriers to fill their planes as the recession bites.

For example, in 1998, as the regional financial landscape was being reshaped after the worst Asian banking crisis in a generation, DBS Bank merged with POSB. Three years later, it went on to enlarge its regional footprint by purchasing Dao Heng Bank in Hong Kong. At around the same time, United Overseas Bank (UOB) merged with Overseas Union Bank (OUB), while OCBC Bank purchased Keppel TatLee Bank and bought out most of the minority shareholders in its life insurer arm, Great Eastern. This enabled them to successfully withstand the seismic shock waves, produced by the worst global credit crunch since the Great Depression which killed off some of their much bigger international rivals.

**(b) Scope for mutual support E.g. Strategic alliances to tide over difficult times.**

Oligopoly firms can choose in difficult times to co-operate instead of compete. One form of co-operation may take the form of cost-sharing or strategic alliances. For instance, it has been done successfully in the airline industry (sharing aeroplanes) and shipping industry (sharing container vessels).

Hence, it can be said in a recession firms in monopolistic competition markets are more vulnerable than firms in oligopoly markets.

**Conclusion**

In a recession both the product as well as the market structure are the key factors that can explain how firms are affected differently. Whilst a recession may hit businesses generally, nevertheless, theory suggests that the impact is not the same for all firms. Indeed, some might even profit in bad times if they sell inferior goods and others might find it easier to survive because they are able to forge business alliances such as oligopoly firms.

**TYS 2011 Q4**

- (a) Explain the process whereby an increase in government expenditure can lead to a bigger change in national income. [10]  
 (b) Discuss the extent to which conflicts in government macroeconomic objectives limit the scope for the use of fiscal policy in any economy. [15]

**Part (a)**

<b>C – Command word</b>	Explain
<b>C – Concept (s)</b>	Multiplier process
<b>C – Context</b>	Theoretical

**Schematic Plan**

<b>Introduction</b> Define multiplier	
<b>Body</b> Explain the multiplier process using a <b>simple numerical example and AE-Y diagram</b>	
<b>Conclusion</b>	

**Part (b)**

<b>C – Command word</b>	Discuss
<b>C – Concept (s)</b>	Fiscal policy and its limitations
<b>C – Context</b>	Theoretical

**Schematic Plan**

<b>Introduction</b>	
<b>Body</b> <b>Scope for using Fiscal policy to achieve macro-goals</b> <ul style="list-style-type: none"> <li>Explain the scope for using fiscal policy to achieve macro-objectives.</li> <li>Expansionary FP to achieve actual growth (assumption is spare capacity)</li> <li>Contractionary FP to reduce demand-pull inflation</li> </ul> State in reality there are limits to the scope of using fiscal policy due to conflicts in macro goals and other factors such as size of multiplier, nature of economy, crowding-out effect and time-lag.	
<b>Thesis: Conflicts in government macroeconomic objectives limit the scope for the use of fiscal policy in</b>	<b>Anti-Thesis: Other factors limit the scope for the use of fiscal policy in any economy</b>

<b>any economy</b>	
<b>Growth vs Internal Price Stability</b> Actual growth vs demand-pull inflation Illustrate with AD/AS diagram	Size of k Trade driven or externally driven economy Crowding out effects Time lag <b>Evaluation:</b> There is a need to sue other policies to achieve macroeconomic goals silmultaneously.
<b>Growth vs External balance</b> Actual growth v BOT deficits	
<b>Conclusion</b> Whilst fiscal policy is a commonly used tool for achieving the macro-goals of economic growth, full employment and price stability, its effectiveness and usefulness cannot be said to be the same for ALL economies. Besides the issue of managing trade-offs or conflicts in government objectives, there is a much more fundamental distinction in terms of its effectiveness as a policy tool. That is, it depends on the nature of the economy. In general it is much more useful for economies that are dependent on domestic demand for growth rather than external demand. It is certainly less useful for economies that are dependent on external demand for growth. At best for such countries fiscal policy can be used as a complement to other more appropriate policies such as exchange rate and supply-side policies.	

## Detailed Answers

### Question 4(a)

<b>Introduction</b>
National income is the value of goods and services produced in a country in any given year. An increase in government expenditure, will affect the level of income in the country, as aggregate expenditure in the economy rises. This can be explained through the multiplier process which will be elaborated below. The multiplier is the number of times income and output expands as a result of an initial change in autonomous expenditure into the circular flow of income, assuming there is spare capacity.
<b>Body</b>
<b>Explain briefly the direct impact of an increase in government expenditure</b> <ul style="list-style-type: none"> <li>As <b>government spending is a component of aggregate expenditure (AE)</b>, this increases the level of AE and leads to an unplanned decrease in stocks. As firms increase production to increase their stock levels back to desired levels, they hire more workers (as well as other factors of production), employment and hence national income increases.</li> <li>Through the multiplier effect, the higher income induces an increase in aggregate consumption. At the same time, part of the income is leaked out of the circular flow of income in the form of savings, taxes and import expenditure.</li> <li>The induced consumption spending leads firms to hire more workers again to meet the rising demand for goods and services and national income rise a second round. This second round increase in national income induces another round of consumption, leading to a third round increase in national income. With each successive round of increase in income, the amount of leakages, in terms of savings, taxes and import expenditure, also rises.</li> <li>This process will continue until the leakages have risen by the same amount as the initial increase in government expenditure, by which time, national income would have increased by a multiple and employment would also have risen significantly.</li> </ul>
<b>Illustrate the Multiplier using a numerical example:</b> For example if the MPC = 0.6 or MPW = 0.4, this means that 60% of any change in income received will be spent on domestic output. Thus, if autonomous G initially rises by \$100m and AE rises by \$100m, the effect on national income will be: $\Delta Y = \$100m + \$60m + \$36m + \$21.6m + \dots = \$250m$ , i.e. national income will eventually rise by \$250m., which implies that the multiplier has a value of 2.5. The economy is therefore stimulated since the real national income has increased.
If there is real GDP growth, employment will also increase.
<p>Figure 1: Expansionary Fiscal Policy to Solve Unemployment (AE-Y Model)</p> <p style="text-align: center;"><math>\Delta NI = \Delta AE * k</math></p>

Referring to Figure 1a, there is a deflationary gap of 'a' and the national income is  $Y_0$  which falls short of the full employment level of  $Y_{FE}$ .  $Y_0 Y_{FE}$  is an output gap which means not all resources are being employed to produce goods and services and it signifies unemployment. An expansionary policy will cause an increase of AE from  $AE_0$  to  $AE_1$  will cause national income to increase by a multiplier from  $Y_0$  to  $Y_1$  getting closer to the  $Y_{FE}$ .

### Conclusion

The multiplier process helps to explain why an initial increase in government expenditure can lead to a bigger change in national income. The final change in income, can be calculated by  $\Delta Y = k(\Delta G)$ . The larger the mpw, the smaller the size of multiplier  $k$ ,  $k=1/(mpw)$ , and the smaller is the increase in income given an initial increase in aggregate demand.

### Question 4(b)

#### Introduction

Fiscal policy is a standard policy tool used by governments to achieve the macro-economic objectives in many countries. For example, today countries like USA, China and Japan have implemented mega fiscal stimulus to achieve economic growth. Fiscal policy works through controlling government spending and taxes in order to change aggregate demand. However, its use is subject to limitations. This essay seeks to discuss the extent to which conflicts in government macroeconomic objectives limit the scope for the use of fiscal policy in any economy.

#### Body

##### Scope for using fiscal policy to achieve macro-goals

The key macro-objectives can be stated broadly as follows:

Sustained economic growth or to grow the economy at the rate consistent with its potential output i.e. actual = potential output. If this is achieved the economy will benefit from full employment, rising income and price stability or low inflation.

External balance – if this is achieved the economy will benefit from balance of payment equilibrium and hence will have no worries over international finance and currency stability.

With reference to figure 1:

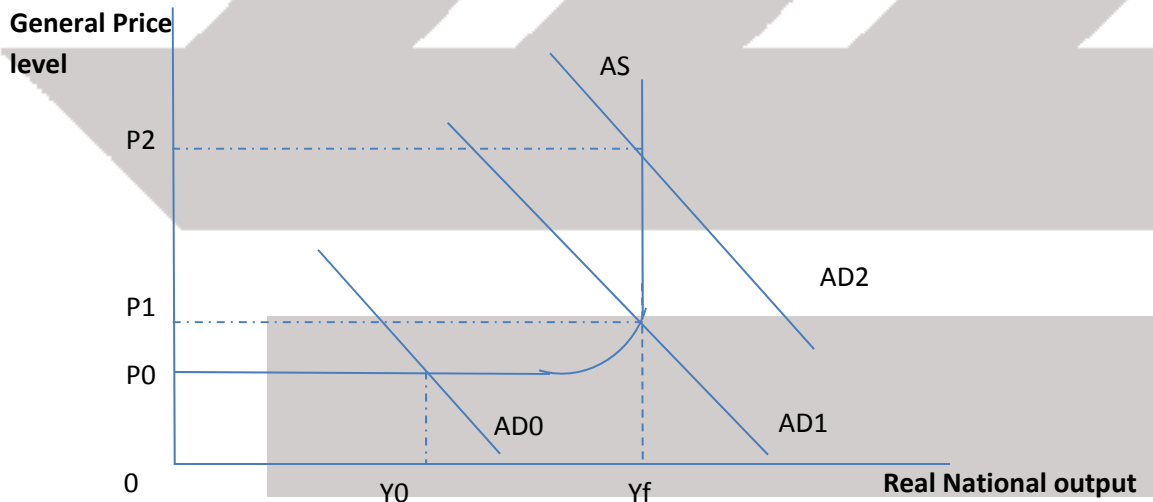


Figure1: A hypothetical Economy

If for some reason the economy is currently growing below its potential e.g. producing at output level  $Y_1$  – it will experience slow growth and perhaps high unemployment. To correct this problem and bring the economy to full employment, the government can use fiscal policy to stimulate growth. The way fiscal policy works to stimulate growth has been explained and elaborated in part (a) of the essay. Briefly, an increase in government spending and/or cut in taxes would increase AD. This will result in a decrease in stocks of unplanned inventory and producers will increase output to meet the higher AD and thus real output will increase via a K effect. Firms will also start to hire more factors of production including labour and thus solving cyclical unemployment.

As a result of the stimulus, AD shifts rightwards to AD1, so that the economy is able to achieve full employment equilibrium at output  $Y_f$ .

On the other hand, if the economy is growing too rapidly the problem is that it will cause overheating i.e. high demand-pull inflation. For example, with reference to Figure 1, if AD rises so fast as indicated by a shift from AD1 to AD2, economy will experience high inflation as shown by P1 rising to P2. In this instance, the government can use a contractionary fiscal policy by

curbing government spending and raising taxes to “cool down” the economy or slowdown nominal economic growth

### **Thesis: Conflicts in government macroeconomic objectives limit the scope for the use of fiscal policy in any economy**

However, in reality there are limits to the scope of using fiscal policy for the following reasons:

**Conflicting macro-goals, size of multiplier, crowding and time lags.**

#### **Conflict of macro-goals**

With reference to figure 1:

##### **Growth vs Internal Price Stability**

- In the pursuit of economic growth, the government might use fiscal stimulus to boost AD or spending in times of recession. As a result, AD shifts from AD1 to AD2 in figure 1 causing GPL to rise from P0 to P2 and the economy to overheat instead.
- On the other hand, a desire to curb inflationary pressures might lead the government to reverse its policy by cutting government spending and raising taxes. However, such a tightening of fiscal policy might cause the economy to contract and experience a “hard-landing” and high unemployment.

##### **Evaluative comment:**

However, if the government limits the use of expansionary fiscal policy to during recession to pump prime the economy out of recession as suggested by Keynes, there is little scope for conflict between growth and price stability.

Also, if the fiscal policy has a supply-side slant then it allows for growth in productive capacity limiting inflation in the long run.

##### **Growth vs External balance**

Another example of a conflict of goals involves using fiscal policy to stimulate growth at the expense of external trade balance. The resulting increase in their incomes from a fiscal stimulus increases their purchasing power to import more goods and services from abroad. The increase in M expenditure worsens BOT.

In addition if the use of fiscal stimulus to drive economic growth lead to inflationary pressures at home (as explained previous). This in turn would hurt domestic export competitiveness as the output produced and sold abroad become more expensive to foreigners. Imports are likely to rise because home consumers are also likely to want to switch to buying cheaper imported substitutes, may also limit the scope of using fiscal policy. (Note: **do not** continue the analysis and say that AD and growth falls due to fall in X-M)

Hence from the 2 cases explained above, it can be said that the conflict in macro-goals limits the scope of fiscal policy.

### **Anti-Thesis: Other factors limit the scope for the use of fiscal policy in any economy**

In addition, there are also other factors that could limit the scope of using fiscal policy.

#### **Size of multiplier and leakages**

- The size of multiplier can be a limiting factor. For instance, for small and very open economies e.g. Singapore, the multiplier is extremely weak. Thus, any form of fiscal stimulus will have limited impact on the AD because most of it will leak out in the form of high import expenditure and domestic savings.
- For instance, it has been estimated that Singapore's multiplier is somewhere around 0.54, which implies that every \$1 of government injection will result in less than a \$1 increase in income and output! Given the very weak multiplier, Singapore government limits the use of fiscal stimulus to drive economic growth.

#### **Trade driven or externally driven economy**

- The effectiveness of using fiscal stimulus also depends on the components of expenditure that drives the economy. In Singapore, for example, economic growth is driven primarily by external demand (i.e. X) and not by domestic consumption. In fact, for Singapore the total trade is about 4 times of GDP.
- Thus, if there is collapse of export demand, the use of fiscal policy to stimulate AD is of limited effectiveness.

#### **Crowding out effects**

Fiscal stimulus involves government borrowing to finance the budget deficit. However, government borrowing in the market might push up interest rate. Higher interest rate in turn, dampens consumer and business spending thus “crowding out” or “dampening” the stimulus effect e.g. Increase in government spending by \$100m might cause private consumption and investment to fall by say \$60m because of interest rates hikes. The net impact on AD is much milder than expected or planned.

##### **Evaluative comments:**

This is more applicable for governments heavily in debt. For countries with healthy reserves crowding out effect is of little concern.

#### **Time lag**

- Finally, fiscal policy by its nature is slow-acting. There is a time lag before its effect can be felt.
- This is because time is needed to plan and implement changes in government spending and taxation and also for the multiplier process to work its way through the economy. This poses the problem of bad timing producing de-stabilising instead of stabilising effects on the economy. For example, a fiscal stimulus package introduced in a recession might take



years to work its way through the economy. By the time its effect starts to kick in, the recession could already be over and the stimulus effect will only exacerbate inflationary pressures building up in the economy.

### Conclusion

Whilst fiscal policy is a commonly used tool for achieving the macro-goals of economic growth, full employment and price stability, its effectiveness and usefulness cannot be said to be the same for ALL economies. Besides the issue of managing trade-offs or conflicts in government objectives, there is a much more fundamental distinction in terms of its effectiveness as a policy tool. That is, it depends on the nature of the economy. In general it is much more useful for economies that are dependent on domestic demand for growth rather than external demand. It is certainly less useful for economies that are dependent on external demand for growth. At best for such countries fiscal policy can be used as a complement to other more appropriate policies such as exchange rate and supply side policies.

### TYS 2011 Q5

In the study of macroeconomics, investment can take many forms including foreign direct investment, fixed capital investment and investment in human capital.

- (a) Explain what is meant by these different types of investment. [10]  
 (b) Discuss how far supply-side policies can be used to stimulate these different types of investment. [15]

### Part (a)

<b>C – Command word</b>	Explain: Define the 3 types of investment and highlight their similarities and differences.
<b>C – Concept (s)</b>	Foreign direct investment (FDI), fixed capital investment and investment in human capital.
<b>C – Context</b>	Generic (applicable to any country).

### Schematic Plan

<b>Introduction</b>
Investment may come in different forms viz. fixed capital, human capital and foreign Direct Investment (FDI). Broadly, these various forms of investment refer to CAPITAL as a factor or resource.  The chief characteristic of capital is that it is used in the production of goods and services as a man-made resource to raise productivity but there are key differences amongst these various forms of investment which shall be explained in this essay.
<b>Body (focus on definitions; examples; significance and differences)</b>
<b>Fixed Capital investment</b> Fixed capital investment is durable- use producer goods. Examples : machines, plant, offices, factories; shops; tools and equipment Significance
<b>Human capital investment</b> This refers to investment in the productivity of the workforce or labour force. e.g. Worker education and skill training. Significance
<b>Foreign Direct Investment (FDI)</b> FDI in fixed capital in a foreign country e.g. foreign MNCs. Significance <i>Note: Such form of investment must not be confused with investment in foreign financial assets such as stocks , bonds, currencies or savings deposits.</i>
<b>Conclusion</b>

### Part (b)

<b>C – Command word</b>	Discuss
<b>C – Concept (s)</b>	Supply-side policies, stimulating the demand for the 3 types of investment and the limitations
<b>C – Context</b>	Generic (applicable to any country).

### Schematic Plan

<b>Introduction:</b>
Clarify on the different types of supply side policies and that different types of investment require different types of supply side policies



Body					
Fixed Capital Investment		Human Capital Investment		Foreign Direct Investment	
<b>Thesis 1: Supply side policies can stimulate fixed capital investment</b>	<b>Antithesis 1: There are limitations</b>	<b>Thesis 2: Supply side policies can stimulate human capital investment</b>	<b>Antithesis 2: There are limitations</b>	<b>Thesis 3: Supply side policies can stimulate foreign direct investment</b>	<b>Antithesis 3: There are limitations</b>
<p>Tax incentives and subsidies for acquiring machines, equipment; building factories etc</p> <p>Impact on MEI. <b>Diagram.</b></p> <p>Others: privatisation and de-regulation.</p>	Depends on business expectations and confidence	Fiscal incentives e.g. subsidies to workers to go for training and skills upgrading and employers to train their workers.	Availability of jobs /promotion prospects/3As- Age, attitude and aptitude	<p>Tax incentives and subsidies can also be used to lure or attract FDI inflows</p> <p>Many countries offer special tax concessions e.g. tax exemption to attract foreign MNCs.</p> <p><b>Evaluation:</b> Investment in human capital and fixed capital investment could themselves attract further investment in the form of FDI</p>	<p>Long term prospects for making profits e.g. political stability</p> <p>Quality of life and cost of living; regulatory environment e.g. government policies on manpower</p>
<b>Impact on SSP to increase these three types of investment: AD-AS increase in tandem, achieving non-inflationary growth.</b>					
<p><b>Conclusion</b></p> <p>In contrast to Keynesian policies, supply-side policies use fiscal incentives such as taxes and subsidies to boost productive capacity through more investment in the form of fixed capital, human capital and FDI. However, the pre-requisite for such investment to take off is that there must be adequate AD or spending in the economy. Without adequate demand for goods and services in the economy, investing in fixed and human capital is futile because returns will not be attractive enough to justify the investment. For instance, no business will want to build factories and acquire machines to turn out goods if there are no buyers. Similarly, no worker will want to go for training if there are no jobs. Thus, supply-side policies must always be used in conjunction with demand side policies to ensure a constant healthy stream of investments be it in human or fixed capital.</p>					

## Detailed Answers

### Question 5(a)

<b>Introduction</b>
Investment may come in different forms viz. fixed capital, human capital and foreign Direct Investment (FDI). Broadly, these various forms of investment refer to capital as a factor or resource.
The chief characteristic of capital is that it is used in the production of goods and services as a man-made resource to raise productivity but there are key differences amongst these various forms of investment which shall be explained in this essay.
<b>Body (focus on definitions; examples; significance and differences)</b>
<p><b>Fixed Capital investment</b></p> <p>Fixed capital investment is durable-use producer goods.</p> <p>Examples : machines, plant, offices, factories; shops; tools and equipment</p> <p><b>Significance:</b> Significance It is a fixed form of capital in the sense that it can be used over and over again to help produce goods and services. Its form never changes as it is used in the production process e.g. a power- drill remains a drill no matter how much times it is used to drill holes etc.</p>

### Human capital investment

This refers to investment in the productivity of the workforce or labour force.  
e.g. Worker education and skill training.

**Significance:** Such capital investments enhance the workers' productivity and hence their earning power. A better trained and skilful worker commands a higher pay because of the human capital invested in education and training.

They are useful in the production of many types of goods and services because they can help speed up the production process and improve the quality the goods produced. In other words such goods enhance productivity when used in the production of goods and services.

### Foreign Direct Investment (FDI)

FDI in fixed capital in a foreign country e.g. foreign MNCs.

**Significance:** FDI are useful as they create jobs and employment for the host or recipient country. They are sought after by many emerging or developing countries as drivers of economic growth.

*Note: Such form of investment must not be confused with investment in foreign financial assets such as stocks , bonds, currencies or savings deposits.*

### Conclusion

### Question 5(b)

#### Introduction

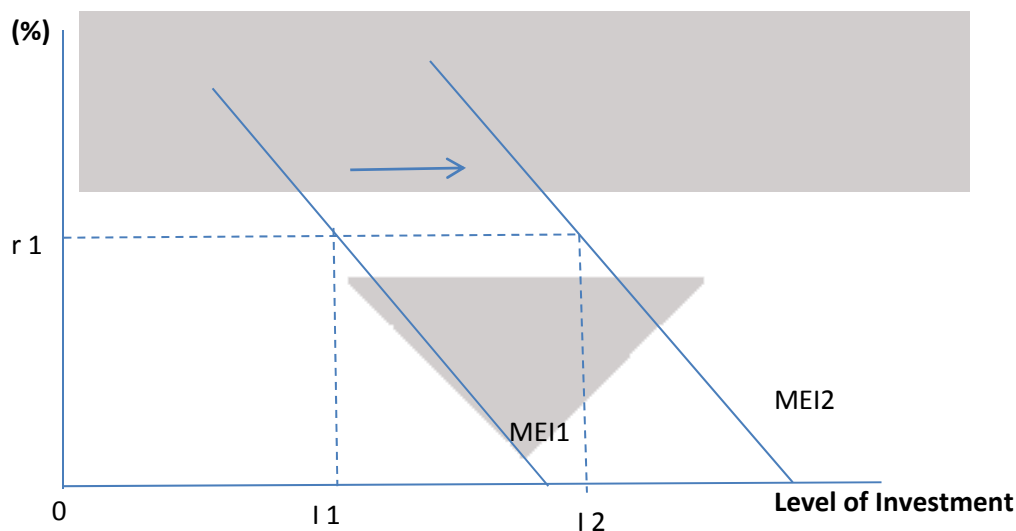
Supply-side policies refer to a broad range of policies that are used to stimulate the supply side of the economy. Broadly these measures are aimed at shifting the AS curve of the economy. This essay aims to discuss how these policies are used to stimulate the different types of investment.

#### Supply-side policies and Fixed Investment + Limitations

Supply side tools to stimulate more fixed capital investment such as acquiring more tools and machines for production, usually takes the form of tax incentives and subsidies.

A common supply side policy tool to encourage more investment is to offer incentives to businesses to buy more machines and tools through tax incentives and subsidies. For instance, the government can lower corporate taxes to spur more investments. Corporate taxes are taxes paid out of the firm's profits. So, by reducing corporate tax, it will raise the **MEI (m)** or expected profitability from a prospective investment. This is best explained by using the diagram below:

Figure 1: The investment demand schedule



Every prospective investment can be ranked according to its expected yield or profitability and compared to the current rate of interest. If the yield is  $>$  rate of interest, the investment is deemed profitable. Conversely, if the yield is  $<$  rate of interest it should not be undertaken. It stands to reason that the best or equilibrium or best level of investment is exactly where  $m = r$ . Thus, in

Figure 1, if the interest rate is  $r_1$ , the best level of investment is  $I_1$ .

However, if the government cuts the current corporate rate, ceteris paribus, the MEI curve will shift to the right. This is because at a lower corporate tax rate, more marginal investment will become profitable at all level of interest rates. Thus, the new equilibrium level of  $I$  is now  $I_2$ .

#### **Privatisation and De-regulation**

Besides cutting corporate taxes to encourage more investment in fixed capital, other forms of supply-side policies such as privatisation and de-regulation can also be introduced to spur competition in the market and to encourage more private investments e.g. more airlines; more banks; telcos and taxi-operators.

#### **Anti-thesis: Limitations**

However, the supply-side policies might not work as businesses have no confidence to spend because of recession or bleak economic outlook. This is because investment is very much influenced by expectations of future returns. This in turn is dependent on fundamentals as well as sentiments. If the sentiment is weak or what Keynes described as "low animal spirits", tax incentives alone might not be sufficient to boost business confidence to spend.

#### **Supply-side policies and Human Capital Investment + Limitations**

- The key to investment in human capital is to offer incentives to workers to go for training and skills upgrading and employers to train their workers.
- Thus, Supply-side policies in the form of tax reliefs for expenses incurred in worker training or direct subsidies are commonly used.
- E.g. The Singapore government subsidises the wages of workers whilst they go for training in periods of lull. In this way employers can still retain workers even though they are not needed e.g. Job Credit Scheme rolled out during the Financial Crisis (2009).

#### **Anti-thesis: Limitations**

- However, whether these incentives will attract workers to go for training will depend on the expected benefits or reward awaiting them on completion of their training e.g. employment and promotion prospects and better pay. Employment/promotion prospects and pay rise must be attractive to encourage workers to go for training. Moreover, if the state of the economy is bad and there are no employment/jobs due to recession, it is difficult to get workers to go for training voluntarily.
- Also, it is important to ensure that there are sufficient jobs in the economy for trained manpower. For example, in the Philippines many graduates are unemployed because of the lack of job opportunities.
- Another limiting factor is the age of the workforce. In general, the older the workforce the harder it is to entice them to go for further training or skills upgrading.

#### **Supply-side policies and Foreign Direct Investment (FDI) + Limitations**

Tax incentives and subsidies can also be used to lure or attract FDI inflows

Many countries offer special tax concessions e.g. tax exemption to attract foreign MNCs.

Tax incentives (tax havens) to lure/attract FDI and other pro-business policies (e.g. manpower; relax regulations ).

#### **Evaluation:**

Investment in human capital and fixed capital investment could themselves attract further investment in the form of FDI

#### **Anti-thesis: Limitations**

However, FDI are investors who are in search of better returns overseas for their investment. Thus, a key factor is the long term business prospects which the host country can offer. Tax incentives are only one of the many other factors that will determine their decision to invest. Other factors include the political stability; quality of life and cost of living; government policies (e.g. manpower, regulations) and long term growth prospects i.e. rapid economic growth in emerging economies attracted inflow of many FDIs to countries like China and India in recent years.

**All the supply side policies that are used to increase these three types of investment will ultimately cause AD-AS increase in tandem, achieving non-inflationary growth.**

#### **Conclusion**

In contrast to Keynesian policies, supply-side policies use fiscal incentives such as taxes and subsidies to boost productive capacity through more investment in the form of fixed capital, human capital and FDI. However, the pre-requisite for such investment to take off is that there must be adequate AD or spending in the economy. Without adequate demand for goods and services in the economy, investing in fixed and human capital is futile because returns will be not be attractive enough to justify the investment. For instance, no business will want to build factories and acquire machines to turn out goods if there are no buyers. Similarly, no worker will want to go for training if there are no jobs. Thus, supply-side policies must always be used in conjunction with demand side policies to ensure a constant healthy stream of investments be it in human or fixed capital.

### TYS 2011 Q6

'The Singapore economy is open to the world, in trade and investment. This is both a matter of policy and necessity because of our size and limited resources. In 2008, our trade to GDP ratio was 360%, the highest in the world.' (Ministry of Trade and Industry, Singapore, 2009)

Discuss whether the openness of the economy is beneficial or harmful to the standard of living in Singapore. [25]

#### Key Question requirement:

- What is the link between openness and standard of living (material & non-material aspect)
- To what extent does the free flow of goods & services via international trade, capital flow and human capital brings about higher real income per capita to the average Singaporean?

<b>C – Command word</b>	Discuss
<b>C – Concept (s)</b>	Comparative advantage and Standard of living
<b>C – Context</b>	Singapore

#### Schematic Plan

<b>Introduction</b> Define standard of living. Singapore is a small and open economy and one of the highest standard of living in the world and highly dependent on trade for economic growth. This essay aims to discuss whether the openness of the economy is beneficial or harmful to the standard of living in Singapore.
<b>Body</b> <b>Use theory of CA to explain the Gains from Trade – use numerical eg.</b> <i>(Refer to Notes Chapter 21: Benefits of Free Trade - Higher standard of living)</i> <b>Link to SOL (CA Theory):</b> Higher consumption level and higher welfare.
<b>Investment (AD-AS framework)</b> Singapore's openness to the inflow of FDI and funds is also beneficial + X Use AD/AS analysis to explain impact on real NI and thus living standards
<b>Harmful effects of Open Economy Link to SOL</b> <ul style="list-style-type: none"><li>• Vulnerability to external shocks or contagion effect: Impact of recession (cyclical unemployment) and imported inflation on standard of living.</li><li>• Loss of comparative advantage due to emergence of new rivals in the global market for exports.</li><li>• Outsourcing and offshoring leading to job losses (structural unemployment) and impact on standard of living.</li><li>• Growing income disparities: Impact on income distribution and standard of living.</li></ul> <b>Evaluative comments:</b> Mitigation by government policies
<b>Conclusion</b> Without doubt, the openness of the Singapore to trade and investment has been beneficial to living standards. Statistically, the data shows that Singaporeans enjoy one of the world's highest SOL measured in terms of real GDP per capita (US\$, PPP). It can be said that our openness to trade and investment has served us well for two key reasons:  Being a small economy with no natural resources, trade and investment is a necessity to overcome these natural constraints on growth and hence living standards.  Secondly, the success of trade and investment in lifting standard of living is due in no small measure to the sound economic policies pursued by the government such as heavy investment in building excellent infrastructure like roads, airports seaports, education and health care to economic growth to support the enhancement of our material standard of living and the quality of life.

## Detailed Answers

### Question 6

#### Introduction

Define standard of living.

Singapore is a small and open economy and one of the highest standard of living in the world and highly dependent on trade for economic growth.

This essay aims to discuss whether the openness of the economy is beneficial or harmful to the standard of living in Singapore.

#### Body

**Use theory of CA to explain the Gains from Trade – use numerical eg.**

*(Refer to Notes Chapter 21: Benefits of Free Trade - Higher standard of living)*

**Link to SOL:** Higher consumption level and higher welfare.

- With open trade, countries need not be self-sufficient.
- They can afford to specialize in exporting goods in which they have comparative advantage in that is, they are able to produce at lower opportunity costs, and import or exchange for goods in which they do not have a Comparative Advantage.
- The ability to produce at a lower opportunity costs is due to efficiency gains from devoting resources to produce what they are best suited for.
- For example, given the differences in resource endowment countries like Singapore stand to gain by specialising in high value add manufactures e.g. aircraft engines whilst countries like China stand to gain by specialising in cheap low-end manufactures e.g. socks and shoes.
- Trade between the 2 countries will lead to higher level of welfare or living standards because it is possible to **consume beyond a country's production possibility**. Thus, the benefits of free trade based on the principle of comparative advantage are the key economic reason why many countries today embrace globalization.

#### Investment (AD-AS framework)

Singapore's openness to the inflow of FDI and funds is also beneficial; both a rise in NX and FDI will lead to increase in AD and thus NI by a multiplier effect.

Use AD/AS analysis to explain impact on real NI and thus living standards

#### Harmful effects of Open Economy Link to SOL

- Vulnerability to external shocks or contagion effect: Impact of recession (cyclical unemployment) and imported inflation on standard of living.
- Loss of comparative advantage due to emergence of new rivals in the global market for exports.
- Outsourcing and offshoring leading to job losses (structural unemployment) and impact on standard of living.
- Growing income disparities: Impact on income distribution and standard of living.

**Evaluative comments:** Mitigation by government policies

#### Conclusion

Without doubt, the openness of the Singapore to trade and investment has been beneficial to living standards.

Statistically, the data shows that Singaporeans enjoy one of the world's highest SOL measured in terms of real GDP per capita (US\$, PPP). It can be said that our openness to trade and investment has served us well for two key reasons:

Being a small economy with no natural resources, trade and investment is a necessity to overcome these natural constraints on growth and hence living standards.

Secondly, the success of trade and investment in lifting standard of living is due in no small measure to the sound economic policies pursued by the government such as heavy investment in building excellent infrastructure like roads, airports seaports, education and health care to economic growth to support the enhancement of our material standard of living and the quality of life.

**Note that this question is not the usual SOL type of question.**



## 2012 Question 1

(a)	(i)	<b>Why might the changes shown in Table 1 have led to an increase in the world price of cotton?</b>	<b>[1]</b>
		<p>Increase in demand (world consumption) and decrease in supply (world production), resulted in a shortage and thus pushing up world price of cotton.</p> <p><i>Note the word 'changes' in the question. Students have to use 'increase/decrease' to signal that they are referring to the changes in demand and supply.</i></p>	
	(ii)	<b>Given the information contained in Table 1, identify the country that has had the greatest impact on world prices. Justify your answer.</b>	<b>[3]</b>
		<p>China (1m)</p> <ul style="list-style-type: none"> <li>- <b>Largest world producer</b> (&gt;30% of world production) that cut production by the <b>largest percentage</b> (12.8%) (1m)</li> <li>- <b>Largest world consumer</b> (&gt;40% of world consumption) that increased demand by the <b>largest percentage</b> (10.2%) (1m)</li> </ul> <p><i>Note: China has the greatest impact in terms of both being the largest producer and consumer of cotton <b>AND</b> also the greatest change in the production and consumption.</i></p> <p><i>You may calculate the change in production and consumption of China as a proportion to the total.</i></p>	
(b)		<b>What can you conclude from the evidence in Extract 1 about the price elasticity of supply of cotton in Brazil?</b>	<b>[2]</b>
		<p>PES measures the degree of responsiveness of quantity supplied of a good to a change in its own price, ceteris paribus.</p> <p>In Brazil, despite prices of cotton rising by 73% in 2010, the intended increase in quantity supplied is less than proportionate, at only 32.5% <math>[(1100000 - 830000) / 830000 \times 100\%]</math> and this increase will only happen in 2011, indicating a relatively longer production period. These evidences show that supply is price inelastic.</p> <p><i>Note: The use of the statistics in Extract 1 is necessary to get full mark. Students should not use the drought as an evidence as it reduced the entire supply and not just the responsiveness.</i></p>	
(c)		<b>Explain the likely reason why the Brazilian government eliminated the 10% tariff on cotton imports and the Indian government restricted cotton exports.</b>	<b>[3]</b>
		<p><b><u>Suggested Answer</u></b></p> <ul style="list-style-type: none"> <li>• Due to the drought in Brazil that led to a fall in supply of cotton, prices of</li> </ul>	



		<p>cotton were pushed up due to a shortage at the initial equilibrium price. Hence by eliminating the 10% tariff on cotton imports, supply of cotton into Brazil will increase.</p> <ul style="list-style-type: none"><li>• The restriction on cotton exports by India would allow more to be available in the domestic market, also increasing supply.</li><li>• These 2 moves would lower the price of cotton in the 2 countries, benefiting the domestic consumers (by increasing consumer surplus) and reducing costs for textile manufacturers (leading to increased profits), hence leading to <b>higher consumer welfare</b>.</li></ul>					
(d)		<p><b>In Extract 2 the chief executive of Next considers the effect of an 8% rise in the price of Next's clothes. With reference to the concept of price elasticity of demand, explain the expected impact of this price rise on the firm's total revenue.</b></p>	<b>[3]</b>				
		<p><b><u>Suggested Answer</u></b></p> <p>Due to the availability of many substitutes of many clothing retailers (Ext 2 &amp; 3), the demand for Next's clothes is likely to be price elastic. This would mean that with an 8% increase in the price, the quantity demanded of clothes would fall by more than 8% (predicted to be 10%). This would lead to a fall in TR.</p>					
(e)		<p><b>With reference to the data where appropriate, discuss the view that supply factors are likely to be more important than demand factors in explaining changes in the price of cotton.</b></p>	<b>[8]</b>				
		<p><b><u>Suggested Answer</u></b></p> <table border="1"><tr><td colspan="2"><p><b>Introduction</b></p><p>Changes in price of a good can be due to demand and/or supply factors. In this case where the price of cotton has increased significantly, it is likely that there are simultaneously increase in demand and decrease in supply.</p><p><i>Note: Explain the demand &amp; supply factors</i></p></td></tr><tr><td><p><b>Demand factors</b></p><p><b>Increase in demand for cotton is due to an increase in demand and supply for clothes</b></p><ul style="list-style-type: none"><li>• <b>Increase in income this could be due to the recovery of the global economy from the economic downturn</b> – clothes are normal goods – <math>YED &gt; 0</math></li><li>• <b>Increase in supply for clothes retailers has led to increase in Qd for clothes</b></li></ul></td><td><p><b>Supply factors</b></p><p><b>1. Weather conditions cause world supply of cotton to fall</b></p><ul style="list-style-type: none"><li>• Drought in Brazil, world's fifth-largest exporter (extract 1)</li><li>• Floods in China, world's largest producer, &amp; Pakistan, one of the major producer (extract 2)</li></ul><p><b>2. Increase in crops in competitive supply cause world supply of cotton to fall</b></p><ul style="list-style-type: none"><li>• Decision of the farmers to plant higher-value crops such as corn</li></ul></td></tr></table>	<p><b>Introduction</b></p> <p>Changes in price of a good can be due to demand and/or supply factors. In this case where the price of cotton has increased significantly, it is likely that there are simultaneously increase in demand and decrease in supply.</p> <p><i>Note: Explain the demand &amp; supply factors</i></p>		<p><b>Demand factors</b></p> <p><b>Increase in demand for cotton is due to an increase in demand and supply for clothes</b></p> <ul style="list-style-type: none"><li>• <b>Increase in income this could be due to the recovery of the global economy from the economic downturn</b> – clothes are normal goods – <math>YED &gt; 0</math></li><li>• <b>Increase in supply for clothes retailers has led to increase in Qd for clothes</b></li></ul>	<p><b>Supply factors</b></p> <p><b>1. Weather conditions cause world supply of cotton to fall</b></p> <ul style="list-style-type: none"><li>• Drought in Brazil, world's fifth-largest exporter (extract 1)</li><li>• Floods in China, world's largest producer, &amp; Pakistan, one of the major producer (extract 2)</li></ul> <p><b>2. Increase in crops in competitive supply cause world supply of cotton to fall</b></p> <ul style="list-style-type: none"><li>• Decision of the farmers to plant higher-value crops such as corn</li></ul>	
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	<ul style="list-style-type: none"> <li>There has been an increase in the number of retail shops, including Tesco opening a specialist clothing store in London (extract 3) + Increase in number of clothing stores (Primark) able to sell branded lookalikes at low prices (extract 2)</li> </ul> <p>As the cotton is the raw material in the production of textile and hence clothing, with the increase in Qd and demand for clothing, the demand for cotton will also increase as the demand for cotton is derived from the demand for clothing.</p> <p>Hence we can determine that the world <b>demand for cotton has increased significantly</b>, leading to an increase in price.</p> <p>As analysed earlier, <math>PES &lt; 1</math>, hence when demand increases, <b>price of cotton will increase more than proportionate</b>.</p>	<p>and soya instead of low-value crops like cotton during the financial crisis reduced the land/resources available to plant cotton (extract 2)</p> <p><b>3. Limiting of cotton exports cause world supply of cotton to fall</b></p> <ul style="list-style-type: none"> <li>Countries like India, world's second largest producer, were limiting the amount of cotton exports to alleviate the high domestic prices of cotton</li> </ul> <p>From the above, we can determine that the <b>world supply of cotton has fallen significantly, leading to an increase in price</b>.</p> <p>Given that <math> PED  &lt; 1</math> due to lack of close substitutes, when supply falls, price of cotton will increase more than proportionate.</p>		
	<p>Conclusion:</p> <p>It would seem that the price inelasticities of demand and supply, and the increase in demand and fall in supply, all contributed to the sharp and significantly increase in the price of cotton.</p> <p>However, based on Table 1, we see that the world production (supply) fell less than the increase in world consumption (demand), it may seem that demand factors had a bigger role to play in explaining the increase in cotton price.</p> <p>Given that demand went up by 6.6% but prices actually rose by 73%, price inelasticities of supply have a more significant contribution to the price increase of cotton.</p>			
(f)	<p><b>Using the evidence in the data, discuss how the market structure of the retail clothing industry in the UK will affect the ability of firms in this industry to make excess profits in the long run when faced with an increase in the price of cotton.</b></p>			[10]
	<p><u><b>Introduction</b></u></p> <p>State the type of market structure the retail clothing industry operates in and the type of profits it is likely to make in the LR; excess profits (in the question) likely to refer to supernormal profits</p>			

		<p><b>Body</b></p> <p><b>1. Justify the type of market structure: monopolistic competitive market structure</b></p> <ul style="list-style-type: none"> <li>• many firms each holding a small market share and selling differentiated products (Extract 2 &amp; 3)</li> <li>• retailers have the power to set price (Extract 2 – able to pass on higher COP to consumers)</li> <li>• low BTE (Extract 3 – entry of competitors in UK)</li> </ul> <p><b>2. Explain the type of profits a typical firm in the industry is likely to make in the SR - could earn any of the 3 types of profits, but likely to be supernormal</b></p> <p><b>3. Adjustment to LR equilibrium earning normal profits:</b></p> <ul style="list-style-type: none"> <li>• If existing firms are earning supernormal profits, others will be attracted to the industry and causing the AR/MR of existing firms to fall till they earn only normal profits.</li> <li>• Faced with an increase in variable cost, the AC/MC increase, causing the firm to make less (supernormal) profits or even loss. If <math>AR &gt; AVC</math>, such firms will resort to non-price competition (elaborate) to increase AR/MR. However, some firms that have <math>AR &lt; AVC</math> will exit the market. This leads to the AR/MR of the other firms increase till they earn normal profits.</li> </ul> <p><b>4. Show in the LR the type of profits likely to be made by the retail firm</b></p> <ul style="list-style-type: none"> <li>• likely to make normal profits due to the existence of low barriers to entry &amp; exit</li> <li>• exit of firms in the LR (Extract 3 – Asda) as it 'could not make sufficient profit'</li> <li>• Illustrate with a LR-equilibrium earning normal profits</li> </ul> <p><b>Conclusion</b></p> <p>Firms in the retail clothing industry unlikely to make excess profits in the LR, with the increase in price of cotton.</p> <p>However, as we can see that there are some relatively bigger clothing retailers in the market, so it may be regarded as oligopolistic as there is the presence of more dominant players with brand name. These bigger players may then earn supernormal profits in the long-run. Nonetheless, the barriers to entry are not very high and in fact it is rather contestable, so the supernormal profits will not be substantial even for these bigger players.</p>	
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[Total: 30]

2012 CS Question 2:

(a)	(i)	Compare the change in China's balance of trade in goods with that of Japan between 2005 and 2009.	[2]																																																								
		<table><tr><td></td><td></td><td>2005</td><td>2006</td><td>2007</td><td>2008</td><td>2009</td></tr><tr><td>China</td><td>Exports</td><td>761953</td><td>968978</td><td>1220456</td><td>1430693</td><td>1201534</td></tr><tr><td></td><td>Imports</td><td>659953</td><td>791461</td><td>956116</td><td>1132567</td><td>1005688</td></tr><tr><td></td><td>Net Exports</td><td>102000</td><td>177517</td><td>264340</td><td>298126</td><td>195846</td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>Japan</td><td>Exports</td><td>594941</td><td>646725</td><td>714327</td><td>782047</td><td>580719</td></tr><tr><td></td><td>Imports</td><td>515866</td><td>579064</td><td>622243</td><td>762534</td><td>551960</td></tr><tr><td></td><td>Net Exports</td><td>79075</td><td>67661</td><td>92084</td><td>19513</td><td>28759</td></tr></table> <p><b>Suggested answer</b> Similarity: Both China &amp; Japan BOT were consistently in surplus Difference: China's surplus balance of trade was increasing while Japan's was decreasing</p> <p><i>Note:</i></p> <ul style="list-style-type: none"><li>China's BOT surplus is larger than Japan's is not accepted as the question specified "Compare the change ..."</li><li>Refrain from using improving and worsening to describe the change as they are not synonymous to increasing and decreasing. The latter are to describe the change while the former on impact. Besides, an increase in BOT surplus does not necessarily mean an improvement if BOP is always in surplus and in disequilibrium.</li><li>Students cannot write BOT improves solely as it may mean BOT changed from deficit to surplus or BOT surplus increasing. The answer on "position" is an extra step for this question, not necessary to answer the question.</li></ul>			2005	2006	2007	2008	2009	China	Exports	761953	968978	1220456	1430693	1201534		Imports	659953	791461	956116	1132567	1005688		Net Exports	102000	177517	264340	298126	195846								Japan	Exports	594941	646725	714327	782047	580719		Imports	515866	579064	622243	762534	551960		Net Exports	79075	67661	92084	19513	28759	
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	(ii)	How might this comparison explain the differences in growth rates between the countries shown in Table 2?	[2]																																																								
		<p><b>Suggested answer</b> Identify and state the difference: China experience positive growth while Japan experienced negative growth in recent years.</p> <p>With an increasing BOT (=X-M) a component in AE/AD, AE/AD would increase leading to unplanned fall in inventories and firms will react by</p>																																																									

		increasing output to make up the shortfall. Hence China's output increases and economic growth is positive. The opposite would be the situation for Japan. A falling (X-M) meant a falling AD and hence a fall in NI and negative economic growth.	
(b)		<b>Explain how 'the long-term need to tackle rising inflation' in China might cause 'a slowdown in demand from China' for the rest of the world's economies.</b>	[3]
		<p>Extract 4: Interest rates were raised - 'the long-term need to tackle rising inflation'</p> <p><b><u>Suggested answer</u></b></p> <p>To tackle rising inflation, China has increased interest rates domestically. An increase in interest rates would increase the cost of borrowing, making consumer durables more expensive to purchase and the opportunity cost of consumption increases, as such domestic consumption expenditure falls.</p> <p>The increase in interest rates would also cause the expected rate of return on investment to fall below the cost of borrowing, leading to a movement along the MEI and investment to fall.</p> <p>With a fall in C &amp; I, AD would fall and via the multiplier, the national income in China would decrease together with a fall in demand-pull inflation.</p> <p>With less purchasing power, the demand for imports will also decrease. Thus for the rest of the world, they will experience a fall in the demand from China for their goods and services.</p>	
(c)		<b>Explain how the world economy might become less unbalanced through an appreciation of the yuan.</b>	[2]
		<p><b><u>Suggested answer</u></b></p> <p>An appreciation of the Yuan will lead to Chinese exports being relatively more expensive in foreign currency. Hence <b><u>demand</u></b> for Chinese exports will fall and China's export revenue (<b><u>measured in Yuan</u></b>) will fall.</p> <p>The appreciation of the Yuan will also lead to foreign imports becoming relatively cheaper in Yuan. If the demand for imports is price elastic, the quantity demanded of imports will increase more than proportionately and import expenditure will increase.</p> <p>As long as ML condition (<math>PED_x + PED_m &gt; 1</math>) holds, the appreciation of</p>	

	<p>Yuan will cause BOT to worsen. China's trade surplus will become smaller i.e. trading partners' trade balance deficit will become smaller achieving greater balance in the world economy.</p> <p><i>Note: The analysis on export revenue is different when it's based on export price in Yuan and in foreign currency, say USD.</i></p> <p><b>Elaboration:</b>  <i>When relative <math>P_x</math> increase in foreign currency, USD, it will cause a fall in the quantity demanded (<math>Q_x</math>) in USD. Whether export revenue increases will then depend on the <math>PED_x</math>. Assuming <math>PED_x &gt; 1</math>, then quantity demanded will fall more than proportionate and thus <math>X (P_x \cdot Q_x)</math> will fall.</i></p> <p><i>Since <math>Q_x</math> (measured in USD) falls regardless the <math>PED</math>, <math>D_x</math> in Yuan will fall as <math>P_x</math> in Yuan does not change. Thus, <math>X</math> surely falls in Yuan.</i></p>	
(d)	<p><b>Explain why there might be concern that the Chinese economy is so dependent on exports and investment.</b></p>	[3]
	<p><b><u>Suggested answer</u></b></p> <p><b>1. Contagion effect</b>          Being dependent on exports means that <math>X</math> would account for a large percentage of the actual growth China experiences. But with a worldwide recession, the demand for exports would fall as the purchasing power in the other countries starts to fall. This would mean that China would face a possible slowdown in its own growth and rise in unemployment due to a fall in <math>X</math>, making it susceptible to changes in the rest of the world's economies.</p> <p><b>2. Investment (Domestic vs. FDI?)</b>          Over dependence on FDI - the returns on investment will be sent back to the home country and be recorded as an outflow in BOP in the future. FDIs may also be more easily influenced by better conditions in other emerging economies and pull out of China. If this happens, China would again face slowdown in growth and increase in unemployment.</p>	
(e)	<p><b>With reference to the data, assess the costs and benefits of aiming for lower growth rates in China.</b></p>	[8]



### Suggested answer

#### Introduction

China has experienced high growth rates in the past decade, together with high inflation rates. A lower growth rate can be achieved by a variety of contractionary policies, including allowing an appreciation of the Yuan. A lower growth rate may actually benefit China by reducing the problems faced currently. But it may also bring about costs to China and the rest of the world.

#### Benefits of lower growth rates

##### 1. Lower inflation rates

A fall in AD (caused by any policy aimed at reducing growth rates) would lead to a fall in **demand-pull inflation**

Evidence

##### 2. Slowing down the widening income gap / Reducing the widening income disparity (Extract 4)

Growth in China is largely confined to the urban region. People in urban region see faster increase in income compared to the rural regions.

##### 3. Reduce environmental problems/negative externalities (Extract 5)

A fall in growth rate, caused by a fall in any component of AD would lead to less manufacturing, thus a reduction in environmental problems

#### Costs of lower growth rates

##### 1. Existence of spare capacity

As China's growth has been dependent on investments this would have created an increase in productive capacity for the Chinese economy, shifting the LRAS to the right. With a slowing down of growth rates through a lowering of AD, there will be increase in unemployment and spare capacity in the economy → Link to material SOL

##### 2. Poverty

In Extract 5, the rapid growth in China has lifted about 10% of its total population from poverty.

##### 3. Unbalanced global economy

A slowdown in growth by China would mean less purchasing power and a fall in demand for imports. This would mean a fall in the demand for the goods & services of other countries, which could lead to a contraction in the national income of the rest of the

	<div>4. <u>Reduce social problems by minimizing rural-urban migration</u> (Extract 5)</div> <div>The large scale migration has already resulted in urban regions being overpopulated.</div>	world's economies		
	<div><u>Conclusion &amp; Assessing the extent</u></div> <div><ul style="list-style-type: none"><li>Although there are both costs and benefits associated with lower growth rates, it is pertinent that China should aim for it. As it will help China to continue in a more sustained manner. If growth continues to be rapid it may become another Japan.</li><li>One must note that a lower growth rate did not necessarily mean a zero or negative growth rate. So, a lower but still positive growth rate might not cause unemployment and lower living standards but might alleviate some of the problems associated with a much higher growth rate.</li><li>As long as the slower growth is accompanied by a slowdown in the growth of the productive capacity the benefits of lower growth rates has more benefits than costs to China.</li></ul></div>			
(f)	Discuss the view expressed in both Extract 5 and Extract 6 that China will eventually grow to become the world's largest economy just because it has the greatest number of people.		[10]	
	<div><u>Suggested answer</u></div> <div><div><div><u>Introduction</u></div><div>Identify growth to the world's largest economy is defined by size of GDP.</div></div><div><div><div><u>Thesis:</u> China will become the world's largest economy based on its largest population</div><div><u>Anti-thesis:</u> China may not become the world's largest economy</div></div><div><div><u>Larger workforce and big domestic market</u></div><div>1. <u>May not be fully utilising her resources and C as a % of GDP in China is relatively smaller as</u></div></div></div></div>			

		<p><b>AD-AS analysis</b></p> <p>With the largest population in the world, China has the largest potential pool of workers i.e. resources. Hence, China's potential output (LRAS is high due to high quantity of labour) should be the largest in the world (If matched by a high AD at full employment output).</p> <p>In addition, the large population provides a large market (High C) to boost AD and hence GDP.</p> <p>Abundance in labour → Comparative advantage in the production of labour intensive goods eg. manufacturing → Aid their growth in trade → Further fuel growth in national income</p>	<p><b><u>compared to X &amp; I now</u></b></p> <p>Development in China is largely confined to the coastal regions. Not all resources have been fully utilised.</p> <p>The efforts to encourage consumption among Chinese households have not seen much result. Likely due to the Asian values of being frugal, or the intention to save, with a longer term view of economic prospects. (Evidence: Extract 6, Para 2)</p> <p><b>Evaluation:</b> Due to the one-child policy, China is facing low birth rate and an ageing population, so in years to come, workforce may shrink.</p> <p><b>2. <u>The potential output of the country is affected by other factors</u></b></p> <p><b>Quality of the resource.</b></p> <ul style="list-style-type: none"> <li>• The skills level of China's labour force may not have increased much.</li> <li>• From now till 2030, it's about almost 2 decades. The nature of products China may produce in future is likely to change, into more value-added products as well as services.</li> <li>• However, there is no certainty that the Chinese labour force may raise their skills levels sufficiently to meet the ever changing demands of their economy -&gt; structural unemployment worsens over time.</li> <li>• The case of Japan shows that with a relatively smaller population Japan's economy was able to become the 2<sup>nd</sup> largest for almost 4 decades. So it's not about quantity per se but quality.</li> </ul> <p><b>Rising cost of production affects X and I.</b> A significant rise in wages (if above rise in productivity) of Chinese workers may erode the advantage of a large labour force. (Evidence: as workers demand better</p>	
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		<p>wages and work conditions.)</p> <p><b>Relationship with other countries</b> Dependency on exports for growth has caused China to be susceptible to trading partners demand. If China's trading partners imposes trade sanctions, China's growth will be affected, and China may not become the largest economy. Evidence: Trading partners are not happy with China</p>	
		<p><b><u>Conclusion:</u></b> In summary, China will eventually grow to become the world's largest economy. With the greatest number of people, she has the quantity of resources and the market size. However, whether that will serve as an advantage to China, will depends on their willingness and ability to undergo structural changes, skills retraining, and the ability of the government to implement programmes for related training; and also the ability to raise domestic consumption.</p>	

[Total: 30]

## TYS N2012 Q1

Most brands of cars are available in different models. A large rise in the cost of car manufacture and a rise in incomes are likely to affect the sales of various models of car in different ways.

(a) Explain how elasticities of demand can assist in understanding the effect of each of these changes on the sales volume of different models of car. [12]

(b) Compare and contrast the likely combined impact of both these changes on the revenue earned from the sales of different models of car. [13]

(a)

### Introduction

Key Words	Elasticities of demand and sales volume (quantity exchange)
Issues	A large rise in cost of car manufacture and a rise in income impacting sales of various models of car.
Approach	Use PED and YED to analyse

*Note: Models are not brands.*

Brand	Models	Grade
Toyota	Lexus Corolla Vios	Luxury Mid-range Low-end (usually below 1600cc)

### Body

Issue	Concepts	Diagram
A large rise in cost of car manufacture	<p>↓SS → ↑P and ↓Q</p> <ul style="list-style-type: none"> <li>• Increase the cost of production which is a determinant of supply</li> <li>• Reduce the willingness and ability to produce at every price level</li> <li>• Supply falls leading to a rise in price and output.</li> </ul>	
First Approach (The easier approach)	<p><b>Define PED:</b> PED to understand the responsiveness of Qd to a change in price, ceteris paribus.</p> <p><b>High-end models tend to be price-elastic (<math> PED  &gt; 1</math>):</b> Large proportion to income and luxury good to most people. As a result, Qd or sales volume decreases more than proportionately when supply falls.</p> <p><b>Low-end models tend to be price-inelastic (<math> PED  &lt; 1</math>):</b> In countries with vast areas where public transport is not very efficient, a basic car to travel around is a necessity.</p>	<p>Refer to the figure above,</p>

	As a result, Qd or sales volume decreases less than proportionately when supply falls.	when supply falls from $SS_0$ to $SS_1$ , equilibrium quantity falls more than proportionate for the relatively more price-elastic demand from $Q_0$ to $Q_1$ and to $Q_2$ for the relatively more price-inelastic demand.
<b>Second Approach Taken into consideration the income groups for different car models (especially in Singapore's context or countries where a basic car is considered a luxury good)</b>	<p><b>Mid-range and low-end models tend to be price-elastic (<math> PED  &gt; 1</math>) to an average consumer:</b>  In Singapore, cars are generally very expensive due to the taxes and policies to curb congestion in and as a result, the cost of a car consists of a large proportion to income to an average consumer who opts for such models. Also, public transport such as taxi and MRT are substitutes. As a result, Qd decreases more than proportionately when price increases due to a fall in supply.</p> <p><b>High-end models tend to be price-inelastic (<math> PED  &lt; 1</math>) to the rich and very rich:</b>  Those who can afford the more powerful engine car models are usually the rich and very rich. So such cars to them are more of a necessity to reflect their social status. As a result, Qd decreases less than proportionately when price increases when supply falls.</p> <p><i>Note: Cambridge did point out this is a more complicated approach but nonetheless it is good to know about this approach. You may choose either approach or you can use this as a form of evaluation.</i></p>	Diagrammatic explanation is similar to above
A rise in income impacting sales of various models of car	<p><b>A rise in income means consumers have a higher purchasing power to buy goods and services.</b></p> <p><b>Define YED:</b>  Responsiveness of demand to a change in income, ceteris paribus.</p> <p><b>High-end models tend to be YED positive and high (<math>YED &gt; 1</math>)</b></p> <ul style="list-style-type: none"> <li>Due to the high quality of such car, they tend to be income elastic and it is a luxury good.</li> <li>Demand will increase by a bigger % than the</li> </ul>	



	<p>rise in income, ceteris paribus.</p> <ul style="list-style-type: none"> <li>• Sales volume rises significantly</li> </ul> <p><b>Mid-range models tend to be YED positive and low (<math>0 &lt; YED &lt; 1</math>)</b></p> <ul style="list-style-type: none"> <li>• Demand will increase by a lesser % than the rise in income, ceteris paribus.</li> <li>• Sales volume rises insignificantly</li> </ul> <p><b>Low-end models tend to be YED negative</b></p> <ul style="list-style-type: none"> <li>• Usually such models are deemed to be inferior by the consumers due to the weaker engine, size and material used. (Note: do not say that because it is cheaper)</li> <li>• Demand will decrease when there is a rise in income, ceteris paribus.</li> <li>• Sales volume falls.</li> <li>• The extent of fall will depend on the degree of elasticity.</li> </ul>	<p>Referring to the figure above, when income rises, demand will increase more than proportionate from <math>D_0</math> to <math>D_1</math> for luxury car models and sales volume will increase significantly from <math>Q_0</math> to <math>Q_1</math>. For the mid-range models that are positive income inelastic, demand will increase to <math>D_2</math> and sales increases to <math>Q_2</math>. For inferior models, demand will fall to <math>D_3</math> and sales drops to <math>Q_3</math>.</p>
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### Conclusion

PED concept helps us to understand why and how an increase in cost of manufacturing cars is likely to cause sales volume to fall, albeit at different rates for different models of car. YED concept helps us to understand why and how an increase in income is likely to result in higher sales volume for normal and luxury cars and a fall in sales volume for inferior models.

### **Note: CED is NOT expected. Why?**

*In the given context it is unrealistic*

- *The focus is on sales volume or Q. In the case of (a) both prices of high end and low end rise due to the rise in manufacturing cost. It is unrealistic to expect those who buy low end to switch to high end! However, it may be possible to justify the use of CED on the assumption, consumers in the high end category may decide to “downgrade” to low end cars though this can be easily rebutted as these rich consumers will probably not deemed the mid-range or low-end models to be good substitutes.*
- *In case of (b), it would sound unrealistic for consumers in the high end category to switch to buying inferior cars just because they are cheaper in the context of rising income!*

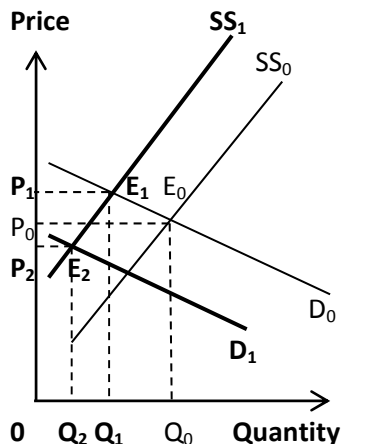
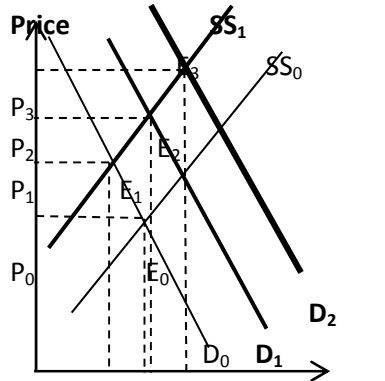
(b)

## Introduction

Define sales revenue – total revenue producers earn from selling a product and it is calculated by price multiplied by quantity, i.e. sales volume.

Compare and contrast the likely combined impact of both these changes on the revenue earned from the sales of different models of car.

## Body

<p>A large rise in cost of car manufacture + PED &gt; 1 + YED &lt; 0 ↓ TR <b>unambiguously</b></p>	<p>↓ SS + PED &gt; 1 → ↑ P and ↓ Q → ↓ TR ↑ Y + YED &lt; 0 → ↓ DD → ↓ P and ↓ Q → ↓ TR</p> <p>Refer to the figure on the right, when supply falls from SS<sub>0</sub> to SS<sub>1</sub>, quantity falls more than proportionate for the relatively more price-elastic demand from Q<sub>0</sub> to Q<sub>1</sub> and price rises less than proportionate to P<sub>1</sub>. As a result, TR drops from 0P<sub>0</sub>E<sub>0</sub>Q<sub>0</sub> to 0P<sub>1</sub>E<sub>1</sub>Q<sub>1</sub>. When demand falls to D<sub>1</sub>, total revenue falls further to 0P<sub>2</sub>E<sub>2</sub>Q<sub>2</sub> unambiguously.</p> <p><b>Evaluation:</b> This combination is more likely to happen in countries where a low-end model car consists of a large proportion to income to the average consumers and yet it is deemed inferior as compared to other mid-range or high end models.</p> <p>But for those who deemed low-end car as something essential to satisfy basic needs to travel around daily, demand is price-inelastic, TR rises with a rise in production cost and if it's also relatively inferior to other models, and TR falls with a rise in income, then, the final impact on TR is uncertain.</p>	
<p>A large rise in cost of car manufacture + PED &lt; 1 + YED &gt; 0 ↑ TR <b>unambiguously</b></p>	<p>↓ SS + PED &lt; 1 → ↑ P and ↓ Q → ↑ TR ↑ Y + YED &gt; 0 → ↑ D → ↑ P and ↑ Q → ↑ TR ↑ Y + YED &gt; 1 → ↑ D → ↑ P and ↑ Q → ↑ TR</p> <p>Refer to the diagram on the right, when supply falls from SS<sub>0</sub> to SS<sub>1</sub>, quantity falls less than proportionate for the relatively price-inelastic demand from Q<sub>0</sub> to Q<sub>1</sub> and price rises more than proportionate to P<sub>1</sub>. As a result, TR rises from 0P<sub>0</sub>E<sub>0</sub>Q<sub>0</sub> to 0P<sub>1</sub>E<sub>1</sub>Q<sub>1</sub>. If the model of car is deemed to be a necessity, demand rises less than proportionate than income to D<sub>1</sub>, total revenue increases further to 0P<sub>2</sub>E<sub>2</sub>Q<sub>2</sub>. But if</p>	

0 Q<sub>1</sub> Q<sub>0</sub> Q<sub>2</sub> Q<sub>3</sub> Quantity

	<p>the model is a luxury one, demand will rise more than proportionate to <math>D_3</math> and total revenue will increase significantly to <math>OP_3E_3Q_3</math>.</p> <p><b>Evaluation:</b>  This combination is probably true for the very rich whose demand for high-end model car is price-inelastic as it consists of a small proportion to their income and when income rises for them, they will buy more luxury cars as they could easily afford to own a few cars to reflect their status.</p> <p>But for most people, luxury car consists a large proportion to income and demand is price-elastic, TR falls when price rises with a rise in production cost and when income increases, luxury car's demand rises more than proportionate causing TR to rise, then, the final impact on TR is uncertain and depends on the relatively shift in supply and demand and also the magnitude of PED and YED.</p>	
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**Conclusion + Evaluation:**

Except for two scenarios that are explained above, the combined effects on sales revenue is uncertain or indeterminate.

## **TYS N2012 Q2**

University education in Singapore and throughout the rest of the world is subsidized by national governments rather than left to market forces. During 2010, several governments announced that these subsidies would be cut, stating the need to reduce large fiscal budget deficits as the reason.

Explain why countries subsidize university education and discuss whether reductions in subsidies are justified. [25]

<b>Dissect Question Using the 3'Cs'</b>	
<b>C – Command word</b>	<b>Explain and Discuss</b>
<b>C – Concept (s)</b>	Market Failure: Externalities. Budget deficit
<b>C – Context</b>	University education

### **Schematic Plan**

<b>INTRODUCTION</b>	
<b>BODY</b> Explain why university education is subsidized using standard externality framework. Explain how a subsidy can improve resource allocation using the standard externality diagram.	
<b>Thesis:</b> Reduction of university subsidy is justified	<b>Anti-Thesis:</b> Reduction of university subsidy is not justified
<b>CONCLUSION: Final Stand</b>	

### **Suggested answers**

#### **Introduction**

- State that university education is deemed by the government to be a form of merit good which is a good or service that the government deemed socially desirable but under consumed.
- It is usually due to the presence of positive externality, imperfect information and income inequality.
- As a result, the free market may not allocate enough resources to university education and hence governments usually subsidize it. However, this essay also aims to discuss whether it is justifiable to reduce the subsidy as proposed by many governments.

#### **Body**

**(A) Explain the market failure in university education using the standard externality framework and show in the diagram how a subsidy helps to correct the market failure.**

#### **Define + exemplify PMC**

Providers of university education only considers the private marginal cost (PMC), which is the cost to provide an additional unit of university education to an undergrad that comes in the form of higher salaries to professors and utility bills.

#### **Define + exemplify PMB**

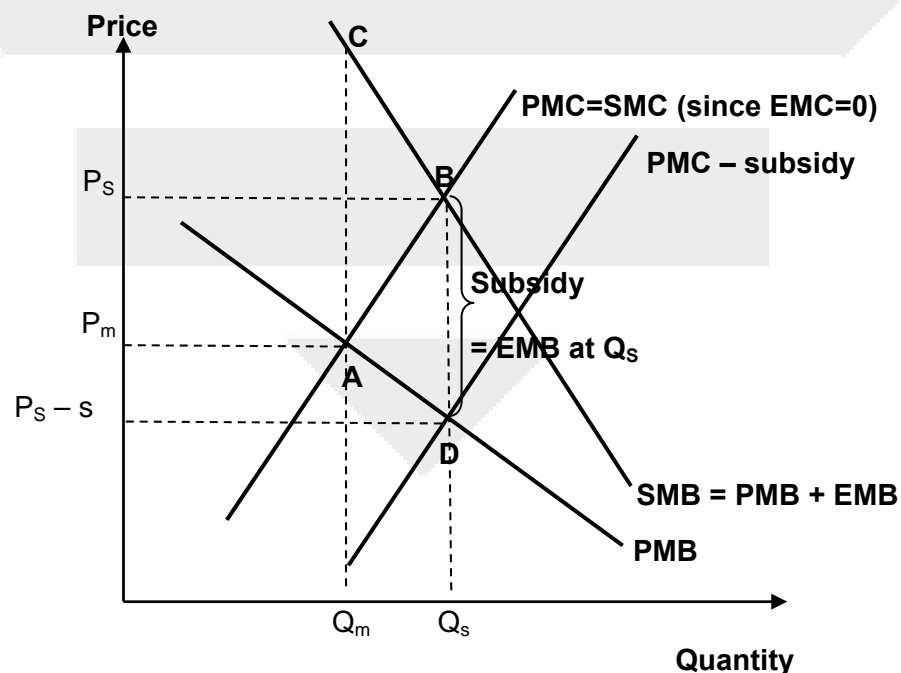
Individuals who seek university education will consider only the private marginal benefit (PMB) which is the benefit to consume an additional unit of university education and this can come in the form of higher wages you can earn upon graduation.

### Positive externality: Define + exemplify EMB

- However, university education results in positive consumption externalities when the consumption of it positively affects the well-being of third parties who do not pay any compensation for that effect.
- This is because individuals do not consider the external marginal benefits that come with university education: increase productivity of co-workers, allowing them to also earn a higher wage. With a larger proportion of skilled workforce, the country might be able to attract more MNCs to set up in the country, creating low skilled jobs like cleaners for the unskilled workers who did not go university.

Hence in this case of university education, individuals are not concerned about the external benefits to others but only their own private benefits as the external benefits are unpriced by the price mechanism and not included in the **private benefits**. As such, the free market has “**over-priced**” the consumption of university which will lead to an **inefficient allocation** of resources and hence **market failure**.

For each **additional** unit of university education, the **social marginal benefit (SMB)** includes the **private marginal benefit (PMB)** plus the **external marginal benefit (EMB)** on third parties. Hence the actual benefit borne by the society is represented by the SMB, which takes into account the full benefits to society of an extra unit of vaccine.  $SMB = PMB + EMB$ .

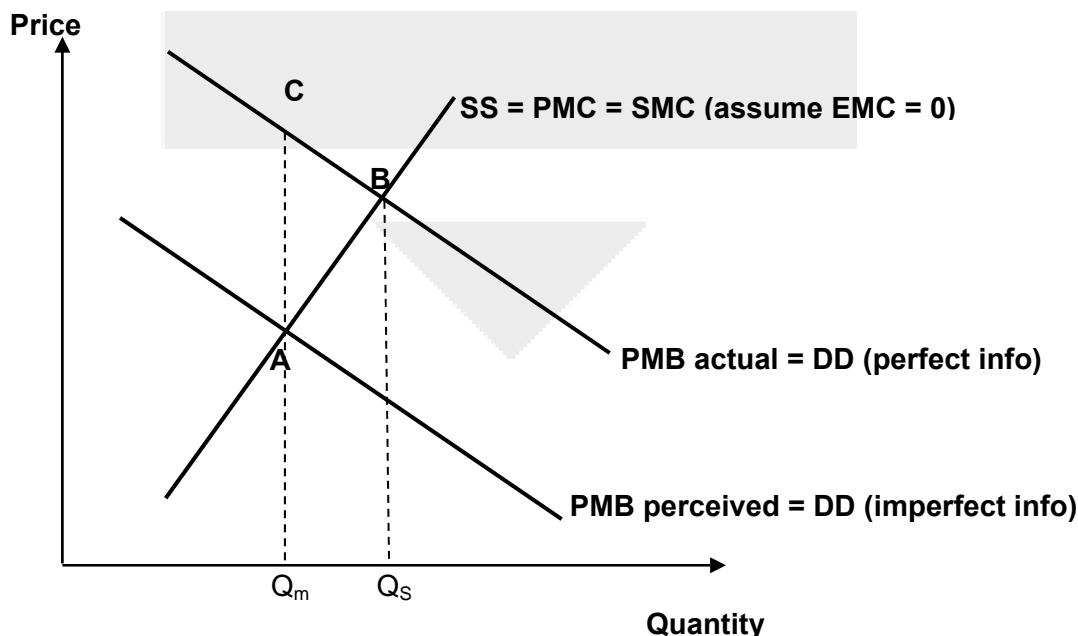


- As seen in Figure above, the presence of an external benefit causes a divergence between private and social benefits, with SMB above PMB as  $SMB = PMB + EMB$ .

- Assume that vaccine consumption yields no negative externality,  $EMC=0$ . Thus,  $PMC=SMC$ .
- Assuming perfect competition, market equilibrium quantity of vaccine is  $Q_m$ , where  $PMB = PMC$ , as consumers and producers of vaccines only consider their own benefits and costs.
- However the socially efficient quantity of university education should be at  $Q_s$  where  $SMB=SMC$ , where the full costs and benefits and costs to society are considered.  $Q_s$  is more than the market equilibrium quantity,  $Q_m$  where  $PMB = PMC$ . Thus there is underconsumption by the quantity  $Q_s - Q_m$ .
- Area  $Q_s Q_m CB$  is the total social benefit forgone due to the underconsumption  $Q_s - Q_m$ .
- Area  $Q_s Q_m AB$  is the total social cost not incurred for the underconsumption  $Q_s - Q_m$ .
- Since total social benefits forgone exceeds the total social costs not incurred for underconsumption  $Q_s - Q_m$ , area  $ABC$  represents the deadweight welfare loss due to underconsumption of  $Q_s - Q_m$ .
- **The government might give a subsidy to producers corresponding to the external marginal benefit i.e. subsidy =  $EMB$  at  $Q_s$  (distance  $BD$ ) on each unit of university education. This shifts the  $PMC$  downwards so that the new  $PMC$ , which equals  $PMC - \text{subsidy}$ , coincides with the  $PMB$  at  $Q_s$ .**
- Hence, the new market equilibrium quantity where  $PMB = PMC - \text{subsidy}$ , now coincides with the socially efficient quantity  $Q_s$ , where  $SMB = SMC$ .
- **If the subsidy accurately reflects the external marginal benefit, undergrads are now in effect being compensated for the external benefit they bring to others as the price they are paying is now lower at  $P_s - s$ , compared to  $P_m$  before the subsidy. The externality has then been internalised or priced in.**

**(B) Explain the market failure in university education due to imperfect information.**

It is best to undergo education when one is young. However, the young may not fully realise the benefit of higher education because of ignorance e.g. An 18 year old may not understand the value of a higher education and may opt instead to enter the workforce.





- Assume that there are no positive or negative externalities.
- As seen in figure above, with imperfect information, consumer demand for university education is lower at PMB perceived as they underestimate the actual benefit of such screenings.
- As such, the market equilibrium quantity would be at  $Q_m$  where  $PMB\ perceived = PMC$ .
- However, the true private marginal benefit should be at PMB actual.
- Hence, the socially efficient quantity should be higher at  $Q_s$  where  $PMB\ actual = PMC$ .
- Hence the ignorance of the full benefits of university education causes an underconsumption  $Q_s - Q_m$  of such screenings.
- Area  $Q_s Q_m CB$  is the actual total private benefit gained for the underconsumption  $Q_s - Q_m$ .
- Area  $Q_s Q_m AB$  is the total private cost incurred for the underconsumption  $Q_s - Q_m$ .
- Since the actual total private benefits gained exceeds the total private costs incurred for underconsumption  $Q_s - Q_m$ , area ABC represents the **deadweight welfare loss** due to underconsumption of  $Q_s - Q_m$ .
- **Government should encourage those who have the ability to go for higher education to develop their talents and realised their full potential. Towards this end, subsidies can be offered to entice the young to postpone other plans and go for higher education to enhance society's welfare.**

*Note: Subsidy via education provider will increase supply and increase equilibrium quantity exchanged (Q) while others such as scholarships and bursaries that are given to the 'awardees' directly, will increase demand (and Q) as they increase the purchasing power of potential undergrads.*

*Note: Under time constraint, you may choose not to draw diagram for imperfect information. Anyway, for potential undergrads, imperfect information regarding the benefits of a university degree may not be severe so it is not a critical point.*

**(C) Explain the market failure in university education due to income inequality.**

Education provides opportunities for upward **social mobility**. A son of a security guard or taxi driver can become a doctor or manager with the help of higher education. Hence, to promote social mobility and narrow the income gap, education should be made affordable to anyone who qualifies or have the ability and should not be denied an education on grounds of equity. Hence, those especially from lower income households who qualify should be given the opportunities to receive higher education through subsidises e.g. bursaries.

*Note: For merit goods argument, income inequality is a crucial point for consideration so must be included.*

**Discuss whether reductions in subsidies are justified**

<b>Thesis: Reduction in subsidies is justified</b>	<b>Anti-thesis: Reduction is not justified</b>
<b>Infra-marginal externality argument – where EMB is negligible</b> Most of the EMB for education are accrued at the primary and secondary level. There is low EMB for university education. Most of the benefits to university education are private to the individual as their wages are significantly higher, as compared to primary and secondary education.	In the long run, having a highly skilled workforce can attract more MNCs to invest in the country and result in more jobs as well as more higher-paying jobs will be made available even for the less educated. This is especially

<p>Thus, even if the government were to reduce the amount they spent on university subsidy, there would still be a significant private demand for university education.</p>	<p>important for countries which pride themselves in skilled workforce to attract MNCs. So the EMB from university education may not be smaller as compared to primary and secondary school education – infra-marginal externality argument may not stand.</p>
<p><b>Reason 2: High opportunity cost especially in view of high fiscal debt</b></p> <p>University education is very costly to provide, e.g. buildings, facilities, salaries of professors, and high government expenditure on university education means fewer funds available for healthcare and building of necessary infrastructure.</p> <p>In the context Europe, many governments are saddled with large fiscal debts, the use of fiscal austerity is to tighten government spending in order to save the economy from fiscal bankruptcy which could drag the economy into a deep recession. Thus, prioritising spending is important to keep economy afloat to avoid massive unemployment and to generate growth to pay off debts.</p> <p>Opportunity cost is too high if public funds are used to finance higher education in times of fiscal crisis. Funds could be better used to alleviate hardships caused by unemployment e.g. welfare benefits Funds could be better used to promote growth e.g. invest in new technology Funds could be better used to run essential services e.g. law and order; health-care services.</p>	<p>Reducing subsidies in the context of fiscal austerity may be appropriate in the short-run given that there are other spending priorities.</p> <p>However, in the long run, when the crisis is over and the economy recovers, there will be demand for skilled manpower (i.e. university graduates). Cutting subsidies now might lead to a shortage of supply of skilled trained manpower in the long run thus stifling future economic growth.</p>
<p><b>Reason 3: Accentuate income disparity or equity grounds</b></p> <p>In today's globalised world, this has become a hot issue. Everywhere talents are sought after and are highly paid. Thus, those who benefitted from higher education may stand a better chance of earning far above average incomes and should not therefore be entitled to subsidies financed by the public or taxpayers.</p> <p>A higher proportion of university students tend to come from the middle income and higher income households. Having high subsidies for university education, funded by taxes on the entire population, would tend to benefit the middle income and above households.</p>	<p>Students from disadvantaged backgrounds e.g. low-income households who cannot afford to foot the expensive tuition fees, may be deprived of a higher education thus hampering upward social mobility.</p>

**Evaluation:**

What the government needs to do is to have less subsidies but more guaranteed loans at market interest rates. This will result in only those who feel they benefit from a university education will take these loans to pursue a university education, and the applicant, who is just in university because of the excessive subsidy, can change his mind and pursue some other form of higher education. With such loans, potential undergrads from lower-income families will not be deterred to pursue a tertiary education.

The government can also encourage more private organisations to give out scholarships and bursaries.

**Note: In Singapore, undergrads can get study loan at zero interest during their degree course and interest only starts rolling when they start working. Besides, many also use their parents' CPF to finance their study loans. This will cut back the amount of subsidy the government has to pay.**

**Reason 4: Subsidies distort the universities' incentives to keep costs low**

With increased subsidies for universities, the universities know that there will always be students wanting to enrol despite the higher prices they charge. This means that universities have fewer incentives to keep costs low. This results in X-inefficiency, resulting in ever increasing university fees, with greater hardship to students, who may have to take in more debt.

**Conclusion**

In reality it can be said that university education does contribute to economic growth and the welfare of society and hence subsidising the cost of university education is justified. However, there are strong grounds for **reducing** such subsidies if the government is facing a fiscal crisis e.g. Europe. Since the priority is to get the country out of a debt crisis and to spur economic growth. In such circumstances cutting/reducing subsidies for higher education to spur growth can help create jobs in the long run for everyone including graduates who will then be able to find employment in a growing economy.

### **TYS N2012 Q3**

Internet or on-line shopping has grown rapidly in recent years. Low barriers to entry have allowed a wide range of small specialised retail firms to market their products on the internet. At the same time economies of scale have led to small number of large internet retail companies dominating the market for other products.

- a. Explain the existence of these two different types of online retailers and which market structure best explains the market behaviour of each of them. [10]
- b. Increased specialisation and low barriers to entry have an impact on consumers and existing producers. Discuss how far the traditional analysis of these economic effects applies to the growth of online shopping. [15]

#### **Part (a)**

Explain the existence of these two different types of online retailers and which market structure best explains the market behaviour of each of them. [10]

<b>Dissect Question Using the 3'Cs'</b>	
<b>C – Command word</b>	Explain – make clear the reasons for the presence of small and large on-line retailers and which market structure can be used to classify them
<b>C – Concept (s)</b>	Characteristics of market structures, namely monopolistic competition and oligopoly
<b>C – Context</b>	Online retailers under different market structures

#### **INTRODUCTION**

Briefly explain how the internet has revolutionised businesses: Products and services can now be sold via the internet and this greatly reduces the cost of production and makes it easy for many firms to join a particular industry.

This essay will explain the presence of small on-line retailers as well as the existence of big online retailers such as Amazon and eBay.

#### **BODY**

**1. Reasons for existence of online retailers: Growing demand and lower barriers to entry**

**2. Two types of online retailers:**

**(a) Small personalised retail firms:** Justify with characteristics of monopolistic competition

**b) Large internet retail companies:** Justify with characteristics of Oligopoly

#### **CONCLUSION**

Even though internet has greatly reduce the barriers to entry and hence cost, big companies are still able to capitalise on their brand name to build a strong online presence.

### **Suggested Answers**

#### **Introduction**

- The internet has lowered the barriers of entry for many small businesses. While the internet has made it easy to set up a business, there is however a limit to which the internet can make markets competitive. It is still possible for on-line large retailers with significant market

power as attested by the presence of Amazon; the biggest internet company in terms of sales revenue to co-exist alongside smaller companies.

- This essay will look briefly at the existence of these two types of on-line retailers and explain the type of market structure that fit them.

## **Body**

### **Growth of online retailers**

- **Low barriers to entry:** Low start-up costs because there is now no need to maintain a shop/ factory space in a shopping centre or mall. To build up a presence in cyber-space only require one to set up a website and one is in businesses; no formidable or cumbersome legal barriers to stop new firms from entering the on-line shopping market.
- **Demand factor:** Technological advancements have led to the growth of broadband internet connection. With this increased connectivity, it becomes easier to do on-line shopping. At the same time, retailers are also using the latest software/ hardware to reduce the incidences of on-line fraud. This has increased the public's confidence in shopping on-line. In addition, households are bombarded with many demands; and with this increased demand time pressure, many are turning to the internet to make purchases.

### **Monopolistic Competitive Markets**

- Examples: Highly specialised blog-shops selling a mind-boggling variety of products e.g. fashion accessories, clothes, shoes; handbags; florists; health supplements.
- In reducing the barriers of entry, the internet has resulted in surge of numerous smaller online firms, each with an insignificant market share.
- Products may be "differentiated": may be imaginary or real.
- Market behaviour aka for pricing and output decisions: Independent pricing and output decisions
- Limited pricing power. No attempt to collude e.g. price-fixing; price leadership or compete aggressively .e.g. price wars.
- Firms typically do not spend large sums on branding or R&D, e.g. blog-shops.
- Firms are content to remain small as evident by the absence of mergers & acquisition would be that of a monopolistic competitive firm.

### **Oligopoly**

- Examples: Amazon, eBay and Apple stores
- They are household names, i.e. well-known firms: brand name is a form of barrier to entry and this gives such firms an edge above others.
- Many of these bigger on-line companies are also able to reap the economies of scale in marketing, bulk purchasing and distribution (elaborate) that are not available to smaller on-line retailers. (Note: As these are retailers, refrain from giving inappropriate examples of EOS.)
- Market behaviour – strong branding to maintain market share; price-fixing (Apple accused of price-fixing in the e-reader market); substantial pricing power.
- These explain why it is still possible for large on-line retailers such as Amazon to exist alongside the smaller companies.
- This is because despite the existence of smaller bookstore that may exist to compete with Amazon, it is near impossible to erode Amazon's dominant position due to the sheer number of titles that it can carry as compared to the smaller bookstore.

## **Conclusion**

Internet shopping market is characterised by the co-existence of both small and big retailers each leveraging on their respective strengths (e.g. choices v economies of scale) and catering to different type of markets (e.g. niche v mass market)

### Part (b)

Increased specialisation and low barriers to entry have an impact on consumers and existing producers. Discuss how far the traditional analysis of these economic effects applies to the growth of online shopping. [15]

<b>Dissect Question Using the 3'Cs'</b>	
<b>C – Command word</b>	Discuss – Need to provide a 2-sided answer, with attempts to provide evaluation
<b>C – Concept (s)</b>	<b>DD-SS framework as the question asks for growth of online shopping – a 'market'</b>
<b>C – Context</b>	Increased specialisation and barriers to entry affects the growth of online shopping

<b>INTRODUCTION</b>
<b>BODY</b> <ul style="list-style-type: none"> <li>- Explain the impact of specialisation and lower barriers to entry leading to the growth of online shopping – rise in demand and fall in cost.</li> <li>- Explain the extent.</li> </ul>
<b>CONCLUSION</b>

### Suggested Answers

#### Introduction

- Increased specialization and low barriers to entry has the effect of affecting the cost of production for firms as well as influencing demand for goods.
- Main issue: To what extent these explain growth of on-line shopping

#### Body

<b>Increase demand</b> <b>Choices and convenience</b> <ul style="list-style-type: none"> <li>• Consumers get access to a market where there are many sellers offering a wide range of goods and services</li> <li>• They are able to compare prices easily via internet</li> <li>• Exemplify: At the click of a mouse, consumers get access to a mind boggling variety of on-line shops selling a mind boggling variety of products) and enable consumers to save time going to shopping mall</li> </ul>	<b>The increase in demand is limited due to the following:</b> <ul style="list-style-type: none"> <li>• However, at the same time, consumers are wary of going on line to shop because of on-line fraud. The internet is largely an unregulated market where it is relatively easy for unscrupulous sellers to resort to fraud or disinformation to rip off unsuspecting consumers. It is easier for sellers to pass off shoddy products as quality goods to consumers on-line. Thus, for this reason consumers might not be attracted to go on-line to shop despite the increased specialisation and low barriers.</li> </ul> <b>Evaluation:</b>
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<ul style="list-style-type: none"> <li>As a result, there is a growth in demand for online shopping</li> </ul>	<p>Retailers are using the latest software/ hardware to reduce the incidences of on-line fraud. This has increased the public's confidence in shopping on-line</p> <ul style="list-style-type: none"> <li>In the fashion industry where consumers may not feel comfortable buying clothes on-line. They would want to try on these clothes rather than buying them online through a catalogue. In addition, there are some products such as diamonds where consumers feel more assured buying from knowledgeable salesman. The additional service provided by traditional stores may come at a higher price tag.</li> <li>There may also be instances where consumers want better after-sales services and may be prepared to buy their products from traditional stores even though these may cost more compared to on-line retailers.</li> </ul> <p><b>Evaluation:</b> Many existing traditional retailers such as Apple, Walmart from the US and Marks and Spencer, Tesco and British Airways from the UK have built up a strong and secured online presence so as to offer consumers the choice of shopping on-line or in their stores.</p>
<p><b>Increase in Supply</b> <b>Increase in number of online retailers due to lower cost of setting up business + specialisation in niche market</b></p> <p>According to traditional analysis, increased specialisation and low barriers to entry suggest surge in number of firms, catering mainly to niche or specialised markets.</p> <p>The relative ease of setting up an on-line store may actually prompt many new entrants to the industry.</p> <ul style="list-style-type: none"> <li>As on-line retailers do not need a physical store, cost such as rental will hence not be incurred; without a need to maintain a store/chain of stores in commercial buildings</li> </ul> <p>Specialisation in niche market also helps firms to cut back on cost</p>	<p><b>The increase in supply is limited due to the following:</b> Due to the low barriers to entry, there is very steep competition. Firms that cannot withstand the competition, will shut down when <math>AR &lt; AVC</math> and exit the market.</p> <p><b>Evaluation</b> So while the demand for online shopping may have grown tremendously due to change in taste and preference of consumers, the number of firms may not have risen that much.</p>

## **Conclusion**

Traditional analysis of the effects of increased specialisation and low barriers to entry offer a good explanation for the growth of small retailers in the on-line shopping market. However, traditional analysis does not seem to apply to the growth of big on-line retailers because the presence of these big retailers suggests barriers to entry are high and they cater to the mass market rather than niche markets.



#### **TYS N2012 Q4**

**Governments generally face trade-offs between different macroeconomic policy objectives.**

**Discuss how far a government's macroeconomic policy decisions when faced with these trade-offs are affected by the extent to which the economy is open. [25]**

#### **Thinking questions:**

1. Which are the trade offs that are possible between the different macroeconomic policy objectives?
2. Which are the trade –offs that are more relevant for an open economy?

*→ This is not a Singapore policy question (and do not confuse small with open!)*

<b>Dissect Question Using the 3'Cs'</b>	
<b>C – Command word</b>	Discuss
<b>C – Concept (s)</b>	Trade-offs between various macroeconomic objectives when using various macroeconomic policies
<b>C – Context</b>	Open economies (Varying degree)

**\*This question allows for a variety of approaches.**

***Approach 1:*** Approach by anchoring on policy choices when showing possible trade-off situations before demonstrating how relative openness will affect the decision choice while recognising there are other factors in consideration in decision making.

***Approach 2:*** You can anchor answer based on conflicts/trade-offs, show how the government has to come to a policy decision and the role of how the relative openness will affected the decision choice while recognising there are other factors in consideration in the decision marking.

#### **Simple Schematic Plan**

<b>Introduction:</b>  <b>Clarify</b> key words of macroeconomic policy objectives, trade-offs and openness of an economy.	
<b>Thesis</b>  <b>A government's macroeconomic policy decisions when faced with trade-offs are affected greatly by the extent to which the economy is open.</b>	<b>Antithesis</b>  <b>A government's macroeconomic policy decisions when faced with trade-offs are affected by other factors</b>

<p>Illustrate with the following trade-offs (Approach 1 by policy first or Approach 2 by conflicts first):</p> <ol style="list-style-type: none"> <li>1) Growth/Unemployment &amp; demand- pull inflation when using expansionary demand management policies</li> <li>2) Growth &amp; imported inflation when using depreciation/devaluation of the exchange rate</li> <li>3) Growth &amp; Balanced BOP when using expansionary monetary policies</li> <li>4) Growth &amp; Structural Unemployment</li> </ol>	<ol style="list-style-type: none"> <li>1) Govt budget/Ability</li> <li>2) Current situation of the economy</li> <li>3) Nature of economy <ul style="list-style-type: none"> <li>- Size of the economy</li> <li>- Demographics etc.</li> </ul> </li> </ol>
<p><b>Conclusion</b></p>	

### Detailed Schematic Plan

<p><b>Introduction:</b></p> <p><b>Clarify</b> key words of macroeconomic policy objectives, trade-offs and openness.</p> <p>Macroeconomic policy objectives will include sustained economic growth, low unemployment, low inflation &amp; balanced BOP. It is not easy for the government to achieve all 4 goals all at once and therefore there are times where a choice would involve an opportunity cost of sacrificing another macroeconomic goal.</p> <p>The “openness” of an economy will refer it being to open to goods &amp; services, capital and labour.</p> <p><b>Approach/Issues:</b> We will look at how a government's macroeconomic policy decisions when facing trade-offs between growth &amp; demand-pull inflation, growth &amp; imported inflation, growth &amp; balanced BOP , growth &amp; unemployment are affected by the openness of its economy.</p>	
<p><b>Sample of development using Approach 1</b></p>	
<p><b>Thesis</b></p> <p><b>A government's macroeconomic policy decisions when faced with trade-offs are affected greatly by the extent to which the economy is open.</b></p>	<p><b>Antithesis</b></p> <p><b>HOWEVER, a government's macroeconomic policy decisions when faced with trade-offs may actually be affected by other factors</b></p>

Illustrate with the following trade-offs:

**1) Trade-off between growth/unemployment & demand-pull inflation when using expansionary demand management policies**

An open economy with little natural resources dependent on imports (this may be exacerbated by it being small as in Singapore's case) will have a high marginal propensity to import thus a small multiplier relative to another less open economy that imports less. Thus it faces a smaller trade-off between growth and demand-pull inflation when using expansionary fiscal policy (Explain and illustrate with AD/AS analysis)

Looking from another perspective however, expansionary demand management policies mainly target the domestic factors (C, I and G) in managing the economy. A more open economy in the first place would be less reliant also as well on such demand management tools to bring out economic growth eg. by depending more on policies that will improve their trade competitiveness.

**2) Trade-off between growth & imported inflation when using depreciation/devaluation of the exchange rate**

Most economics could go for a depreciation of their currency during recessions. (Explain assuming ML holds, it will raise (X-M) and improve growth). Open economies like Singapore particularly susceptible to imported inflation (as they tend to depend heavily on imports for necessities and inputs for exports) will have to grapple with the conflict with import-price push inflation.

*Evaluation:* During world-wide recession import-price push pressures are not very high to begin with.

*Evaluation:* Even if an economy is not as

**1) Govt budget**

An economy using expansionary monetary policy of lowering interest rate to stimulate the economy faces a trade off between growth and demand-pull inflation. Thus it will be better for a country to complement with supply side policies such as training, subsidies for R & D & mechanisation to increase the productive capacity (LRAS) of the economy. As long as the rise in AS catches up with the increases in AD, there will be no conflict.

However, such policies require government funds and a country facing a severe budget deficit will no choice at times but to adopt expansionary monetary policy (rather than fiscal policy with the supply-side slant) despite the trade-off. So the consideration of the ability of the government is crucial in the decision-making process.

**2) Current situation/State of the economy**

A country adopting expansionary demand management policies will always face a trade-off between growth and demand-pull inflation whether it is open or not. However, for a country facing deflation for several years, inflation is the last thing on their mind. One example would be Japan who has recently adopted a bold monetary easing stand. Thus the current situation of the economy would be an even more important factor than openness when considering macroeconomic policy decisions when faced with trade-offs between growth and demand-pull inflation.

**3) Size of the economy**

An open economy which is large such as USA is able to use interest rate as a policy

<p>open and susceptible to imported inflation, it might not be able to use depreciate itself out of a recession because it is part of a monetary union. Examples would be countries of the Euro.</p> <p><b>3) Growth &amp; Balanced BOP when using <u>expansionary monetary policies</u></b></p> <p>When a country uses expansionary monetary policy to stimulate the economy by lowering interest rates, it is likely to experience 'hot money' outflow, thus might experience a BOP deficit. For small open economies who are interest rate takers, the destabilizing effects are so severe that they are unable to use interest rate as a policy tool.</p> <p><b>4) Growth &amp; Unemployment when using <u>supply-side policies</u></b></p> <p>For a country to have sustained growth, a government often adopt supply side policies to restructure the economy. This is especially true for open economies faced with global competition for their exports. Such policies will include tax incentives to attract high end foreign direct investment (free flow of capital), foreign talent (free flow of labour) and mechanisation. This will often result in structural unemployment which will require the government to have complementary policies of retraining for local workers as well as calibrated foreign worker policy.</p>	<p>tool to manage its economy as it is an interest rate setter rather than an interest rate taker.</p> <p>Thus despite being open, a large economy is able to use interest rate as a policy tool despite the tradeoff between a balanced BOP &amp; economic growth.</p>
<p><b>Sample of development using Approach 2</b></p>	
<p><b>Thesis</b>  <b>A government's macroeconomic policy decisions when faced with trade-offs are affected greatly by the extent to which the economy is open.</b></p>	<p><b>Anti-thesis</b>  <b>HOWEVER, a government's macroeconomic policy decisions when faced with trade-offs may actually be affected by other factors</b></p>
<p><b>Trade-off 1: Growth Vs Inflation</b></p> <p>Explain using China as a good example- Over the last decade, China has pursued a policy of rapid growth driven by opening up its economy to trade and inflow of FDI. A key objective was to provide enough jobs for</p>	<p><u>Cost-push inflation</u></p> <p>However, inflation in China also came from internal domestic sources not just external factors ie rising costs of food due to bad</p>



their rapidly growing labour-force. This policy helped kept unemployment low and growth high. However, this has been achieved at the expense of rising demand-pull inflationary pressures due to overheating. [Diagram: AD/AS to illustrate overheating or demand-pull inflation]

The drive to grow through trade and investment has resulted in rising trade surpluses (NX) and magnet for inflow of FDIs

**Implication of openness to policy decisions [China being an example of being “less open” than Singapore]:**

Hence, in recent years, China has embarked on a policy of “rebalancing” the economy ie slow-down growth in exports; reduce its trade surpluses with the rest of the world and focussing on increasing domestic consumption to drive growth instead of exports. For example, the China government has allowed the Yuan or rmb to appreciate in recent years to correct the trade imbalance.

To manage this trade-off, a more open economy which is dependent on trade like SG adopts a policy of gradual and modest appreciation (GRAMA) of the Sing\$ to keep inflation low in order to support economic growth.

→Strengthening currency keeps inflation low both directly and indirectly.

Directly = keep import costs down

Indirectly = keep wage-price spiral under control.

*Evaluate: SG openness to inflow of foreign labour has in recent years caused unhappiness amongst the local population .The influx of foreign labour is blamed for causing a higher trade-off between growth and stability. Some quarters have attributed the higher rates of inflation seen in recent years to rising prices of property caused in the influx of foreigners purchasing homes and real estate. Hence, government has to introduce policies to slow down the inflow of foreign workers and restrict foreigners from buying local property.*

weather; livestock diseases causing price of pork to soar and rising health care costs.

However, the basis of the decision is not just due to China being relatively less open. In face the use of tightening monetary policy ie i/r and credit is to slow down growth and curb inflationary pressures in China. It is a policy to stop excessive growth in money supply or credit which is a current problem they face **(STATE OF ECONOMY)** and not aimed specifically at slowing down exports.

Rising prices of homes and cars

However, this policy alone cannot be used to control internally generated inflationary pressures due to rising cost of private transportation and prices of real estate in recent years. The government also uses macro-prudential policies e.g. loan curbs to cool down both prices of COE and homes.

## **Trade-off 2: Low inflation Vs Healthy BOP balance**

### **Explain using SG as a good example**

Open economies such as SG, are particularly susceptible to this trade off. As an open economy that is highly dependent on imported goods and raw materials, the Sg economy is highly vulnerable to import cost push inflation e.g. rising costs of imported fuel and food. To keep imported inflation in check the SG government uses a policy of appreciating the currency/exchange rate. However, strengthening the currency makes exports more expensive and import cheaper, hence worsening the BOT.

### **Implication of openness to policy decisions [Singapore as example of open economy]:**

Use GRAMA policy and not traditional monetary policy centred on controlling interest rates.

#### *Evaluation:*

*The high import content of our exports has a further impact on macro policy decisions. It has limited SG's ability to depreciate the currency even in bad times to help our exporters. This is because depreciating the currency is a double-edged sword – not only does it make exports cheaper it also makes the import content of sg's export more expensive, thus cancelling out the advantage a cheaper currency gives to our exporters. As a result the policy-makers have to resort to what is called "zero appreciation" ie temporarily pause to currency appreciation in order to give some reprieve to our exporters without making imported raw materials more expensive. Moreover, because of this constraint due to our openness, the government focuses on SSP (cost reductions; raising productivity) to give our exporters a competitive edge.*

### **Size of economy: Small economy**

The reason why SG uses exchange rate as its monetary policy is NOT entirely due to the fact that it is an open economy where capital is allowed to move in or out freely without control.

It is also because it is a SMALL economy and hence cannot influence global i/r. SG is a price-taker in the context of the huge international financial market because of our small and open capital market.

### **Trade-off 3: Supply-side stimulated growth Vs Structural Unemployment**

Many developed advanced economies such as USA economy as well as SG have lost their CA in low end manufacturing to emerging low-cost economies such as China and India. So, to stimulate growth these countries have to restructure their economies to move up the value chain to produce high end goods which generally require skilled manpower and better technology. As a result, workers caught in the low-end industries might find their skills obsolete and unable to compete for available jobs that require new skills.

#### **Implication of openness to policy decisions [Singapore as example of open economy]:**

Openness of economy => inflow of cheap foreign labour to compete with unskilled domestic workers for low end jobs- thus worsening the problem of structural unemployment and low-wage income trap ie increases the trade-off. SG reliance on foreign labour is due also to shortage of manpower arising from a small population; low fertility rate and ageing population.

The **main policy instrument** SG relies upon is SSP aim at restructuring the economy to become more competitive. Such policies include retraining, upgrading technology; R +D and innovation to find new niches and also fiscal incentives to attract FDIs that can help restructure the economy e.g. biomedical industries; high end tourism like integrated resorts.

In SG case, using fiscal stimulus to generate growth is not effective because of high import leakages resulting in a weak K. Moreover, trade constitute more than 100% of GDP. So, a recession due to a collapse of exports or external demand cannot easily be offset by stimulating domestic demand to make up for the deficiency in AD.

#### **Nature of economy: Shrinking workforce or demographic factor**

The reliance on SSP-stimulated growth is also due to the fact that SG indigenous workforce is ageing and shrinking. In the light of such constraints, the government has resorted to a policy of “productivity-led” growth. This policy is aimed at addressing the issue of manpower crunch training workers to work smarter e.g. using better equipment to produce goods that are “cheaper and better”

#### **Nature of economy: High Savings Rate**

The fact that SG has a very low K is also because of the high savings rate. This has nothing to do with our openness.

The reason is due to the CPF scheme which make savings mandatory at around 30% of a workers earnings in order to provide for medical expenses and retirement income.

#### **Conclusion/Synthesis**

A country's openness has a certain impact on its macroeconomic policy decisions when facing trade-offs but it is also affected by other factors such as the size of the economy,

government budget and the current situation of the economy.

Looking at the recent years where there have been global recessions, the implication of the state of the economy and therefore the government's priorities seem to be the overriding consideration for policy decisions.

<b>Knowledge, Application, Understanding and Analysis</b>		
<b>L3</b>	For a well-balanced analysis that examines how government's macroeconomic policy decisions when faced with these trade-offs are affected by the extent to which the economy is open as well as other factors such as size of the economy, state of the economy and government budget	<b>15-21</b>
<b>L2</b>	For an undeveloped/lopsided explanation that examines how government's macroeconomic policy decisions when faced with these trade-offs are affected by the extent to which the economy is open	<b>10-14</b>
<b>L1</b>	For an answer which shows some knowledge of the trade-offs between macroeconomic policy decisions	<b>1-9</b>

<b>Allow up to 4 additional marks for Evaluation</b>		
<b>E2</b>	For an evaluative discussion that is based on economic analysis	<b>3-4</b>
<b>E1</b>	For an unexplained judgement, or one that is not supported by economic analysis.	<b>1-2</b>

**TYS N2012 Q5**

During 2009 the Bank of England engaged in what is known as ‘quantitative easing’ by pumping more than £200 billion into the economy. Record low levels of interest rates have also been maintained within the UK economy. Quantitative easing and low interest rates were also adopted by the US.

- (a) Explain why exchange rates rather than interest rates are the preferred choice as the instrument of monetary policy in Singapore. [10]  
 (b) Discuss the likely impact on the Singapore economy of quantitative easing and low interest rates in the US and the UK. [15]

**Part (a)**

Dissect Question Using the 3‘Cs’	
<b>C – Command word</b>	Explain
<b>C – Concept (s)</b>	Exchange Rates, Interest Rates, Monetary Policy
<b>C – Context</b>	Instrument of Monetary Policy in Singapore

**Schematic Plan**

<b>INTRODUCTION</b>
- Explain the nature of the Singapore economy.
<b>BODY</b>
- Explain how the use of exchange rates may lead to a rise in real national output.
- Explain how the use of exchange rates may reduce demand-pull inflation and imported inflation.
- Explain why the use of interest rates is not effective to stimulate aggregate demand.
- Explain how the openness to capital flows and an inactive secondary bond market in Singapore affect the choice of instrument of monetary policy.
<b>CONCLUSION</b>

- Provide a possible conclusion to the essay.

### Suggested Essay Outline

#### Introduction

- Singapore is a small and open economy → small domestic market and open to trade & capital flows

Why Singapore chooses Exchange Rate and not Interest Rate as the Monetary Tool		
(1) Why exchange rate	(2) Why not interest rate	
Best suited for a small and open economy with no natural resources like Singapore to achieve sustained economic growth.  A stable and strong currency is good for trade (min exchange risks /losses due to unexpected fluctuations in exchange rates) and inflow of FDIs (inspires investors' confidence. A strong currency => reflection of the country's ability to export and attract foreign K).	Difficult in controlling interest rate due to <b>(a) openness to capital flows.</b>	Controlling interest rate will <b>(b) make exchange rate very volatile</b> and may have adverse impact on trade.

**(1) Exchange rate has a strong effect on Singapore's macroeconomic aims given her small and open economy.**

- Singapore has to import even the most basic of our daily requirements and raw materials for production. At the same time, a small domestic market also means we have to export to pay for these requirements. These result in a very open trade policy with few import restrictions.
- The total trade volume (X+M) mounts up to be 3-4 times that of our GDP. Trade is the engine of growth to Singapore. Thus we need a **stable exchange rate to keep out import-**



**price-push inflation, to maintain reasonable cost of living, keep cost of production low and instil confidence in the economy.**

**(a) Gradual and modest appreciation during normal times helps to reduce imported inflation**

Singapore is a resource poor country and depends heavily on imported consumer goods thus a stronger S\$ will alleviate imported inflation as imports will be relatively cheaper in S\$ (Singaporean importers need less S\$ to buy the same amount of foreign currencies when they buy imports). This will keep the increase in cost of living at bay.

**FYI only:**

**(b) Maintain Zero Appreciation during bad times**

When the world economy starts to slow down, MAS maintains a zero appreciation of the S\$. When the S\$ becomes stronger, it means our exports are relatively more expensive in terms of foreign currencies as the foreign importers need to use more of their own currencies to buy the same amount of S\$ to buy our exports. This tarnishes our exports price competitiveness. On the other hand, MAS will not immediately depreciate the currency to prevent possible import-cost push inflation. A depreciation of the currency will increase import prices leading to import price push inflation which raise the cost of living. Increased cost of living together with the recession will result in serious fall in real income. Hence, MAS will adopt a 'wait and see' stand before depreciating the currency.

**(c) Slight Depreciation during bad times**

- Generally, when times are bad, the pressure of high import prices such as oil and food prices will ease off and thus there is less need to maintain a strong currency to stave off cost push inflation.
- Not only that, as the world economy continue to slow down, the demand for our exports will fall as the foreign importers of our goods experience a fall in income.
- The demand for exports also tend to be relatively more price elastic during bad times as importers are more conscious with cost-cutting and have a higher tendency to turn to cheaper alternatives. As a result, depreciation of S\$ will make Singapore's exports cheaper in terms of foreign currencies and since demand is price elastic, quantity demanded in foreign currencies will increase more than proportionate or the demand

for exports in S\$ will increase more significantly, resulting in a significant increase in the export revenue. If Marshall-Lerner condition is satisfied, net exports earnings will indeed rise, AD will increase thus causing NI to increase by a multiplier effect.

## (2) Interest rate policy is not chosen

### (a) Small capital market and Openness to Capital Flows making it difficult in controlling interest rate

- Singapore's role as an international financial centre means that small changes in the difference between domestic and foreign interest rates result in large and quick movement of capital flow, making it difficult to target interest rate in Singapore.
- Assume that Singapore government increases interest rate to rein in demand-pull inflation.
- This rise in interest rate, assuming it is significantly higher than interest rate of big or large economies like the US will result in **short-term capital inflow (i.e. hot money)** as Singapore is a **small and open economy with no capital control**. This will mean, foreign investors e.g. US investors will sell their own currency (i.e. USD) and buy S\$ to save with Singapore banks. Banks in Singapore will now have more cash or liquidity to create bank credit or loans. Thus, the supply of bank credit will rise, causing interest rate to fall, until the domestic interest rate equalises or is on par with global interest rates. At this point, there is no more incentive for foreigners to transfer their funds to Singapore since interest rates are identical or on par.
- Thus, it is not possible for the Singapore to set interest rate independently from the rest of the world.
- As a small and open economy, the MAS cannot control interest rate in Singapore and thus it is said to be a price taker. In practice, interest rate in Singapore generally follows interest rate of big economies like that of the US.

### (b) Controlling interest rate will make exchange rate very volatile and will have adverse impact on trade.

- **Adjusting interest rate will subject our exchange rate to volatility which in turn affects investors' confidence and thus may affect our trade volume adversely.**
- As mentioned above, a change in interest rate will result in short-term capital flows. This will have adverse impact on our exchange rate.
- E.g. a fall in interest rate that attracts huge capital outflow will mean a rise in supply of S\$ causing our exchange rate to depreciate. Similarly, a rise in interest rate will attract huge capital inflow causing demand for our currency to rise, strengthening S\$.
- If interest rate is often adjusted, our exchange rate will be very volatile and this is very detrimental to Singapore as we are an export-driven country and we are also heavily dependent on imports for survival and raw material.

**In conclusion, given the nature of Singapore economy:**

1. It is not feasible to use interest rate as a key instrument for conducting monetary policy because of her small economy & openness to capital flows.
2. It is more desirable to use exchange rate as the tool for conducting monetary policy because of her heavy dependence on external trade to drive economic growth.



Level	Mark	Descriptor
L3	7 – 10	Clear analysis to explain why Singapore does not use interest rate policy and the importance of choosing exchange rate policy.
L2	5 – 6	Incomplete analysis to explain the choice of using exchange rate over interest rate as monetary tool to manage the Singapore economy.
L1	1 – 4	Demonstrates little understanding about Singapore's choice of exchange rate policy.

FYI (Not needed in exams):

**Open Economy Trilemma**

*In theory, a country cannot choose a policy combination that involves the following: free movement of capital, management of i/r as well as exchange rates. Amongst the 3, the country must forgo one of them.*

If supposing Country X decided to tighten mp by raising i/r to control demand-pull inflation. If there is no capital control, the higher i/r will lead to greater inflow of hot money as foreigners transfer their money into Country X banks to earn a higher return. The inflow of hot money will exert an upward pressure on exchange rate to appreciate as there will now be more demand for country X's currency in the FX market. The appreciation will stop when foreigners stop transferring money into country X. This happens when the potential gains from higher i/r is exactly offset or balanced by the loss from having to incur a higher cost of exchanging their currencies into country X currency in the FX market. If Country X control the exchange rate at the same time, it would mean having to sell more of their currency in the FX market to prevent an appreciation. This would lead to increase money supply in the economy as more currency is put into active circulation, thus undermining their ability to control i/r by restricting money supply. Hence, this situation is called a trilemma or impossible trinity.

Exemplify:

- USA forgo managing exchange rates
- China forgo free movement of capital ( capital controls)

- Singapore forgo managing interest rates



## Part (b)

Dissect Question Using the 3'Cs'	
<b>C – Command word</b>	Discuss – Need to provide a 2-sided answer, with attempts to provide evaluation
<b>C – Concept (s)</b>	Quantitative Easing, Low Interest Rates → Impacts on Macroeconomic Objectives
<b>C – Context</b>	The impact of policies implemented in US and UK on the Singapore economy

## Schematic Plan

### INTRODUCTION

- Explain how quantitative easing and low interest rates may stimulate the economies of US and UK.

Low interest rate = conventional instrument for conducting mp

QE = unconventional instrument for conducting mp in recent years.

### BODY

#### Economic growth, Employment and BOP

- Analyse how economic growth in US and UK may impact the export revenue of Singapore, hence affecting the economic growth, employment and balance of trade.
- Consider if quantitative easing and low interest rates would definitely stimulate the economies of US and UK, and the possible impact on Singapore.

#### Inflation

- Explain how low interest rates in US and UK will affect the level of interest rates in Singapore, and subsequently the impact on the inflation rate in Singapore.
- Analyse which sector(s) in Singapore is/are likely to experience rising demand due to low interest rates

and how this will contribute to the rise in inflation rate.

- Consider if there is/are any measure(s) undertaken by the government to curb this problem.

## **CONCLUSION**

- Provide a possible conclusion to the essay.
- Make a judgement on whether the impact on Singapore is likely to be positive or negative.

## **Suggested Essay Outline**

### **Introduction**

- Quantitative easing (QE) and low interest rates in the US and the UK → stimulate their economies → actual growth → rise in real national output and employment

### **Body**

#### **Possible positive impact on the Singapore economy (economic growth, employment & balance of payments)**

- Quantitative easing and low interest rates in the US and the UK → rise in AD in both economies → rise in real national output → economic growth in both economies.
- If both economies are near to full employment, there could be a rise in inflation rates in both economies with little or no increase in the real national output. However this is very unlikely as both economies are experiencing slow growth hence QE & low interest rates were implemented by the central banks.
- Economic growth in the US and the UK → expansion in industry activities/output in these two economies → rise in demand for exports from Singapore → rise in X → rise in AD → increase real national output via the multiplier process (assuming Singapore is not operating at the full employment level of output) and hence increase employment in Singapore
- The rise in export revenue → improves the balance on trade in goods position assuming the rise in export revenue is greater than the rise in import expenditure
- With economic growth and rising income level among the residents in the US and the UK → increase in the tourist arrivals into Singapore → improving the balance on trade in services position
- Overall the improvement in the balance on trade in goods and services (balance of trade) → improve the current account position hence balance of payments account

- However if the QE failed to stimulate growth in the US and the UK → external demand from these two economies will remain low and continue to fall → fall in AD in Singapore → fall in real national output and employment
- In addition, US and UK are major trading partners of many economies → the same negative impact on other economies will worsen the low external demand from Singapore → if output continue to fall → Singapore may fall into a recession

Low interest rates in US and UK will lead to inflow of capital flow into Singapore leading to improvement in financial account of the BOP. However, this happens only immediately following the lowering of interest rates in US and UK. Interest rates in Singapore will also start to decrease and follow the interest rates changes in the major economies as the increased liquidity will cause interest rate to fall until it is on par with global interest rates.

### **Possible negative impact on the Singapore economy (inflation)**

- Low interest rates in US and UK → interest rates in Singapore will fall and maintain at a low rate, in tandem with the rates in US and UK
- Theoretically, low interest rate in Singapore → low borrowing cost → stimulate investment and consumption → rise in AD → rise in real national output
- As explained in part (a), investment are mainly FDI with own source of funding and domestic consumption constitutes an insignificant share of AD
- The low interest rate will only lead to more borrowing to purchase property and cars → drives up the prices of properties and COEs
- The inflation rate in Singapore is measured by the consumer price index (CPI), with housing and transport taking a huge proportion → rise in inflation rate → higher cost of living
- However the rise in property prices can be managed by the cooling measures introduced by the government → may lower the inflation rate if the measures are effective

### **Conclusion**

- Singapore is very dependent on trade to stimulate growth
- If US & UK are able to achieve economic growth, Singapore will benefit from a rise in external demand
- If the economies of US & UK continue to slow down, interest rates will continue to remain low → interest rates in Singapore will also continue to remain low in tandem → upward pressure on inflation rate in Singapore unless government measures are effective

Level	Mark	Descriptor
L3	9-11	Well-elaborated answer with diagrams to explain the impact of the quantitative easing and low interest rate on the different macroeconomic goals of Singapore.
L2	5-8	Able to give some analysis of how quantitative easing and low interest rate works but



		unable to demonstrate fully the impact on Singapore.
L1	1-4	Answer shows limited knowledge of quantitative easing and/or low interest rate.
Evaluation		
E2	3-4	Reasoned judgment on the degree of impact on the Singapore economy.
E1	1-2	Evidence of some evaluation.

### **TYS N2012 Q6**

(a) How do economists compare the economic performance of different countries? [10]

(b) Assess the extent to which Singapore's economic performance is the main determinant of its population's standard of living. [15]

### **Part (a)**

<b>Dissect Question Using the 3'Cs'</b>	
<b>C – Command word</b>	How: Explain ways in which.
<b>C – Concept (s)</b>	Economic performance → Indicators used for cross country comparison
<b>C – Context</b>	General (No specific country given)
<b>INTRODUCTION</b>	
<ul style="list-style-type: none"> <li>• Key words: Economic performance, compare, different countries</li> <li>• Issue: Methods to compare economic performance over space</li> <li>• Approach: This essay attempts to explain how economists go about comparing economic performance between countries</li> </ul>	
<b>BODY</b>	
<p>Ways to for compare Economic performance over space:</p> <ul style="list-style-type: none"> <li>• Compare GNP/GDP(PPP) per capita for each country</li> <li>- <b>Growth Indicator: % change in real GDP/GNP over time.</b></li> <li>- <b>Real GDP per capita (Define) is the most basic indicator of economic growth and material SOL used by economists worldwide. It is already adjusted for changes in the GPL and population size.</b></li> <li>- <b>Using GNP instead of GDP would mean that we measure the income of residents of the country and not foreigners, which allow governments to have a better gauge of the SOL of their own residents. This may be increasingly important in highly globalized countries like Singapore where foreigners may make up a significant portion of the working population/ investors. However, it does not make much difference in computation usually.</b></li> <li>- <b>For over space comparisons, GDP (PPP-Adjusted using Purchasing Power Parity</b></li> </ul>	

exchange rate) per capita is used as it also adjusts for differences in costs of living between the countries which will be especially stark and important when comparing developing vs developed countries.

- Compare GNP/GDP(PPP) per capita growth rate for each country
- **Comparing the economic growth rate of the countries is also important, to show if economies are stagnating, growing or shrinking. This will better indicate if the economy is doing well, compared to just how affluent they are currently.**
- Compare the relative inflation rates of each country
- **Another important indicator is the relative inflation rates of the country.**
- **Inflation being measured by %change in the consumer price index (CPI)**
- **However, if GNP/GDP(PPP) per capita figures are being used, then this is no longer necessary as the differences in cost of living are already taken into consideration.**
- Compare the relative unemployment rates in each country
- **Indicator: %unemployed in the labour force**
- **Looking at those who are of working age willing and able to work but unable to find a job**
- **The ability of the economy to provide adequate gainful employment for the population is another important indicator of its performance. It may also indicate income inequality if unemployment is high and only those who are able to get jobs are benefitting from economic growth in the economy.**
- **Natural rate of UNN in a small country like Singapore is around 2-3% while for a bigger country would be 3-5%.**
- Compare the relative health of the countries' balance of payments
- **The relative health of a country's BOP indicates the country's ability to pay for its foreign transactions, including imports. This hence also indicates the likelihood of the country needing to borrow funds to fund its overseas transactions.**
- **Hence a healthy BOP is an important indicator when comparing countries' economic performances.**
- **For open economies, the net exports (X-M) is especially important. Countries with BOT surpluses(e.g. China, SG) generally regarded as showing better performance in trade relative to countries with deficits (e.g. USA). (Due to link to growth end of the day)**

### CONCLUSION

- Economists would use the above economic indicators of each country to compare the relative economic performance of the countries.
- However, using these indicators as the main determinant of a country's SOL does not give an accurate picture, as they do not indicate the non-material SOL of the residents amongst other limitations. Hence more holistic indicators need to be included.

Knowledge, Understanding, Application and Analysis	
L3 7-10	<ul style="list-style-type: none"> <li>Able to clearly explain 3 indicators of the economic performance of a country and explain why each are key to comparing economic performance across countries</li> </ul>
L2 5-6	<ul style="list-style-type: none"> <li>Analysis lacking in depth: fails to provide clear economic analysis linking to comparison between countries</li> </ul>
L1 1-4	<ul style="list-style-type: none"> <li>Conceptually weak description of economic performance indicators</li> <li>Answer is descriptive with conceptual errors</li> </ul>

b)

Dissect Question Using the 3'Cs'	
C – Command word	Assess: Consider in a balanced way the points for and against something
C – Concept (s)	Standard of living- material/ non material Limitations of using Economic performance as main indicator of SOL
C – Context	Singapore

#### INTRODUCTION

- Key words: **Standard of Living(Define)**, Economic performance, main indicator
  - Issue: Limitations of using Economic performance as main indicator of SOL
- Approach: This essay aims to assess the use of economic performance as the main indicator of SOL

## BODY

### Thesis:

Economic performance is a main indicator of SOL

- Economic growth and inflation rate (% change in Real GNP per capita)
- Unemployment rate
- Balance of payments in particular the Balance of Trade

- Economic performance is commonly used to indicate/ compare the material SOL of a country.
- Indicates change in value of goods and services enjoyed by an average person in the population. Increases in this are often taken to reflect an improvement in SOL.
- Ability to be gainfully employed and earn a living will definitely affect the SOL.
- Balance of Payments may not directly affect the average Singaporean's current SOL.
- However, the balance of trade and in particular how much imports Singaporeans get to consume can be a reflection of Singaporean's affluence, though Singapore is generally very dependent on imports, regardless of the degree of affluence.

<p>Anti-Thesis:</p> <p>Problems faced with the use of Economic performance as the main indicator of SOL</p>	
<ul style="list-style-type: none"> <li>• Increase in real NI may be unequally distributed and benefit only the minority</li> <li>• Components of the NI value that have increased may not affect/improve SOL. SOL only improves if there are more consumer goods and services for the average resident</li> </ul> <p>Changes in Non-material SOL are not reflected by the Economic performance indicators of a country</p> <ul style="list-style-type: none"> <li>• Changes in levels of negative externalities</li> <li>• Changes in hours of work and a more stressful lifestyle</li> </ul>	<ul style="list-style-type: none"> <li>- Indicators such as the GINI coefficient have been used to show that income inequality in Singapore is on the rise. This means that although real NI per capita has risen, only a minority of the population may have benefited from a rise in SOL. Hence increase in SOL may be overstated.</li> <li>- Economic growth in Singapore is significantly driven by exports and foreign direct investment which may not impact the current SOL of an average citizen directly For example, exports are consumed by foreigners and hence an increase in their consumption, does not directly affect the SOL of Singaporeans. Foreign direct investments in capital goods also do not directly benefit the average Singaporean. In fact, if more resources are diverted from producing consumer goods to capital goods, the current SOL of the average Singaporean may actually fall.</li> <li>• Other indicators of non-material SOL need to be taken into consideration rather than just economic performance.</li> <li>- Amount of negative externalities inflicted on society are not accounted for in economic performance. However, increases in production are often inevitably followed by increases in pollution and harm to the environment.</li> <li>- With increased industrialization, Singapore has definitely had to bear with more congestion and pollution too. Hence indicators such as the PSI index and other environmental indicators can be considered to include the impact on the environment and hence SOL too.</li> <li>- Economic growth and increased incomes often also mean longer working hours and more stress. Therefore again, SOL may be overstated with economic progress.</li> </ul>

### CONCLUSION

- Therefore, although economic performance is definitely a key indicator of the material SOL of Singaporeans, it may not be a holistic picture and other indicators, especially of non-material SOL are also needed to supplement it.
- Common indicators used include HDI and NEW which include not only take economic growth into consideration, but also consider other factors such as infant mortality, literacy rate, non-monetised transactions, etc, to provide a more holistic picture of the SOL of the average Singaporean.

### Knowledge, Understanding, Application and Analysis

<b>L3</b> <b>9-11</b>	<ul style="list-style-type: none"><li>• Able to address all the requirements of question with balanced coverage of indicators of both Material and Non material SOL</li></ul>
<b>L2</b> <b>6-8</b>	<ul style="list-style-type: none"><li>• Analysis lacking in depth: fails to provide economic analysis linking economic performance and other indicators to SOL</li><li>• Low L2- Largely accurate but “generic” theoretical answers with no examples</li></ul>
<b>L1</b> <b>1-5</b>	<ul style="list-style-type: none"><li>• Conceptually weak description of indicators of SOL</li><li>• Answer is descriptive with conceptual errors</li></ul>
<b>E2</b> <b>3-4</b>	<ul style="list-style-type: none"><li>• Justified judgement with suggestion of alternative indicators like HDI and NEW</li></ul>
<b>E1</b> <b>1-2</b>	<ul style="list-style-type: none"><li>• Mainly unjustified judgement on whether SOL will improve</li></ul>

## Suggested Answers to TYS 2013 CSQs

### TYS 2013 CSQ 1

Questions		
(a)	<b>What do the rising sales of own-label products from Aidi and Lidi (Extract 1), despite the fall in real disposable incomes, tell us about the nature of the products sold by these 2 stores</b>	[2]
	<ul style="list-style-type: none"> <li>Aidi and Lidi's sales increase despite a fall in real disposable income tells us that the products sold are inferior goods.</li> <li>Inferior goods are goods that have a negative income elasticity of demand which means demand moves in the different direction of income change, ceteris paribus.</li> </ul>	
	<b>Examiner's Report:</b> Some candidates did not give a full answer because while they stated that the rising sales of own label products from the 2 stores –despite the fall in real disposable incomes – meant that these products were inferior goods, they did not substantiate their answer with the data in the case study which indicated that the own-label products had negative income elasticity of demand. Some candidates incorrectly applied price elasticity criteria to classify the goods. In addition, some incorrectly reasoned that the income elasticity was between 0 and 1, and suggested that these products were necessary goods.	
(b)	<b>What would have been the effectiveness of a maximum price of 129 pence for petrol in the UK between Dec 2010 and August 2011?</b>	[2]
	In theory, the effectiveness of the max price is effective only if the actual market equilibrium price rises <b>above the</b> controlled price. With reference to Table 1, imposing a max price would have been ineffective before March 2011 because equilibrium price was below this. From March 2011 onwards the max price would be effective because the free market price would be established above this price.	
	<b>Examiner's Report:</b> The question asked what would have been the effectiveness of a max price of 129 pence for petrol if it had been applied in the UK between December 2010 and August 2011. Many candidates pointed out that it would have been ineffective before March 2011 because equilibrium price was below this. From March 2011 onwards the max price would be effective because the free market price would be established above this price. Some candidates did not exercise careful interpretation of the data and so assumed that the max price had been established.	
(c)	<b>Explain one possible reason why the average price of petrol in the UK in supermarkets is less than the average price in all outlets.</b>	[2]
	<b>2 possible explanation in theory:</b> <ul style="list-style-type: none"> <li>Supermarkets which operate on a larger scale of production could be passing on cost savings which they are enjoying due to internal economies of scale to consumers e.g. Discounts / lower price on bulk purchases of petrol.</li> <li>Supermarkets could be using a loss leader strategy to boost overall sales. Since petrol is not their core business, supermarkets could be selling petrol at below cost. The aim is to use it as a bait or promotional strategy to attract more customers to the supermarket to shop for groceries. The increased sales from their core business or groceries could more than make up for the losses incurred in selling petrol.</li> </ul>	
	<b>Examiner's Report:</b> The most popular reason provided to suggest why the average price of petrol in the UK in supermarket is less than the average price in all outlets was the fact that supermarkets that operate on a larger scale than all outlets would enjoy economies of scale. These cost savings could be passed on to customers in lower prices. Some candidates identified economies of scale as a possible reason for the lower prices, but failed to go beyond this. This superficial approach was not considered an explanation of the lower prices. Some did not do well in this question because they suggested possible reasons that could not be substantiated. For example, a large number of candidates claimed that the reason was that supermarkets receive a subsidy from the government. This was not accepted because there was no explanation provided to suggest why the subsidy might be granted, nor why only supermarkets might receive this subsidy.	



(d)	<b>Use the concept of Opportunity Cost to explain one effect on each of consumers, firms and the government arising from the fall in real household disposable incomes described in Extract 1.</b>	[6]
	<p><b>Effect or Impact on Consumers</b> A fall in real disposable income is expected to reduce consumers' purchasing power. Consequently, consumers have to make the choice of deciding how to spend their reduced incomes. If they decide to spend on purchasing cars they might have to sacrifice other consumption goods such as vacations or overseas holidays.</p> <p><b>Effect or Impact on the firms</b> A fall in real disposable income is expected to reduce firm's sales revenue. Consequently, firms have to make a choice of deciding how to spend on their reduced revenues on factors of production or inputs. For example, if they decide to spend on capital goods like machines, they might have to sacrifice the quantity of labour employed or vice versa.</p> <p><b>Effect or Impact on the Government</b> In the light of declining real disposable incomes, it is expected that tax revenue collected will fall and this might force governments to choose how they would spend these revenues. If they decided to spend on infrastructure, the opportunity cost would be other potential areas of government spending that would have to be sacrificed, such as welfare programmes or defence.</p> <p><b>Note: With reference to exam report the focus of this question is to test the ability to differentiate the different kinds of expenditure incurred by consumers (consumption goods), firms (factors of production) and government (public goods/transfers).</b></p>	
	<p><b>Examiner's Report:</b> <i>Although a large number of candidates began by explaining what opportunity cost meant, very few were able to apply the concept in the variety of contexts required. With reference to the government, for example, the declining incomes of households would result in declining tax revenues and this might well force governments to choose how they would spend these revenues. If they decided to spend on infrastructure, for example, the opportunity cost would be other potential areas of government spending that would have to be sacrificed, such as welfare programmes or defence. Similar choices face households and firms.</i></p>	
(e)	<b>Discuss whether the disadvantages to consumers from 'exorbitant prices' (Extract 3) outweigh any benefits they may gain from the existence of cartels.</b>	[8]
<b>Thesis</b>	<b>Explain the disadvantages of cartels (aka monopolistic exploitation of consumers)</b>	
	<p><b>Welfare losses</b> Exploit consumers by fixing prices above the competitive level. The aim is to earn high profits. This is alluded to in the extract "formation of cartels is a major contributing factor to the high prices". <i>Extract 3, para 2 – cartels have been colluding and charging exorbitant prices...exploit consumers.</i></p> <p><b>Accentuate Income Inequality</b> In the context of the data, the cartels in Kenya control the supply of many essential commodities, thus making it even worse for the low-income/ poor households in Kenya. Rich cartels owners are profiteering at the expense of the ordinary/ poor consumers, thus accentuating income inequality.</p>	
<b>Anti-Thesis</b>	<b>Potential benefits</b>	
	<p>In theory, cartels may use their supernormal profits or accumulated reserves to invest in expanding FUTURE supply capacity as well as R&amp;D. A good example is the oil industry. The large oil firms have the means to plough back their profits into buying drilling equipment or carrying out explorations to find new oil deposits underground or deep under the sea. Similarly, in the food industry, large food conglomerates can plough back their profits into investing in high-tech farming and thus increasing productivity and future supply capacity.</p> <p>Greater certainty of product supply under the settled market conditions established by the cartel i.e. Minimise unexpected disruptions in supply.</p>	

	<p><b>Potential internal EOS</b></p> <p>Possible for cartels to enjoy cost savings or EOS from producing on a big scale. However, whether this is an advantage to consumers would have to be evaluated against the fact that without competitive pressures there is no incentive for them to pass on the cost savings to consumers.</p> <p>Illustrate with diagrams comparing monopoly with PC market the difference in P and Q when there is no competition vs perfectly competitive.</p> <p><b>Note: Comparing monopoly with PC price/output is a <u>theoretical benchmark</u> for comparison. It does not imply that with no cartel, the market is perfectly competitive. So do state clearly it is for a proxy to compare cartel vs no cartel.</b></p>	
<b>Synthesis/Conclusion</b>	<p>In theory cartels might benefit consumers if they pass on cost savings to consumers and plough back some of their profits to fund the expansion of future supply capacity. However, in practise, there is no guarantee that they will do so, especially if there is no competitive pressure or threat of competition. Thus, in reality the disadvantages of cartels outweigh their potential benefits to consumers.</p>	
	<p><b>Examiner's Report:</b></p> <p><i>Most candidates were able to explain that firms in a cartel effectively act as a monopoly. Firms in a cartel agree to restrict output and raise price, reducing consumer welfare in the process. Most candidates also showed some awareness of the potential benefits of firms colluding in cartels. Those mentioned included the possibility of economies of scale through collaborative action and the greater certainty of product supply under the settled market conditions established by the cartel. Many also explained that the excessive profits enjoyed by firms in the cartel could be used to fund research and development with the range of positive effects that might be expected. Analysis provided was generally sound with most candidates showing a firm grasp of the theoretical underpinning to the discussion. Many candidates, however, did not then go on to provide evaluative comment, as they did not consider whether the disadvantages from exorbitant prices might outweigh the potential benefits mentioned.</i></p>	
<b>(f)</b>	<p><b>Discuss whether maximum price legislation such as that proposed in Kenya would be the most appropriate way of responding to falling real disposable incomes in the UK.</b></p>	<b>[10]</b>
<b>Thesis</b>	<p><b>Yes in view of rising cost of living due to rising commodity prices and stagnating wages are a concern for many households in UK.</b></p> <p>In UK, "rising commodity prices" (Extract 1, para 2) is one of the major causes of inflation and at the same time wages are stagnating. Similar to what the Kenya authorities did introduce price controls in UK to slow down the pace of rising prices of essential goods could help consumers especially the lower incomes cope with rising cost of living.</p>	

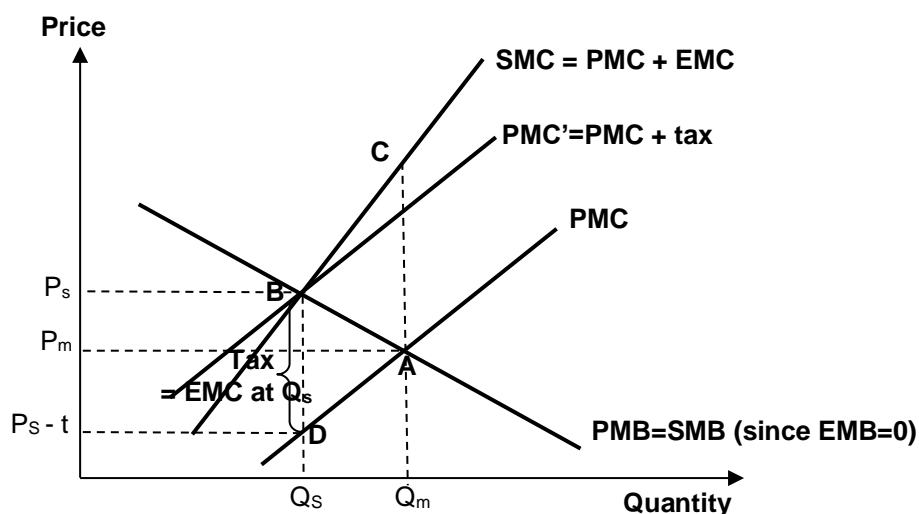
<b>Anti-thesis</b>	<p>However,</p> <p><b>Price control has major cost of implementation or negative side-effects</b> and is usually used only as a last resort.</p> <p>In the case of Kenya, the better solution is to get rid of the cartels. However, since the government lacked the ability to do that (Extract 3, para 4), it has no choice but to resort to implementing price control as a “substitute” for banning cartels. The implementation of price controls comes with major drawbacks:</p> <ol style="list-style-type: none"> <li>(1) It creates shortages (Extract 3, para 3) which usually mean consumers have to queue up for their ration. This is extremely inconvenient and inefficient way to allocate essential goods and services.</li> <li>(2) It encourages the emergence of black markets and profiteering by unscrupulous traders.</li> </ol> <p><b>Illustrate with diagram.</b></p> <p><b>UK can use other better less drastic alternative policies</b>          Compared to Kenya, UK government has no need to resort to such drastic measures because rising commodity prices is not due to cartels jacking up prices.</p> <p>Contextually, UK is experiencing mainly cost-push inflationary pressures. Hence, government can use various measures to curb cost-push inflation. Examples:</p> <ul style="list-style-type: none"> <li>• Cut petrol taxes (SR cost cutting measures)</li> <li>• Strengthen the currency: As a short term measure, the UK government can strengthen the currency to dampen import cost push inflation in order to curb inflationary pressures due to rising commodity prices but it will dampen the NX.</li> <li>• Anti-Monopolistic Policies: Moreover, the government can inject more competition into markets to drive prices down.</li> </ul> <p><b>Stagnant wages</b>          Raise productivity to make economy more competitive to stimulate growth so that wages can rise to catch up with inflation. Best approach to deal with the falling real disposable income or squeeze on purchasing power is to revitalised the UK economy so that it income can rise faster than the cost of living.</p> <p><b>In the long run, this is the most sustainable measure.</b></p> <p>In the short-run, subsidies for the production of basic commodities and expansionary fiscal and monetary policies to stimulate the economy and reverse the falling incomes.</p>	
<b>Conclusion</b>	<p>However, whilst price controls can be used as a stop gap measure to prevent prices of essential commodities from escalating beyond the reach of the common people like it is done in Kenya, it is in my view neither appropriate nor a sustainable measure in responding to falling disposable incomes in the UK. There are better and more appropriate measures such as raising productivity or using fiscal and monetary stimulus.</p>	
<b>Examiner's Report:</b>	<p><i>Most candidates showed knowledge and understanding of the advantages and disadvantages of max price legislation and many went on to suggest a range of alternative policies to deal with the falling real disposable incomes in the UK. These included policies as diverse as subsidies for the production of basic commodities and expansionary fiscal and monetary policies to stimulate the economy and reverse the falling incomes</i></p>	

## TYS 2013 CSQ 2

(a)	<b>Identify one injection and one leakage (or withdrawal) shown in the tables that would change if consumption became the “main engine of growth” in China in the future.</b>	<b>[2]</b>
	<p>In the tables, exports is an injection while imports is a withdrawal that would change if consumption become the main engine of growth in China in the future.</p> <p><b>Note: MUST use only information from the given tables.</b></p> <p><b>Examiners Report</b>  <i>Many candidates were able to identify examples of leakages and injections shown in the data. A small number, however, referred to investment as an example of an injection, but this could not be accepted because it was not shown in the tables. Others incorrectly suggested that GDP per capita was an example of an injection. A small number were careless and suggested that exports were a withdrawal and imports were an injection.</i></p>	
(b)	<b>Using a diagram, explain how new technology could increase the goods and services available to an economy.</b>	<b>[2]</b>
	<p><b>2 approaches are accepted: Shifting outwards of PPC or LRAS</b></p> <p>Technology plays a key role in expanding an economy's productive capacity due to an improvement in technology. Improvements in communication technologies including the use of emails; smartphones, web-conferencing reduce costs and increase the productive capacity for businesses. And outward shift of the production possibility has contributed to higher output of both consumer and capital goods with same amount of resources.</p> <p><b>Illustrate with shift in PPC with capital and consumer goods labelled on the Y and X axis.</b></p> <p><b>OR</b>          Explain using AD-AS framework – shift in LRAS resulting in larger Y.</p> <p><b>Examiners Report</b>  <i>Many candidates gave two acceptable approaches in response to this question. One approach was to provide a diagram based upon aggregate supply and aggregate demand showing the aggregate supply curve shifting to the right in response to the impact of new technology with increased goods and services available to the economy at the new equilibrium. A second approach was to provide a diagram based upon a production possibility curve and the impact of new technology was to shift the curve outward, again showing more goods and services available to the economy. Only a brief accompanying explanation was required for either approach, for example referring to the impact of the new technology on the productivity of labour or capital and this together with the diagram. Many did not do well here because the diagram they provided was in a micro context showing a demand and supply curve for an individual product. These candidates found it difficult to provide a meaningful explanation of the impact of new technology.</i></p>	
(c)	<b>With reference to the data, explain how you would expect the size of the multiplier to differ between the US and China.</b>	<b>[2]</b>
	<ul style="list-style-type: none"> <li>Only the average propensity to save (APS) and average propensity of import (APM) are given in Tables 2 and 6 respectively for US, China and Singapore.</li> <li>To determine the multiplier, we need MPT (marginal propensity to tax) as the multiplier is given by <math>k = 1 / (MPS + MPT + MPM)</math>.</li> <li>Based on the given data, APS and APM could be used as proxy measures for MPS and MPM to estimate the multiplier.</li> <li>In the given data, China has a relatively high marginal propensity to withdraw is approximately between 0.7 and 0.8 compared to USA where the marginal propensity to withdraw is between 0.3 and 0.24 from 2008 to 2010, even without MPT.</li> </ul>	

	<ul style="list-style-type: none"> <li>This implies that for every dollar of an increase in national income, there is a withdrawal or leakage of 70-80 cents in China and 30 cents to 24 cents in the US from 2008 to 2010. In addition, it is stated in extract 4, para 2, that China has an abnormally high average and marginal rate savings rates. Given the above information, the marginal propensity to consume in China could be much lower than USA (Extract 5) to create induced consumption. This means that we could expect the <b>multiplier in China to be smaller than in USA.</b></li> </ul> <p><b>Examiners report</b>  <i>This question was answered well by most candidates. Most showed good understanding of the factors that influenced the size of the multiplier and interpreted the information provided in the data to conclude that the heavier withdrawals in China meant that the size of the multiplier in the United States was likely to be much higher than that in China. Many candidates were able to question the validity of the data, pointing out that the information provided referred to the average propensities to save and import, rather than the marginal propensities that strictly are required to estimate the size of the multiplier in each economy. Others developed their explanations to suggest that information on marginal tax rates, which was not provided in the data, would also influence the size of the multiplier in each economy.</i></p>	
(d)	<b>Explain how China's competitiveness might be maintained if its exchange rate were allowed to appreciate.</b>	[4]
	<p>Any appreciation of Chinese currency, in theory, will lead to China's exports becoming less price competitive while its imports becoming cheaper than previously. To improve its price competitiveness in the face of rising yuan, China could reduce its cost of production through cheaper imported factor inputs. The extent of such cheaper factor imports influencing export competitiveness depends on the proportion of imported inputs that are incorporated in her exports. The larger the proportion of imported factor inputs in her exports, the greater is the probability of maintaining export competitiveness. However, exchange rate policy should be complemented with a higher productivity drive in the manufacturing sector to enhance export competitiveness. Higher productivity will ensure that even if the proportion of imported factor inputs is relatively low in exports, the cost of production will decline further as output per worker will increase. The main limitation of such a policy is that it will make exports of services less competitive as imported factor inputs will be less relevant to the cost of production. eg. banking and insurance services.</p> <p><b>Examiners report</b>  <i>A large number of candidates were able to explain that the rise in the value of the renminbi yuan would benefit those industries in China that relied upon imported factor inputs through lower costs and this would help to maintain competitiveness. Other candidates suggested that China should produce higher value goods and goods with lower price inelasticity of demand. Although most candidates were able to suggest the desired outcome of policies that aimed to maintain competitiveness, not all were able to give greater detail concerning how this might be achieved. Detail on policy was often lacking.</i></p>	
(e)	<b>Explain what the author of Extract 5 means by a "true price" and consider whether an indirect tax is the best way of ensuring that goods are charged at the true price.</b>	[8]
	<p>"True price" reflects the opportunity cost of producing a good to society, not just to consumers or producers only. It includes the cost/benefits of production of goods from the producers'/consumers' point of view as well as the "spill over effects" (external cost or benefit) to society. For instance, in the course of producing steel, the true price of producing steel depends on the private cost of production (producers' cost) and cost of damage to the environment as a result of pollution. In the case of negative externalities, the producer is in fact under-pricing his goods, as he is not concerned about the damage to the environment.</p> <p><b>Explain negative externality + tax as solution in details with diagram.</b></p> <p><b>Negative production externalities occur when the production of a good negatively affects the well-being of third parties who do not receive any compensation for that effect.</b></p>	

**Figure 1: Tax to internalise EMC from production**



- Market equilibrium is  $PMB=PMC$  at  $Q_m$  and the price is  $P_m$  but socially efficient level at  $SMB=SMC$  should be  $Q_s$  and  $P_s$  respectively. So the market has 'under-priced' the product.
- The imposition of **the tax equivalent to the EMC at  $Q_s$**  (distance  $BD$ ) results in an output that corresponds to the **socially efficient** level of output,  $Q_s$  and a true price of  $P_s$ .
- Also, if the tax is seen as payment for the use of the environment, there may be incentives to reduce pollution.
- The imposition of the tax moves the equilibrium to the socially efficient level where  $SMC = SMB$  because when the firm attempts to maximize profit now and produce at where  **$PMB=PMC'$** , the outcome will be  $Q_s$  which will be the socially efficient outcome, paying the "true price" for his product as the producer pays for the use of the environment. The externality has then, in a sense been **internalised** and, thus the "true price" for production is now taken into account by profit maximising firms.

### Limitations

Even if a government decides to impose a tax equal to marginal external costs, there will still be a problem of measuring EMC and apportioning blame. E.g. Damage to lakes and forests from acid rain has been a cause of major concern. How serious is that damage? What is the monetary cost? It could be impossible to fix the correct amount of indirect tax. If taxes are lower than the benefits accruing to a firm, it will be in the interest of the firm to continue polluting. It is also possible that each firm produces varying levels and types of externality and operates under different degrees of imperfect competition. Under such circumstances, it would be extremely difficult and prohibitive to impose a charge on every offending firm its own particular tax rate.

### Evaluation

Even with such limitations, many economists still endorse tax solution as it permits the markets to operate. It ensures firms bear the full social costs and benefits of their actions. It could also be adjusted in response to the magnitude of the problem. In addition, if firms are subject to taxes for polluting, they are encouraged to work out cleaner ways of producing goods.

Another way of arriving at "the true price" is by auctioning off transferable pollution permits to firms which discharge waste into the environment. This approach has its limitations too. One problem with permits is the need to determine the correct number of permits to auction off. Once the permits are owned by firms, it is difficult to withdraw the permits or reduce the number, even if the capacity is incorrectly assessed. As a result, the distorting marginal external cost of production (cost of permits) may not reflect the "true price" of production.

	<p>Governments too could take into account the “true price” of production through regulation. Where a negative externality exists, firms could be prohibited by law from producing more than the socially efficient output based on emission standards for factories. (e.g. a legal maximum on the amount of pollution that the firm can produce). Producers could also by law, place emission reduction devices in their factories to reduce pollution and adhere to strict control by the government over environmental pollution. Offending firms may be fined or even have their licences suspended.</p> <p><b>Stand/Judgement:</b> Whether to use indirect tax or permits or regulation to reflect the true price of production, it depends on the circumstances of production and the types of products. As mentioned, indirect tax is easier to implement if we are certain of the magnitude of EMC and if it is easy to localise the polluter. There are times regulations may be appropriate in working out the true price. But one must consider the problem of government failure as well as compliance cost in working out the “true price”.</p> <p><b>Note to tutors: Examiners expect students to highlight under-pricing of goods with negative externalities.</b></p> <p><b>Examiners report</b> <i>Candidates who did well showed a good understanding of the term ‘true price’ as explained in the data. They then went on to consider whether an indirect tax is the best way of achieving the true price in the market for goods. On the whole the concepts underlying this subject area appear to be very well understood in Centres. The answers provided were technically very adept, with good diagrams underpinning the explanations. Most candidates also included evaluative comment. One weakness amongst many scripts, however, was that diagrams often focused upon overproduction of goods with negative externalities rather than under-pricing of such goods.</i></p>	
(f)	<p><b>The data provides an explanation of two different policy approaches to generating economic growth. Discuss which approach you would recommend for Asian economies.</b></p>	[10]
	<p><b>Interpretation of question</b> This question requires you to weigh both approaches to economic growth and see whether they are appropriate to the nature and structure of Asian economies.</p> <p><b>Introduction</b> The data suggests sustainable economic growth policy as an alternative to consumption led policy. The issue is not which policy Asian economies should adopt. It all depends on the nature and structure of the economies in Asia. This essay attempts to weigh the arguments for and against both approaches and come to a judgement which model is appropriate to manufacturing and service economies like Singapore compared to economies still dependent on relatively on exports and foreign investment like China.</p> <p><b>Consumption-led growth policies.</b> One of the arguments for Asian economies to pursue consumption led growth policies was in the light of falling exports and competition for investment in countries like China. The economics behind this strategy is to increase marginal propensity to consume in the country so that any modest increases in injections will lead to a large multiplier effect.</p> <p>It can also mean making C a larger proportion to AD. Thus countries like China may thus have to boost consumption for future growth, using the Keynesian model of <math>C+I+G+X-M</math>.</p>	



Thesis (Arguments for consumption led growth)	Antithesis (Consumption may not lead to sustainable growth).
<p><i>Extract 4, para 4</i></p> <p>The plan to increase wages in the hope of increasing consumption, will lead to higher MPC and a larger multiplier effect. With several rounds of multiplier effect from any injections like I, G, X and autonomous consumption, the economy will maintain its growth momentum.</p>	<p>However, wage inflation will increase cost of production and will reduce a country's export competitiveness, unless it is accompanied by higher labour productivity. The increase in labour cost has already made an impact on China with some companies like Adidas moving to labour abundant countries like Vietnam. Profits of some companies have also been affected. Unless, there is improvement in productivity, any significant increases in wages to boost consumption will be a short-sighted policy, as foreign firms could relocate to other neighbouring countries where cost of production is relatively lower than China.</p> <p>The cultural factor for saving in Asian homes may not increase MPC nor k effect. This is another argument against wage increases to increase consumption. In many Asian countries, including China, the MPC is less than 0.5. That will suggest any increase in wages will not be able to have a larger multiplier effect, unlike USA or UK, to sustain growth.</p>
<p><i>Extract 4, para 5</i></p> <p>Appreciation of currency will reduce imported inflation which in turn will negate the rise in price of exports due to the appreciation if imported factor inputs constitute a large proportion of production cost.</p> <p>Also, domestic inflation might fall if imported goods could relieve domestic shortages and price increases of a basket of goods.</p>	<p>Appreciation will undermine export competitiveness and affect BOT surplus if Marshall Learner condition, i.e. <math>PED_x + PED_m &gt; 1</math>.</p> <p><b>Evaluation:</b></p> <p>However, as mentioned, appreciation does contribute the cheaper imports and thus negate the rise in price of exports and assuming an increase in productivity, appreciation may not result in China losing export competitiveness.</p> <p>As appreciation increases imports of consumer goods, and this will lead to leakage from circular flow of income and slow down growth. However, imports could increase competition among local producers in China to be efficient and relieve the pressure from developed countries for China to reduce its substantial current account surplus against EU and USA.</p>
<p><i>Extract 4, para 6</i></p> <p>Improved tax deal and social security will reduce the need for large savings of the community and promote consumption. The argument is that a change in consumption will increase marginal propensity to consume and increase its multiplier effect, as well as increase its autonomous consumption.</p>	<p>Tax deals and social security might lead to a budget deficit in the future, probably lead to debt problem and slow growth. Appropriate fiscal policy and management of reserves may reduce the threat of future budget deficits and international debt problem.</p>

**An alternative suggested model is sustainable economic growth.** It is hinged on environmental constraints. The argument is that growth should take into account sources of market failure in the course of producing goods and services. Inevitably, such an approach will slow down growth when taking into account the social cost of production of goods and services. Cost of production of goods will then reflect negative external marginal cost as well as private marginal cost of production. To evaluate whether such a model is appropriate for Asian economies, one would need to weigh the arguments for sustainable economic growth.

According to Extract 5, if the Asians start to consume like the Americans, there will be huge implications to the environment and leading to significant depletion of natural resources.

#### **Adopting an environmentally sustainable economic growth policies model**

<b>Thesis</b>	<b>Antithesis</b>
True pricing of goods/services will reflect the true cost to society, e.g. prices of goods/services will reflect negative externalities through taxes. It is an attempt to reduce resource misallocation to maximise consumers' and producers' surpluses and eliminate market failure.	It is difficult to calculate the true cost of goods/services as EMC is difficult to calculate. Any variation between EMC and taxes to correct market failure will lead to further misallocation of resources. True pricing in the article should also consider positive externalities so that there is no under consumption.
Imposing a quota or a ban on the use of resources. E.g. fisheries, forest management. It is appropriate as a conservation policy. Also, it is a good interim measure to ensure sustainability of resources.	Attempts to regulate markets in the name of environmentally sustainable policies might lead to government failure. How do you regulate resources (e.g. fishery management) beyond national jurisdiction? E.g. blue fin tuna fishing in Southern Oceans.

#### **Judgement/Stand**

- Based on the above arguments, Singapore could adopt economically sustainable growth in view of land and labour constraints. It could increase its growth by making the best use of its limited available resources for higher value added industries and services. In fact its growth path has been one where externalities like pollution has been factored in the production process to a large extent so as to ensure resources are efficiently used. In addition, the structure of its economy is one where manufacturing sector assumes only about 20% of its GDP with services takes up 66% of its GDP. Furthermore, as a small and open economy, consumption led growth is not an option for two reasons. First, its MPC is small as there are high leakages in savings and imports in Singapore.
- For countries like China, consumption led growth policy has been adopted in the face of declining economic growth as a result of slowing down of exports and foreign investment. Such a policy will address some macro-economic goals like unemployment, domestic inflation and economic growth. The vast untapped domestic resources and large domestic market have facilitated such a strategy.
- The arguments that have been outlined above show that such an approach has both merits and demerits. Such a policy may be appropriate in the interim to maintain growth and employment, despite its limitations. However, in the long run, China too has to turn to a sustainable economic growth model in the face of rising domestic factor prices (e.g. wages) and new trade rules. Such a sustainable policy through working out true prices will better allocate resources. That means prices of goods and services will reflect internalisation of negative externalities, although it might be difficult to address inequitable income distribution as inflation may creep in.

### Conclusion

In conclusion, consumption led growth policy is an interim approach in the context of China, given the size of the domestic market and the problem to overcome the slowdown in exports and foreign investment. It cannot be a policy prescription even for large and less open economies in the long run. Sustainable growth will soon take precedence to consumption led growth strategy as rising resource prices and new international trade rules take root. For small and open economies like Singapore, the aim to maximise existing resources or to optimise existing resources, has resulted in sustainable economic growth policy.

### Examiners report

*The data provided explanations of two broad policy approaches to stimulate growth as the export and investment-led growth model that had been relied upon in China becomes less appropriate in the 21<sup>st</sup> century. One could be described as **consumption-driven** and is sometimes called the Western economic model. The alternative is to strive for **environmentally sustainable growth** policies that reject consumption-led growth and suggest maintaining resources for future generations through rules on resource use and the establishment of true prices that reflect the full social cost of production. Candidates were able to identify and show sound understanding of the two approaches, and then to consider the advantages and disadvantages of each and offer evaluative judgement to suggest which approach would be recommended for Asian economies.*

*Some candidates did not comprehend the data sufficiently clearly and assumed that the two approaches available were variations of the consumption-led approach. This was a serious misconception that prevented a full consideration of the options available to Asian governments.*

*Such approaches typically stated that the alternative policy approaches were to push up wages or allow the exchange rate to appreciate. These candidates did not examine fully the options in broad terms. Some candidates showed a firm grasp of the two broad approaches and then considered which might be more appropriate. In arriving at a judgement they relied upon the data and sometimes their knowledge of the structure of Asian economies. For example, some explained that a consumption-driven approach was likely to be **unsuccessful because of the Asian culture of thrift that meant that the multiplier would be small and ineffective**. Others pointed out that there was considerable variation in the structure of Asian economies, so that the same policy approach might not be appropriate for all Asian economies. Some examined the data and concluded that a restrained approach to growth was unfair for Asian economies when the GDP per capita in China, for example, was so far behind that of the United States and slowing growth meant that the standard of living in Asian economies would stay much lower than that in the West for years to come. A large number of candidates left insufficient time available for this question.*

## 2013 A Level Q1

Economics assumes rational decision-making by consumers, firms and government.

- (a) Explain what is involved in rational decision-making by consumers and by firms. [10]
- (b) Discuss whether rational decision-making by consumers, firms and government always leads to an efficient allocation of resources. [15]

### Schematic Plan

INTRODUCTION	
BODY	
Rational decision-making by:	
Consumers	Firms
<i>How to decide</i> <ul style="list-style-type: none"><li>- The self-interest of consumers revolves around <b>maximizing the consumer surplus</b> from the consumption of goods and services, given their <i>limited disposable income</i>.</li><li>- Thus, consumers are constrained by their <i>ability and willingness to pay for goods and services</i>.</li></ul>	<i>How to decide</i> <ul style="list-style-type: none"><li>- The self-interest of firms revolves around <b>maximizing the producer surplus</b> derived from the sale of goods and services, given cost constraints.</li><li>- Thus, producers need to decide <i>What to Produce, How to Produce and For Whom to Produce</i>, given the consumers' <i>ability and willingness to pay</i>.</li></ul>
CONCLUSION	

**\*Note that the alternative approach is to use the marginal cost vs marginal benefit approach**

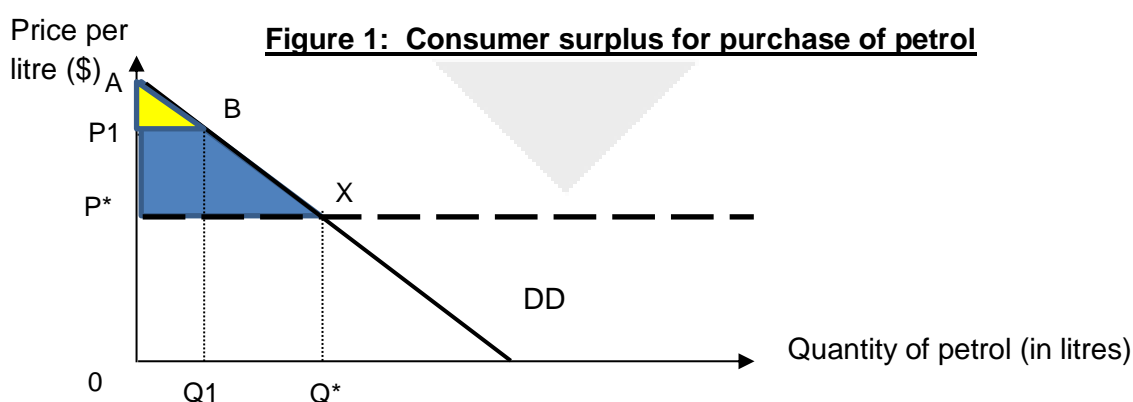
## INTRODUCTION

Key Words	In economics, the ultimate aim for <b>rational decision-making</b> entails maximising consumer surplus for the consumers and maximizing producer surplus for the firms (or producers).
Issue & Approach	<p>The process of rational decision-making by consumers and firms requires "thinking at the margin". That is, a rational economic agent would assess whether there is additional consumer surplus or producer surplus to be gained to decide whether to increase/decrease consumption or production.</p> <p>In part (a) of this essay, what is involved in rational decision-making for consumers and producers will be explained.</p>

## BODY

### Rational decision-making by Consumers

- Rational consumers value each unit of good or service that they are able and willing to pay, according to their perceived satisfaction (utility) from consuming that unit of good or service. Based on this principle, the effective demand curve for a good can be constructed as shown in Fig 1 (DD). There are two criteria for effective demand for consumers. Ability to pay has to be backed by sufficient purchasing power, which is derived from limited disposable income. Willingness to pay depends on the consumers' tastes, preferences and degree of necessity for the good or service.
- Rational consumer decision-making can be analysed using the concept of consumer surplus. Consumer surplus refers to the difference between what consumers are willing to pay for a good and what they are actually charged for it.
- As long as the price consumers are prepared to pay exceed the price they are charged, additional consumer surplus is gained. Thus, they will continue to buy additional units as long as they gain additional consumer surplus. But as more units are bought, consumers will experience diminishing satisfaction (utility). Consequently, they are prepared to pay less and less for each unit. The Rational consumers will stop buying until no further consumer surplus can be gained. Thus, the optimum level of satisfaction has been achieved.



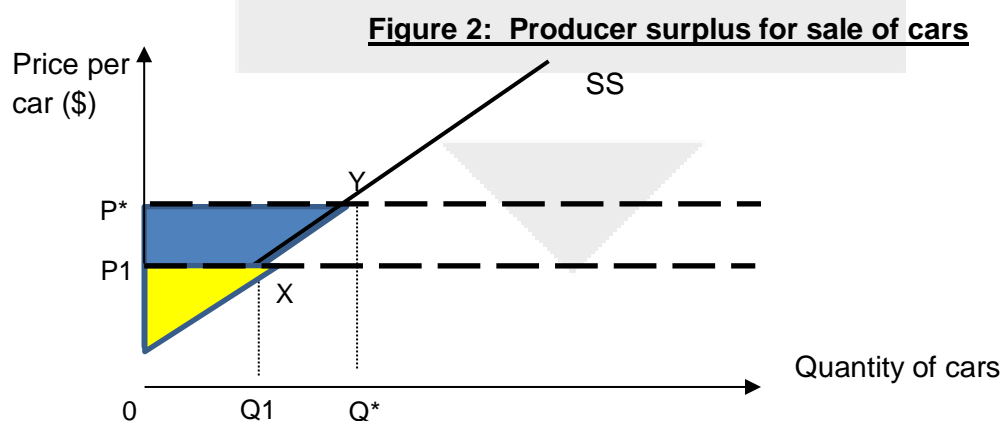
- The process of maximising consumer surplus can be shown graphically in figure 1 above. Let us take the case of a driver's annual purchases of petrol. The current price is  $OP^*$  per litre. If a driver were to use just  $OQ_1$  litres of petrol a year, he would use them

for very important journeys, like for work, for which no convenient alternative exists. For such trips, he is prepared to pay up to \$0P1 per litre. For 0Q1 litres, the additional consumer surplus is thus shown by area ABP1.

- As the driver consumes more petrol, additional litres give less and less satisfaction as less important journeys are undertaken. His additional consumer surplus will reduce gradually. By the time, he gets to 0Q\* litres, there is no additional consumer surplus to be gained.
- His total consumer surplus is at its maximum. He thus buys 0Q\* litres of petrol. Therefore, consuming at 0Q\* maximizes consumer surplus, which is represented by the area ABP\* under the demand curve (DD) and above the equilibrium price, 0P\*.
- The above analysis for the rational decision-making by an individual consumer can be generalised for decision making for consumption of any goods in the context of a market.

### **Rational decision-making by Producers**

- Rational producers set the minimum price for each unit of good or service that they are able and willing to sell, according to the additional (marginal) cost of from producing that unit of good or service. Based on this principle, the supply curve for a particular good can be constructed as shown in Fig 2 (SS).
- Rational producer decision-making can be analysed using the concept of producer surplus. Producer surplus is the difference between the actual price charged in the market and the price at which a producer is willing and able to put up the good/service for sale. The Rational producers' aim is to maximise producer surplus, which will give them the incentive to produce those goods/services that can fetch higher prices.
- As long as the price producers are actually receiving from additional units of goods sold exceed the price at which a producer is willing and able to put up them for sale, additional consumer surplus is gained. Thus, producers will continue to sell additional units as long as they gain additional producer surplus. But as more units are produced and sold, producers will encounter rising additional (marginal) costs. Consequently, they are prepared to charge higher and higher price for additional units sold. The Rational producers will stop selling when no further producer surplus can be gained.



- The process of maximising producer surplus can be shown graphically in figure 2 above. Producer surplus is approximately represented by the area under the equilibrium price and above the supply curve.

- Figure 2 above shows that initially, consumers pay a price of  $OP_1$  for each car for  $OQ_1$  of cars. Car makers respond to this by channelling resources towards the production of  $OQ_1$  number of cars.
- For  $OQ_1$ , the additional producer surplus is thus shown by area  $OP_1X$ .
- When the price of cars is increased from  $OP_1$  to  $OP^*$  (say due to increase in demand for cars), profit-maximising producers respond to the price signal by channelling more resources towards the production of more cars to meet the shortfall.
- By responding to the higher price for cars to from  $OP_1$  to  $OP^*$ , the producer surplus increases, which is beneficial for the producers to area  $OP^*Y$ .
- By the time producers gets to produce  $OQ^*$ , there is no additional producer surplus to be gained. Their total consumer surplus is at its maximum.
- Therefore, producing at  $OQ^*$  (with price at  $OP^*$ ) maximizes producer surplus, which is represented by the area above the supply curve (SS) and below the equilibrium price,  $OP^*$ .
- The above analysis for the rational decision-making by producers of cars can be generalised for decision making for output of any goods in the context of a market.
- Assuming that producers are profit-maximising, they would use the **least cost method of production and be productive efficient.**

### Conclusion

As a result of **rational decision-making**, consumers and producers maximize their consumer surplus and producer surplus respectively.



**(b) Discuss whether rational decision-making by consumers, firms and government always leads to an efficient allocation of resources. [15]**

**A simple schematic plan:**

<b>INTRODUCTION</b>
<b>BODY</b>
<b>Thesis: Rational decision making by stated economic agents leads to an efficient allocation of resources</b>
<b>Anti-thesis: Rational decision making by stated economic agents MAY NOT lead to an efficient allocation of resources</b>
Synthesis
<b>CONCLUSION</b>

### **Introduction**

Theoretically, the rational decision making by the economic agents always ensure that the allocation of scarce economic resources is efficient. However, in reality, the mechanism does not always achieve economic efficiency. The essay will discuss how rational decision making may not always achieve economic efficiency in resource allocation.

### **Thesis: Explain how Rational decision making by stated economic agents leads to an efficient allocation of resources**

As shown in part (a), demand and supply analysis can illustrate how economic efficiency may be achieved when producers and consumers exercise rational decision-making. The conditions necessary for this outcome are as follows:

- Price act as a **signal** between consumers and producers to allocate scarce resources
- Goods and services are produced according to consumers' willingness and ability to buy, thus it reflected consumers' preferences.
- These preferences are transmitted to producers; who used the most efficient way (least cost) to produce these goods and services.
- Price mechanism also ensures productive efficiency as it assumes the producers will use the least-cost production techniques, avoiding wastage of resources. (productive efficiency (min LRAC) can be achieved in a PC market.)

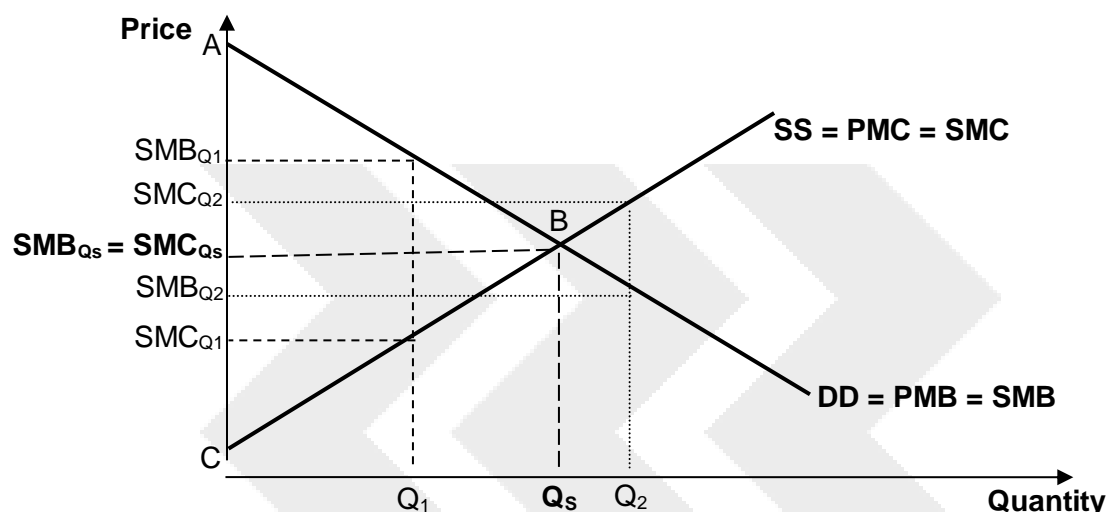
Under assumption of perfect competition (i.e. with no market dominance) and where there is no externalities:  $DD = PMB = SMB$  and  $SS = PMC = SMC$

- ➔ Allocation of resources is **socially efficient** (socially desired) in a market economy when the Social Marginal Benefit (SMB) = Social Marginal Cost (SMC)
- ➔ This means that the additional benefit of producing/consuming one more unit of good is equal to the additional cost incurred in producing/consuming one more unit of the good. Social welfare is thus maximised. Illustrating this diagrammatically:

**Due to time constraint, candidates probably will not have time to give details of the following but must move on to sources of market failure.**

**Revision: Detailed explanation how PM leads to socially efficient output.**

**Figure 1: Socially Efficient level of a Good using marginalist principle**



- At  $Q_s$ ,  $SMB = SMC$ . Hence the quantity of good X produced is socially efficient and social welfare is maximised. I.e. An allocative efficient amount of resources are used to produce the socially desirable quantity of Good X.
- Why is social welfare maximised at  $Q_s$ ? Let's see what happens if quantity is less or more than  $Q_s$ . Our analysis below is based on the **marginalist principle**
- At  $Q_1$ ,  $SMB_{Q_1} > SMC_{Q_1}$ . Thus society values an **additional** unit of Good X more than the **additional** cost that will be incurred in its production. And this is the situation faced for any quantity of Good X that is less than  $Q_s$ . Hence, social welfare is not maximized and there is room for improvement in social welfare if the quantity of Good X is increased until  $Q_s$ . So at  $Q_1$ , there is underproduction/consumption of the good.
- At  $Q_2$ ,  $SMB_{Q_2} < SMC_{Q_2}$ . Thus society values an **additional** unit of Good X less than the **additional** cost that will be incurred in its production. And this is the situation faced for any quantity of Good X that is greater than  $Q_s$ . Hence, social welfare is not maximized and there is room for improvement in social welfare if the quantity of Good X is decreased until  $Q_s$ . So at  $Q_2$ , there is overproduction/consumption of the good.
- Thus, social welfare will be maximised when output is at the socially optimal level  $Q_s$  where  $SMB = SMC$ . At  $Q_s$ , there will be no more under-production/consumption or over-production/consumption. In this case, the social welfare generated is the area ABC, the sum of the consumer and producer surplus.

**Anti-thesis: Rational decision making by stated economic agents MAY NOT lead to an efficient allocation of resources**

In a complex, uncertain environment, agents have imperfect knowledge; they are not able to predict the consequences of their actions. Without knowing all the information, it is unrealistic to expect price mechanism to achieve efficiency in resource allocation.

Explain the factors that lead to the failure of price mechanism to achieve efficient allocation of resources involving consumers, producers and government\*

- ⇒ Externalities
- ⇒ Public Goods
- ⇒ Monopoly power
- ⇒ Imperfect information

*\*Explain first two sources of market failure in details and one more briefly. For externalities, due to time constraint again, you should elaborate on one type, be it positive or negative and briefly mention the other.*

*\*Briefly mention one possible scenario of government intervention may NOT necessarily lead to a more efficient outcome e.g. over-tax / under-tax (government failure)*

**Conclusion**

Rational decision making by producers and consumers can lead to an efficient allocation of resources under several strict assumptions, which usually do not hold in reality. This means that there is often room for government intervention to improve resource allocation. However, the government often suffers from imperfect information too, and hence it can also make things worse (government failure). In many cases, societies may need to make hard choices between accepting some form of market failure versus government failure.

## 2013 A Level Q2

The Urban Redevelopment Authority (URA) announced that prices of private residential properties in Singapore rose by 1.3% in the third quarter of 2011, but the rise in the prices has been slowing for eight consecutive quarters. At the same time it reported that the total supply of new private residential properties nearing completion was at a record high.

Source: <http://www.ura.gov.sg/pr/text/2011/pr11-135.html>, accessed 28 October 2011

Discuss the different supply and demand factors and their likely importance in determining the reported changes in the prices of private residential properties in Singapore. [25]

### Dissecting question

There are two parts to consider in this essay. The first part is to explain the demand and supply factors/determinants (PTIDE and CPPSE), and apply them to the context of private residential properties in Singapore.

The second part is to discuss and consider amongst the different demand and supply factors, which are the ones that are likely to be more important that have influenced the price outcomes: (1) the rise but slowing down of prices for 8 consecutive quarters since end 2009; and at the same time (2) total supply of new private residential properties nearing completion at record high.

Changes in the prices of private residential properties in Singapore can be due to demand and/or supply factors. In this case:

1. Prices of private residential properties **rose**;
2. **BUT** rise in prices has been **slowing for 8 consecutive quarters** → *slowing since end 2009*
3. **AND total supply** of new private residential properties **nearing completion** at **record high**

### Detailed Suggested Answers

<b>Introduction</b>	
<b>Key words:</b>	The decisions of both buyers and sellers in the market for private residential properties affect demand and supply thus impacting equilibrium prices.
<b>Issue:</b>	Prices for private residential properties rose but the rate of increase has been slowing down since end 2009 in Singapore.
<b>Approach:</b>	This essay seeks to explain, using the demand and supply framework, the various factors affecting demand and supply and how they have resulted in rising prices of private residential properties in Singapore. Assuming that prices of such properties are set by the free market, the recent rising trend in prices could be due to shifts in the demand curve and/or supply curves. The elasticity concepts of YED, PES and PED are also relevant and useful in explaining and determining the observed price changes in the market.
<b>Body</b>	
<b>Demand Factors</b>	
<b>Income of Consumers</b>	
State	The factor that affects demand is <b>income</b> of consumers.
Elaborate &	Continuous growth throughout the years after the economic recovery in 2009 meant that the incomes of the people continue to rise in Singapore. As the

Exemplify	incomes of consumers rise, purchasing power increases; more consumers are now willing and able to pay for private residential properties, ceteris paribus. Many individuals can now switch from renting to home ownership, or upgrade to bigger and private property. The demand for private residential properties hence increases, as they are considered as normal goods (or even luxurious goods due to the quality and prestige of having a private property) with a <b>high positive YED (YED&gt;1)</b> and hence demand increases more than proportionately and price rose. The greater the YED the greater the extent demand curve will shift to the right as a result of higher incomes/affluence.
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### Expectations/Speculation

State	There is an important speculative element in the demand for property.
Elaborate & Exemplify	Buyers often base their current demand for property on expectations of future price changes. The trend of rising house prices encourage speculation and falling house prices discourage speculative buying. Soon after the recovery from the Global Financial Crisis, buyers expect prices to rise and see this as an investment opportunity. They will buy now and sell in the future for price increases to earn a profit.

### Changes in demographic

State	Influx of new immigrants/rise in number of permanent residents has resulted in a rise in demand for property.
Elaborate & Exemplify	Population or demographic factor is a key determinant of demand. One must not forget that consumers are people who make up the population of a country. Any increase in population size could potentially boost demand for goods and services in the market. Over the years, the Singapore government has relaxed the immigration law to attract more foreigners to become permanent residents in here. The population rose to 5.4 million increasing the demand for housing, including private property.

### Price of Related Goods (HDB flats)

State	Another determinant of demand in Singapore is the price of related goods such as HDB resale units (by the HDB upgraders) and rental of private residential properties in Singapore as well as properties in other countries (for investment purposes).
Elaborate & Exemplify	There has been a rise in prices for HDB resale (by the former) and rental units (by the latter) due to a supply crunch following a slowdown in building during periods of weaker economic growth. Since these resale units and rental units are considered as substitutes of the non-landed private residential properties with $CED > 0$ , this caused the demand for private residential to rise as consumers switch from the more expensive HDB resale and rental markets to private residential properties market.

The above four factors have resulted in **huge rise in demand and thus price.**

**Note: Need to elaborate only on 3 factors under time-constraint.**

The extent of the change in price can be explained using price elasticity of supply.

### PES factor – is a contributory factor

Supply of housing tends to be price inelastic as it takes a longer time to respond to increase prices. This is because of time lags and legal complexities and, in the case of new-builds, the difficulty of obtaining planning permission, hence the ease of response by increasing quantity

supplied due to price increase may not be so readily available.

So when demand increases, **price will increase significantly and more than proportionate compared to quantity.**

**However, the demand has risen in a slower rate recently due to property cooling measures introduced by the government and as a result, slowed down the growth in prices.**

### Government Policies

State	Property cooling measures by URA/ MAS
Elaborate & Exemplify	<p><i>List of cooling measures:</i></p> <p><b>2010</b></p> <ul style="list-style-type: none"> <li>▪ <i>Seller's Stamp Duty was introduced</i></li> <li>▪ <i>ownership of both Housing Development Board (HDB) flats and private residential properties within a minimum occupation period (MOP) of five years has been disallowed, including ownership of overseas properties → this prolonged the 'upgrading' cycle</i></li> <li>▪ <i>lowering loan-to-value (LTV) limit from 80% to 70% for second properties</i></li> <li>▪ <i>increase the minimum cash payment from 5% to 10% of the valuation limit for buyers with one or more outstanding housing loans</i></li> </ul> <p><b>2011</b></p> <ul style="list-style-type: none"> <li>▪ <i>Seller's stamp duty rates were further raised</i></li> <li>▪ <i>Lower the LTV limit from 70% to 60%</i></li> </ul> <p><b>Note: There is no need of specific names and details of the policies. Rather, the purpose and impact of such cooling measures to reduce demand by reducing the purchasing power and also reducing the profitability of 'flipping' the properties.</b></p>

**Another key reason to slowing down of the prices is due to an overall rise in supply.**

### Supply Factors

#### No of producers

State	Number of private residential property developers in the market.
Elaborate & Exemplify	<p><u>Profitability</u></p> <p>In theory, new firms are attracted into the industry by the prospects of making good profits. As economic prospect in Singapore recovered and improved in 2010 and property prices continue to increase, private property developers expect that it will be lucrative to enter into the market to bid for land sites as they will be able to make huge profits, leading to an increase in supply of private residential properties.</p> <p><u>Government Policy</u></p> <p>Moreover, in an effort to cool the property market, government released more land sites to ensure there continues to be an adequate supply of housing to meet demand, this encourages new firms to enter the industry.</p>

#### Cost of Production

State	Another factor that affects supply is the cost of production of the developers.
Elaborate &	<p><u>New and better technology</u></p> <p>With the adoption of newer building technology such as 'pre-fabrication' and</p>

Exemplify	<p>the use of new building materials which improves productivity, more projects could be developed at a lower unit cost and at greater speed. Thus increasing supply.</p> <p><b>Evaluation</b></p> <p><u>Rising labour costs</u></p> <p>More projects bid up factor prices, the higher labour and building costs add on to the higher cost of production. Higher cost curtails the supply in the market and decrease in supply.</p> <p>These two factors have opposite impact on supply. The net effect will depend on which factor has a greater impact on supply.</p>
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**Stand: Overall, based on the stimulus, supply still increase and that will lead to a fall in price.**

The extent of the change in price can be explained using price elasticity of demand.

#### **PED factor**

Demand for private housing tends to be price elastic as it takes up a larger proportion to income and also there are close substitutes like HDB flats and rental apartments.

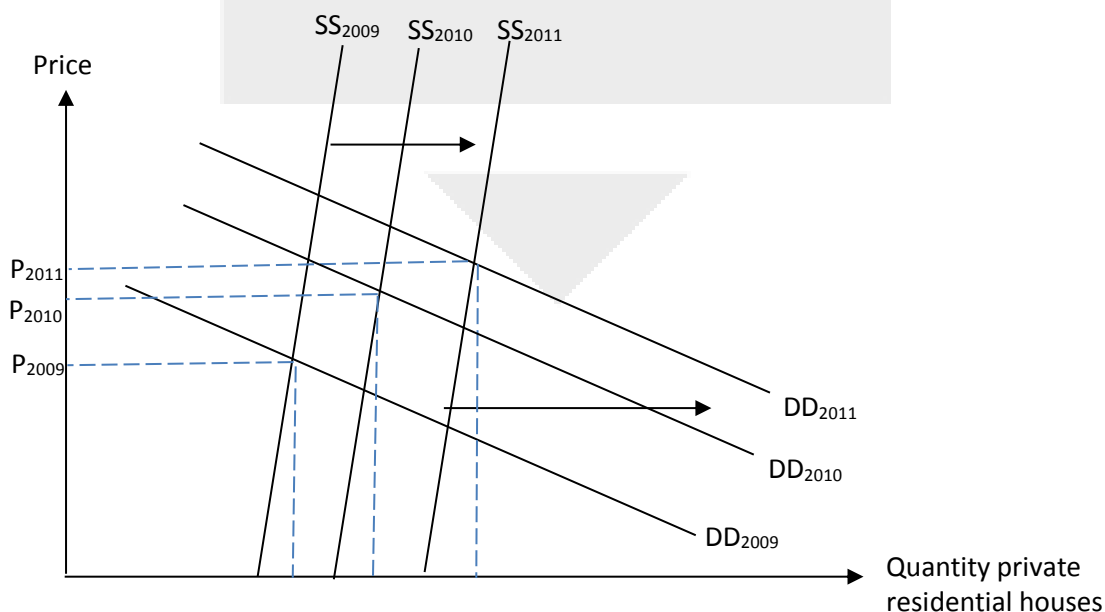
So when supply increases, **price will decrease less significantly and less than proportionate compared to quantity.**

#### **Overall stand of changes in demand and supply:**

**Since price is rising at a slower rate, demand has increased more than supply.**

#### **Combined analysis of DD and SS using DD-SS diagram**

Figure 1: Market for private residential properties in Singapore



**2009 – 2010**



Based on the context of the question and from above analysis of the factors, it is clear that demand for private residential properties in Singapore rose after 2009 with the economic recovery of Singapore following the global financial crisis causing the demand curve to shift rightward from  $DD_{2009}$  to  $DD_{2010}$  over a price inelastic supply curve, this will lead to a relatively greater initial rise in price as shown by  $P_{2009}$  to  $P_{2010}$  as shown in Figure 1.

The increase in the number of new private residential property projects shifts the SS curve to the right from  $SS_{2009}$  to  $SS_{2010}$  over a relatively price-elastic demand. However, it is also noted that the extent of the rightward shift in the SS curve will not be drastic as there is an opposite leftward push arising from the rise in cost of production (rising labour costs). Hence the supply curve shifts rightwards by a smaller extent as compared to demand.

Combining the two shifts in the DD and SS and the relative price elasticity of demand and supply, price of private residential property increases from  $P_{2009}$  to  $P_{2010}$  as shown in Figure 1.

#### **2010-2011: Slowing down of price increase subsequently**

In the following year, though DD has continued to rise, however, the extent of the rightward shift is no longer as large as before. This is so because of the cooling measures implemented by the government taking into effect, dampening the demand. This is depicted by the shift of demand curve  $DD_{2010}$  to  $DD_{2011}$  in Figure 1.

There is still continued increase in the number of projects in Singapore with the increasing numbers of new developers completing their projects.

But the extent of the rightward shift due to the strong demand factors continued to exceed the rightward shift in SS curves as mentioned in the stimulus, prices are still rising though at a slower rate. This is seen by the continued increase in prices of private residential properties but at a slower rate, from  $P_{2009}$  to  $P_{2010}$  to  $P_{2011}$ .

#### **Conclusion:**

Whilst there are demand factors as well as supply factors that exert both upward and downward pressures on prices, the fact that prices increase but slower subsequently, suggests that the following demand factors play a relatively more important role in propping up prices:

- Growing affluence amongst local and foreign clientele and the high positive income elasticity of demand for private residential properties.
- Moreover, Singapore is an attractive location for investment for its strong economic fundamentals and good economic, social and political management, the quality living environment it offers and its strategic location within a few hours' flight from the major cities of Asia.

In conclusion, the above demand factors are relatively more important because if they were not strong enough, prices would likely have fallen on account of supply of new private residential properties nearing completion was at a record high.

#### **More recent situation in the housing market (f.y.i.):**

The cooling measures have been effective in curbing speculative demand so much so that the private housing has seen slow decrease in prices.

In addition to the cooling measures, the anticipation that US will raise interest rates and hence also raising the interest rates in Singapore has affected the estimated affordability of future mortgage payments and hence further curb demand for private housing.

### **2013 GCE 'A' Level Paper 2 Q3**

**'Recessions put weak firms out of business whilst strong firms use a recession to become more efficient'**

**(a) Explain the relevance of different types of cost in the decision of a firm to close when faced by a fall in the demand for its product. [10]**

**(b) Discuss the extent to which firms faced by high levels of competition are more vulnerable to closure in recession than firms in less competitive industries. [15]**

#### **Suggested Answers (a)**

##### **Introduction**

- In economics, there are 2 different types of cost, namely the fixed cost and variable cost.
- Total cost (TC) = Total fixed cost (TFC) + Total variable cost (TVC)
- A firm will stay in the industry if it is earning at least normal profits. However, when it is earning subnormal profits say due to a fall in demand, it will have to decide whether it should stay or exit the market.
- And this decision will be made based on whether its revenue can cover its variable cost and the details shall be elaborated in this essay.

##### **Body**

##### **(1) Define and exemplify fixed and variable costs**

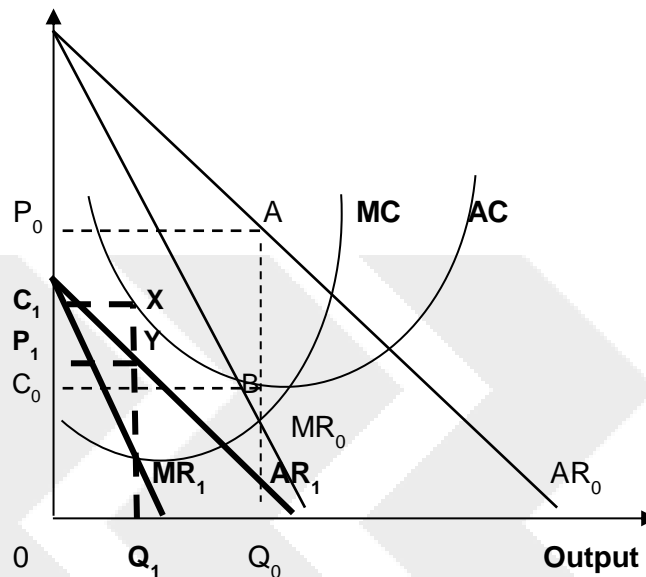
<b>Fixed Cost</b>	<b>Variable Cost</b>
Fixed Cost is cost that does not change with level of output and is already incurred when production is zero.	Variable Cost refers to cost that varies with output and is only incurred when production starts.
<b>Examples:</b> The initial capital outlay even before production of a single unit. It is a lump sum that needs to be spent such as, on tools and equipment before production process can take place – this is also known as sunk cost in which money pumped in to buy land, building & infrastructure by business unit.	<b>Examples:</b> Cost of energy, raw materials & daily rated workers.

##### **(2) Explain what happens when demand falls till a firm is earning subnormal profits.**

- When there is a fall in demand, the firm will experience a fall in profits.
- If it earns at least normal profit i.e. its total revenue can at least cover economic cost (explicit and implicit costs) it will stay in the industry. However, when it is earning subnormal profits, it will have to decide whether it should stay or exit the market.

Figure 1: Making losses/subnormal profits when demand falls

Price/Revenue/Cost (\$)



From Figure 1, a fall in demand will cause  $AR_0$  and  $MR_0$  to decrease to  $AR_1$  and  $MR_1$  respectively, resulting in **lower output from  $Q_0$  to  $Q_1$ , lower price from  $P_0$  to  $P_1$  and unit cost rises from  $C_0$  to  $C_1$ . Supernormal profit decreases from  $P_0C_0BA$  to subnormal profits of  $C_1P_1YX$ .**

Whether the firm will shut down or continue production when sustaining losses depends on whether it is still able to cover all its variable costs.

### **Situation 1: A firm in short-run equilibrium earning subnormal profit but continues production**

In a situation where the firm is able to cover all its total variable cost but not all its total fixed cost from his total revenue, the firm will still continue production, despite earning subnormal profit. This is because if the firm closes down, the firm will incur all its fixed cost. However, if the firm can cover all its variable cost but not all its fixed cost, it will still be making less loss to continue production since only a fraction of total fixed cost cannot be recovered from the sale of goods.

### **Why should a rational loss-making firm still produce in the short-run if it can at least cover all variable costs?**

- There is no marginal cost in using the fixed assets [plant capacity]. Fixed costs are those costs that firms need to incur even if they are not producing any output. Moreover, fixed costs remain the same and do not rise with the level of output. Hence, they are not an important consideration in the firm's decision to continue production if variable costs can be covered.
- Consistent with loss-minimisation.
- Current situation could be temporary [e.g. during a recession] and there could be a turnaround.
- To ensure the client base [and the market share] is not lost.
- Costly to rehire trained workers again if firms were to shut down their plants and lay off workers [especially its senior managerial staff].

**Situation 2: A firm in short-run equilibrium earning subnormal profit and shuts down**

In a situation where the firm is unable to recover all of its total variable cost and all of its total fixed cost from the sale of goods (total revenue), the firm will close down its plant. **Why?** Under such circumstances, it makes sense for the firm to stop producing since it cannot cover the cost of its total variable inputs required to produce its goods. The only cost the firm will incur when it closes down its plant would be its fixed cost, which is lower than the total cost of production (total variable cost and total fixed cost).

**Situation 3: A firm in short-run equilibrium earning Subnormal Profit and is indifferent to whether to continue or shut down**

This is when the firm is only earning sufficient revenue to cover its total variable costs.

**Conclusion**

Firms have to consider variable costs when deciding to shut down in the short run. When a firm decides to shut down, it is really a temporary suspension of production. The firm is not going out of the industry. It may again resume production if situation becomes favourable. Hence shutting down is a short-run affair. A firm that has decided to shut down operations cannot avoid its fixed costs.

However, a firm will not choose to incur losses indefinitely. In the long run, the firm will have to decide whether to continue in business or to leave the industry and pursue profits elsewhere.

**Exit is a long-term decision.** A firm that has exited an industry has avoided all commitments and freed all capital for use in more profitable enterprises. **A firm that exits an industry earns no revenue but it incurs no costs, fixed or variable.** And they will make such decision when at profit maximisation output, the price is less than the LRAC, i.e. total revenue cannot cover costs.

**(b) Discuss the extent to which firms faced by high levels of competition are more vulnerable to closure in recession than firms in less competitive industries. [15]**

**Introduction**

Perfect competition and monopoly represent two extreme market structures, whereas monopolistic competition and oligopoly are two intermediate market structures. According to Economics theory, firms in perfectly competitive industries face the highest level of competition whilst firms in monopolistic industries face the least or even no competition. We shall now discuss whether firms in a highly competitive market such as **monopolistic competition**, or those in a less competitive industry, such as **oligopoly**, are more vulnerable to closure during a recession.

**Body**

**Thesis: Firms faced by high levels of competition are more vulnerable to closure in recession than firms in less competitive industries.**

**Why firms in monopolistic competitive industries are more vulnerable to closure in recession**

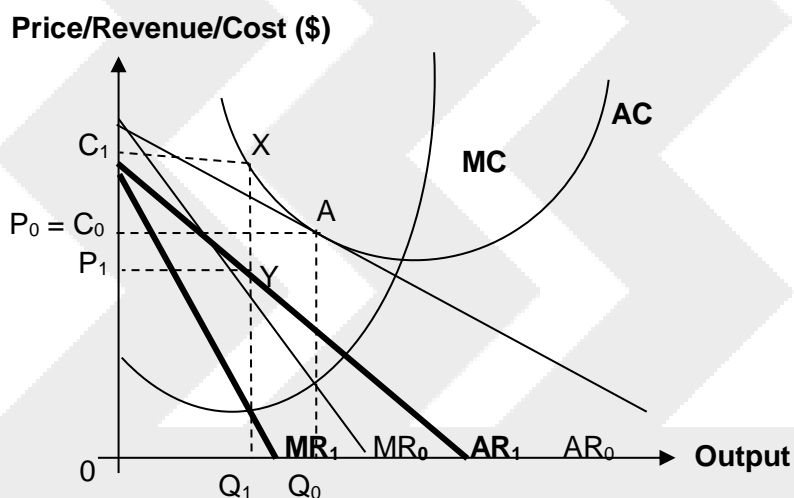
**Main reason: Earn only normal profits in the long-run**

- During a recession, demand for goods and services decreases for firms that sell normal

goods. As explained in part (a), when the fall in demand leads to a situation when revenue cannot cover variable costs, the firms will close.

- As monopolistic firms earn only normal profits in the long run due to low barriers to entry and exit, when demand falls, they will surely earn subnormal profits and thus face higher chance of shutting down if this fall is drastic.
- Besides, having no past supernormal profits to draw on, they have less ability to reverse the trend – the types of non-price competition they can resort down are not sophisticated and may not be effective.
- Also, with small scale of production, they are unable to reduce cost much (little economies of scale).
- These made them more vulnerable to closure when AR falls,

Figure 2a: From normal to subnormal profits when demand falls



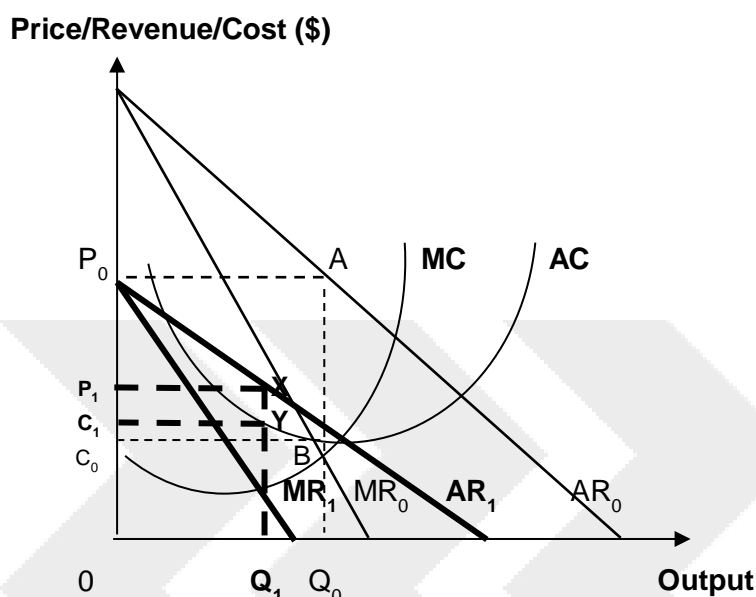
From Figure 1, a fall in demand will cause  $AR_0$  and  $MR_0$  to decrease to  $AR_1$  and  $MR_1$  respectively. These resulted in **lower output from  $Q_0$  to  $Q_1$ , lower price from  $P_0$  to  $P_1$  and unit cost rises from  $C_0$  to  $C_1$ . Normal profit decreases to subnormal profits of  $C_1P_1YX$ .**

### Why firms in Oligopolistic industries are less vulnerable to closure in recession

**Main reasons: Earn supernormal profits in the long-run + revenue and cost advantages**

But for big firms, they can retain substantial supernormal profits in the long run due to high barriers to entry, so even when demand falls, they probably will still be able to earn supernormal profits as seen in Figure 2b below.

Figure 2b: A decrease in supernormal profits (still  $> 0$ ) when demand falls



**Note:** Due to time constraint, candidates may choose not to draw this diagram.

Besides, when demand falls during a recession, big firms have greater resilience to stay in business due to the revenue and cost advantages they enjoy.

#### Revenue advantage of monopoly/oligopoly

- Due to the **lack of good substitutes**, the fall in demand for their product/service is limited even during a recession. This is especially true if the demand for it is **income inelastic** e.g. necessities telecommunication services.
- Ability to **diversify their basket of goods and services**. E.g. Certain airlines are able to branch into the budget airline services. This enable the airlines to keep afloat even though their long haul flights suffer loss, this is compensated by the gain in revenue in their budget flights. Budget airline is deemed as an inferior good vis-à-vis major airline => negative income elastic => when income falls during recession, demand for its service will increase => revenue increase.
- Employ **superior marketing techniques** to maintain or even enlarge market share e.g. promotion via celebrity endorsement through mass media, joint-promotion with complementary products or services such as tour agencies providing attractive holiday packages by linking with airlines, hotels, tourist attractions/resorts & eateries (concept of negative cross elasticity is applicable here).

#### Cost advantage of big firms

- Use more **economical method of production by R&D** since they have more funds as they can earn supernormal profits in long run.
- Firms can do **Merger and Acquisition** to increase the scale of production so as to reap internal **economies of scale**.
- Or they can **cooperate** to share out the costs – e.g. For same destination, airlines combine their passengers in one aircraft to spread out the cost.

**Anti-Thesis:** Firms faced by high levels of competition are **NOT** more vulnerable to closure in recession than firms in less competitive industries.

**Main reasons:** Possibly selling inferior goods + niche market + low costs

Examples of firms in relatively high level of competition: budget stores selling no-frills necessities, neighbourhood hair-saloons, hawker stalls, tailor etc.

**Inferior goods:**

If indeed these are firms that sell inferior goods/services, during a downturn, consumers will tighten their purse string and turn away from luxury items to them. And instead of a fall in demand, they will experience a rise in demand.

**Niche Market:**

These firms differentiate their products by providing varieties via more personalised service that reach out to consumers who desire individuality and attention: Longer opening hours, free-delivery, special recipe, etc. A good example will be a skilful hairdresser who has his or her own pool of customers and able to enlarge its pool of clientele through “words-of-mouth”. Alternatively, a small chicken rice stall with its “secret recipe” will continue to have a stable demand, regardless the economic situation of the economy.

**Low Costs**

Moreover, these firms also had very low costs. Thus on the one hand there were limited past profits, compared to monopoly or oligopoly profits, on which to draw when demand falls, while on the other hand the level of **costs was very low and hence price would have to drop much lower before firms reached their shut-down price.**

**Thus as long as demand did not fall drastically, the firms will not shut down.**

**Conclusion:**

Ultimately, whether a firm will close down or survive the recession will depend on its ability to increase its demand and cover variable costs. Its ability to remain in business is dependent on the type of goods they sell, its price and non-price strategies and not merely the type of industry it belongs. Even a firm in oligopolistic with relatively less competition, has to deal with the phenomenon of contestable market if it fails to improve its products/services over time.



4. Government have aims in relation to unemployment, economic growth and the balance of payments.

(a) Explain the consequences of failing to achieve these aims. [10]

(b) Discuss whether failure to achieve these macroeconomic aims is more likely to be caused by domestic or international factors. [15]

#### Schematic Plan (a)

Approach 1: Group and analyse some of the negative impacts collectively since the goals are related

Macro Problems	Leading to another problem	Consequences
Negative or slow economic growth	Leads to cyclical unemployment	Loss in production and income (Link to material SOL) Loss in human capital
Fast growth but restructuring failed to keep pace	Leads to structural unemployment	Loss in tax revenue Loss in social stability
Rapid growth $\uparrow AD > \uparrow LRAS$	Leads to demand-pull inflation <ul style="list-style-type: none"> <li>Problems like menu and shoe leather costs</li> </ul>	High growth $\rightarrow \uparrow Y \rightarrow \uparrow M$ $\uparrow GPL \rightarrow \downarrow X$ ( $PED_x > 1$ ) $\rightarrow \downarrow NX$  If inflation is too high, confidence lost/pessimistic outlook and I & C will fall leading to slow or even negative growth
BOP disequilibrium i.e. surplus	Inflow more than outflow Means appreciation of currency	<ul style="list-style-type: none"> <li>- NX falls if ML condition is satisfied</li> <li>• (-) if excess capacity as there will be slowing down of growth and even cyclical unemployment</li> <li>• (+) if tight capacity – lower demand inflation</li> <li>- Lower import-price push inflation (+)</li> </ul>
BOP disequilibrium i.e. deficit	Outflow more than inflow	<ul style="list-style-type: none"> <li>- Contractionary effect on the economy since both (X-M) and I are falling (Both BOT and financial account worsening) <math>\rightarrow</math> Growth and employment</li> <li>- Overall: Borrowing (Indebtedness)</li> </ul>

**Approach 2: Selectively analyse the negative impacts for not achieving each goal without overlapping points**

Explain each macro-goal briefly	Negative impacts
Economic Growth : Actual (Measured in terms of increase in real income/GDP) and potential growth (productive capabilities based on resources/and technology)	<p>Loss in production and income usually due to fall in AD/AS → Fall in demand for FOP (Rise in cyclical UNN) → Higher unemployment → Fall in material SOL</p> <p>Fall in LRAS (potential growth) → Future SOL</p>
<p>Full employment</p> <ul style="list-style-type: none"> <li>- Resources are fully utilised</li> <li>- Healthy Unn rate : 2-3%</li> </ul>	<p>Loss in human capital</p> <p>Loss in tax revenue and increased welfare payments → worsen government budget</p>
<p>Healthy BOP</p> <ul style="list-style-type: none"> <li>- Current, capital and financial accounts</li> <li>- Most economies aim for a slight surplus</li> </ul>	<p><b>Large BOP surplus</b> → <b>Means appreciation of currency due to net inflow</b></p> <p>NX falls if ML condition is satisfied</p> <ul style="list-style-type: none"> <li>• (-) if excess capacity as there will be slowing down of growth and even cyclical unemployment</li> <li>• (+) if tight capacity – lower demand inflation <ul style="list-style-type: none"> <li>- Lower import-price push inflation (+)</li> <li>-</li> </ul> </li> </ul> <p><b>BOP deficit</b></p> <ul style="list-style-type: none"> <li>- Contractionary effect on the economy since both (X-M) and I are falling (Both BOT and financial account worsening) → Growth and employment</li> <li>- Overall: Borrowing (Indebtedness)</li> </ul>

**Part (b)**

**Discuss whether failure to achieve these macroeconomic aims is more likely to be caused by domestic or international factors. [15]**

Introduction	
Domestic Factors	International Factors
<p><b>Rise in inflation rate relative to other countries</b></p> <ul style="list-style-type: none"> <li>- This can erode a country's exports competitiveness worsening BOT/BOP → fall in actual growth → Higher cyclical UNN</li> </ul>	<p><b>"Contagion" Effect: Globalisation</b></p> <ul style="list-style-type: none"> <li>- Recent years recessions (Subprime/EU crisis) causing fall in exports revenue and FDI → Worsen BOP → Actual and potential growth → higher UNN</li> </ul> <p><i>Evaluate:</i> Especially significant a problem for countries like Singapore (<b>Nature of economy is however a domestic factor</b>: Small domestic market and therefore depends heavily of (X-M) and FDI to fuel growth) Vs another country like China who would be able to turn inwards towards domestic C and I to drive growth</p>
<b>Loss of comparative advantage</b>	<b>Loss of comparative advantage</b>

<ul style="list-style-type: none"> <li>- Due to changes in factor endowment (eg. depletion of resources such as oil for some of the Middle east oil-exporting countries)</li> </ul>	<ul style="list-style-type: none"> <li>- Other countries gaining competitiveness eg. China opening its economy led to many countries such as US losing their CA in manufacturing / labour intensive sectors</li> </ul>
<p><i>Explain impact of loss of CA in relation to goals</i></p> <ul style="list-style-type: none"> <li>➔ Could lead to fall (X-M), worsening BOT, growth and employment</li> <li>➔ Also a reason for the rise in structural types of unemployment in especially developed countries (Decline of certain sectors with the loss in CA and workers are unable to take up jobs created in booming sectors due to skills mismatch)</li> </ul>	
<p><b>Government policies</b></p> <ul style="list-style-type: none"> <li>- Eg. How the Singapore government needs to have a gradual appreciation to moderate imports-price push inflation due to our lack of resources and need to imports → But it hurts exports competitiveness, if ML holds worsens BOT→ Hurt growth and employment</li> </ul> <p><i>Evaluate:</i></p> <ul style="list-style-type: none"> <li>- However it is necessary to keep the Singapore dollar strong as it helps moderate cost-push inflation which will in turn hurt our exports price competitiveness as well.</li> </ul>	<p><b>Government policies</b></p> <ul style="list-style-type: none"> <li>- What other governments especially other economies do could have repercussion on the economy eg. Backdrop of recession many economies are using protectionist measures to reduce their trade deficit and revive growth quickly in their economies → That would in turn hurt exports revenue of recipient economies of the measures → Affect BOP, Growth and UNN</li> </ul> <p><b>*One could also look the change of exchange rate as an international factor</b></p>
<p><b>Excessive rise in domestic consumption and investment</b></p> <ul style="list-style-type: none"> <li>- Over optimistic/ irrational exuberance lead to AD rising rapidly and if <b>coupled by domestic policies</b> are insufficient to raise LRAS in tandem → Inflationary growth (with also an inflation problem) which is a problem China had previously been experiencing. This is a major problem also because China has a <b>large domestic market</b> which means that domestic C and I could contribute greatly to the rise in AD.</li> </ul>	
<p><b>Conclusion/Synthesis:</b></p> <p>Overall, the <b>extent of the openness of the economy</b> could be one of the more crucial factors influencing whether domestic or international factors would have a greater impact of the economy. <i>Using Singapore as an example of a country both open to trade and investment. These conditions are significant when the Singapore government decides in for example its exchange rate policy, in terms of how much to appreciate when countering imported inflation, considering the possible tradeoff with cost competitiveness of exports and FDI.</i></p> <p>Or size of economy can be an important factor External demand is a major engine of growth for small economies and hence will be more vulnerable to global conditions.</p>	

5. On 1 Sep 2011 the Monetary Authority of Singapore (MAS) reported that inflationary pressures remained strong because of the **tight domestic labour market**, **high consumer spending** and **rising commodity prices**.

(a) Explain **how factors mentioned above** will lead to inflationary pressures remaining strong in Singapore. (10)

(b) Discuss alternative economic policies that the Singapore government might consider adopting to alleviate these inflationary pressures. (15)

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(a)

**Schematic Diagram**

**Introduction** : KIA

**A. Explain Cost-push inflation**

- (i) Wage-push inflation: Tight labour market
- (ii) Import cost push inflation: Rising commodity prices

**B . Explain Demand-pull inflation**

- High Consumer Spending

**Conclusion**

## **Introduction :**

*Key definition: Inflation*

*Issue/Approach: Singapore was experiencing both demand and cost-push inflation in 2011.*

## **Development:**

### **A. Explain Cost-push inflation – 2 types**

#### **(i) Import cost push inflation due to Rising commodity prices**

A persistent threat of inflation for Singapore comes from import-price push inflation. Being a small and open economy with no natural resources, Singapore is especially vulnerable to import-cost push inflation.

The Singapore economy is heavily dependent on imported raw materials and intermediate goods for production, thus a hike in the prices of commodity prices leads to cost-push inflationary pressures.

For instance, if there is a hike in oil prices globally due to “supply shocks” (e.g. OPEC cutting production quotas), oil will cost more to import. Since oil (with the processed product being petroleum) is a key resource used as fuel and energy in the production of many goods and services in Singapore e.g. higher bus fares; cab fares; electricity tariffs, businesses are likely to pass on the cost to consumers.

#### **(ii) Wage-push inflation due to Tight labour market**

The unavailability of cheap source of foreign workers has exerted upward pressure on wages especially for the lower-income unskilled workers. The policy of tightening the influx of foreign workers in recent years is expected to exert further **upward pressure on wages and business costs** in the short run thus contributing to the rate of inflation.

### ***Explain cost-push inflation with reference to figure 1 below:***

The two types of cost-push inflation can be depicted by figure 1 below. Assuming there is an increase in the costs of production at all levels of output, the SRAS curve shifts upwards to  $SRAS_1$  resulting in a higher price level at  $P_1$  and a lower equilibrium output at  $Y_1$ .

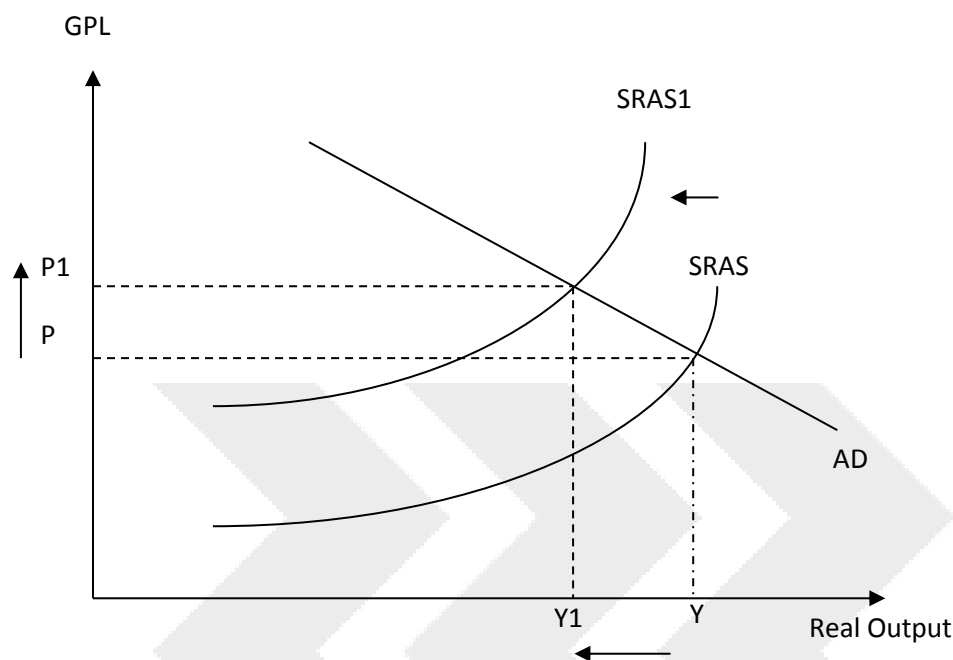


Figure 1: Cost-Push inflation

### **B . Explain Demand-pull inflation due to high consumer spending**

High Consumer spending can lead to demand-pull inflation. This is a situation in which actual growth outpaces potential growth. Actual growth refers to annual increase in national output, whereas potential growth is the annual increase in the economy's productive capacity.

In boom times, demand-pull inflation can happen when the economy is experiencing rapid growth brought about by a rapid increase in Consumer spending, a key component of AD. In an economy operating close to full capacity, the increase in AD exerts an upward pressure on prices leading to overheating of the economy. It is likely that the economy is operating with a lack of spare capacity as the labour market is described to be "tight".

For instance in Singapore, demand-pull inflationary pressures may be caused by too much liquidity in the economy. Aggregate spending could be bolstered by the availability of cheap and easy credit. For instance, in 2010-2013 demand for property is high despite a slowing economy because of the availability of cheap loans to finance the purchase of such assets. Demand for property has been boosted by low mortgage rates (i.e. interest rate for home loans) as well as influx of foreign buyers. This wealth effect of rising asset worth would have encouraged consumer spending.

*Explain demand-pull inflation with reference to figure 2 below:*

An excessive/rapid rise in AD from  $AD_0$  to  $AD_1$  will raise the real output marginally from  $Y_0$  to  $Y_f$ . This represents an increase in actual output or actual growth, without corresponding increase in AS. This is the situation when the economy is operating near or at full-capacity. Thus, rising AD leads to competition for resources, hence driving up business costs e.g. wages, rentals, which in turn give rise to sustained rise in general price level in the economy. It results in inflationary pressures, GPL increase from  $P_1$  to  $P_2$ .

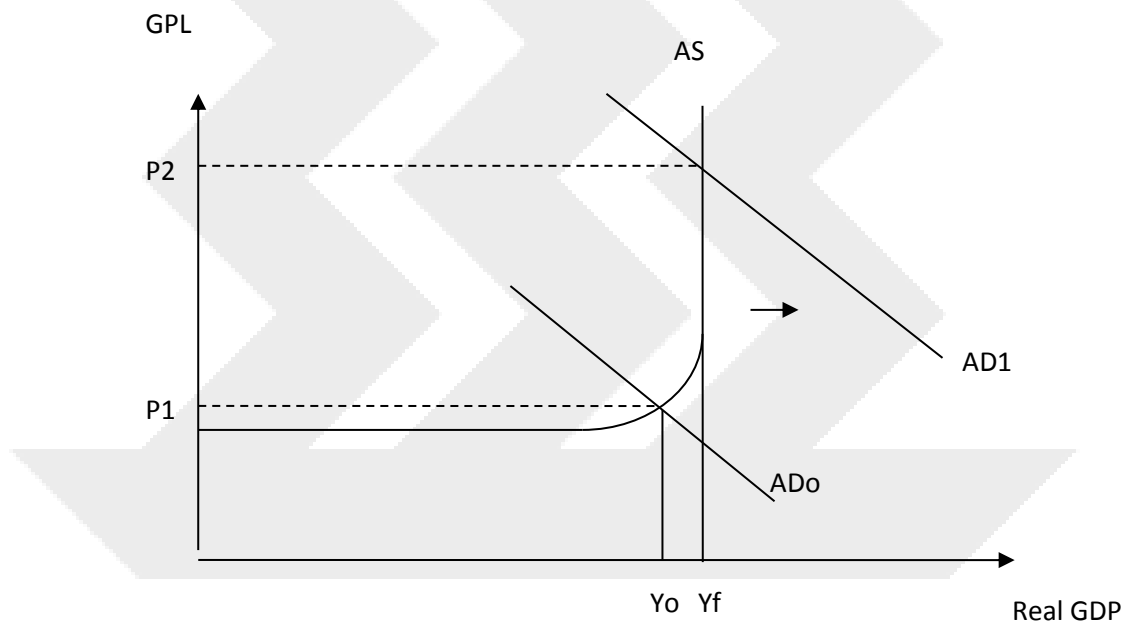


Figure 2: Demand-pull inflation

**Conclusion:** Combination of both domestic and external factors driving both demand-pull and cost-push inflation in Singapore.



**(b) Discuss alternative economic policies that the Singapore government might consider adopting to alleviate these inflationary pressures. (15)**

---

### **Introduction**

Depending on the particular source of inflation, the Singapore government would have to select appropriate policy tools to reduce inflation. They can depend on a **variety of tools** from **demand and supply management policies**.

### **Body - Discuss use of THREE alternative policies that are MOST APPROPRIATE to the Singapore economy**

#### **i.      Macroprudential policies instead of interest rate policy in Singapore's context**

With the principal threat to consumer and asset price stability emanating from easy monetary conditions and low real interest rates globally, **one might question whether MAS should abandon the exchange rate target and seek to control domestic interest rates instead**. Theoretically, it requires a reduction in money supply, which would, through the money market causes a rise in the interest rate. The rise in interest rate raises the opportunity cost of consumption, hence reducing consumption. At the same time, the higher interest rate raises the cost of borrowing which makes more investment unprofitable hence lowering the level of investment. Thus consumption and investment falls, which in turn shifts AD to the left, thus dampening demand-pull inflation.

#### **Limitations of using interest rate policy in the context of Singapore**

However, the implications of using interest rate policy need to be considered and managed accordingly. First, in an open economy setting, higher interest rates will attract even more capital inflows to Singapore, especially given our strong macroeconomic fundamentals and persistently low foreign interest rates. This could fuel further asset price inflation. Thus, cooling measures in the asset markets need to be continued and calibrated accordingly. *For instance, property cooling measures to reduce speculations in the market are put in place in 2013 in Singapore e.g. increase supply of public housing and private housing; reining in speculative demand with tightening of housing loans, Additional Buyer Stamp Duty was set at 10%.*

The hike in interest rates would also have to be very aggressive for it to dampen demand for credit, and tame asset prices. This would in turn lead to a sharp appreciation in the exchange rate, which would impose significant collateral damage on the broader economy. Indeed, some regional economies with interest rate regimes are facing the dilemma between raising rates to curb credit booms and preventing the spillovers on capital inflows and their exchange rates.

**Hence, instead of managing interest rates the government uses other policies to cool the property markets in order to tame demand pull inflation.**

#### **ii.      Policy to tackle import-price push inflation → Exchange-Rate Policy**

Singapore adopts an exchange rate policy of a gradual and modest appreciation of the S\$. Appreciation of S\$ will make our imports relatively cheaper in terms of our domestic currency. Since Singapore has limited natural resources and is heavily reliant on imports of necessities, raw materials and semi-finished goods for consumption and production of goods for exports, cheaper import prices will lower cost of production for firms in general. This will shift the SRAS to the right, leading to a reduction in price levels. (Refer to fig 1)

### **Limitations of policy**

A strong S\$ implies that our exports will be less price competitive, ceteris paribus. And hence Balance of Trade will worsen, leading to slower economic growth. This assumes that the Marshall-Lerner condition holds. (While it is reasonable to assume that Singapore's demand for imports is price inelastic, it would also be reasonable to assume that the demand for Singapore's exports would be price elastic since in the international market, there are many substitutes, thus  $|PED_x| + |PED_m| > 1$ ). This will be made worse if the country is suffering from a recession. However, this effect is partially mitigated by high import content of our exports. With appreciation, imported raw materials and semi-finished goods will be cheaper, reducing cost of production of exports. This helps to partially offset the increase in export prices and mitigate the negative effects of appreciation.

**Evaluation:** *In addition, exchange rate policy is a short-term solution, as it does not solve the root causes of high prices of imported raw materials. The government may want to subsidise R&D for alternative energies so as to reduce our dependence on oil, minimising the effect of rising oil prices in recent years.*

### **iii. Policy to tackle wage-push inflation → Use of Income Policy**

An income policy is an attempt to reduce wage push inflation. It is a form of government intervention either directly or indirectly to influence wage setting. - e.g. government passing legislation to **limit** rises in wages. Such a policy can be classified as a supply side policy. It could take various forms such as a wage freeze or even wage reduction in the public sector. The impact of such a policy will shift SRAS to the right.

In the context of Singapore, our industrial relations are managed differently from other economies. Our trade unions work closely with the employers' association and the government in the National Wages Council (NWC) to determine appropriate annual wage increases. It meets annually to recommend wage increases *that do not exceed productivity gains*, thereby maintaining our unit labour costs in Singapore. It also ensures the SRAS curve from shifting to the left, thereby eliminating wage-push inflation. With the curtailing of trade union power and a low inflation rate environment in Singapore, there has not been any wage explosion. This has prevented the rise in production costs and has ensured our prices

### **Limitations of policy**

However, effective wage controls tend to interfere with the allocative functions of the price mechanism. Factor prices must be allowed to fluctuate freely and fully in response to changing market conditions, i.e. to changes in demand, changes in factor supplies, and changes in technology, in order to achieve allocative efficiency over time. Effective wage

controls would thus undermine the market mechanism from making these adjustments. What this means is that firms will not be able to attract specific labour they require through higher wages. And when the markets are deregulated (e.g. the restraints are removed), wages and prices often resume to the level they would have reached without the restraints, making the initial policy ineffective.

**iv. Policy to tackle BOTH cost-push and demand-pull inflation → SSP (MOST IMPT!)**

On the other hand, economic growth may not fuel higher inflation rates when the growth is **non-inflationary** in nature. Non-Inflationary economic growth is the situation where potential growth grows in tandem with the actual growth. In such instances, the economy will have adequate resources to meet rising demand for goods and services. Hence there is no upward pressure on prices to rise. This could happen when actual growth is accompanied by increased productivity through supply-side policies. The increase in productivity if faster than the increases in wages would also aid to reduce wage-push inflation.

→ *Elaborate on various aspects on policies to increase productivity in SG*

*Explain with reference to Figure 3 below:*

Economic growth may not lead to inflation when potential growth outpaces the actual growth. For potential growth to occur there would also have to be an increase in potential output, AS shifts right to  $AS_1$ . When AS shift rightwards together with the increase in AD, output increases beyond  $Y_f$  and price level stays at  $P_1$ , achieving non-inflationary growth.

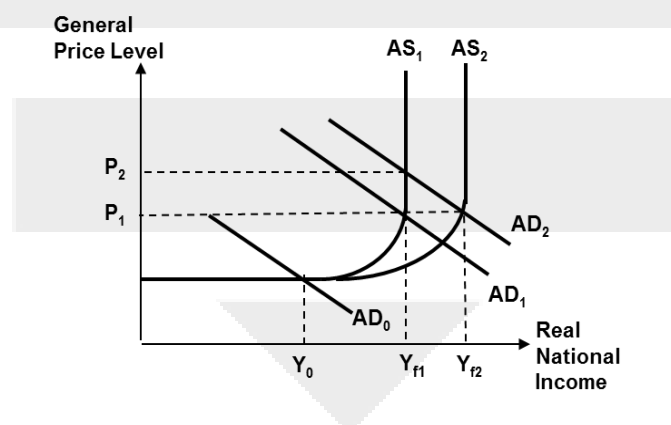


Figure 3: Economy experiencing Non-Inflationary Growth

**Evaluative comment:**

*The benefits of such policies take time to kick in. However, in Singapore the government is far-sighted and has implemented policies to continually raise productivity via skills training, adoption of better technology; more efficient workplace management practices and R&D.*

## **Conclusion**

The policies adopted to control inflation will be influenced by the extent of the inflation rate, and what is thought to be causing it. In Singapore, due to the uniqueness of its economy and the multi-causal nature of its inflation, multi-dimensional and calibrated approach has to be taken on the demand as well as supply side. In the long run, the most appropriate policy of reducing inflationary pressures is still to adopt long-run supply-side policies to increase the productive capacity of the economy. That would help to avoid the problems of macroeconomic trade-off in terms of lower output and higher unemployment.



### Question 6

On 14 October 2011 Premier Wen Jiabao of China called for joint international efforts to combat rising trade protectionism, which he said was damaging the world economy amid on-going global economic turbulence.

Source: China Daily, 15 October 2011

**Discuss whether the use of protectionist policies can ever be justified during a period of worldwide economic recession or whether governments should follow Premier Wen's advice and adopt a policy of greater free trade. [25]**

#### INTRODUCTION

**Requirement of Question:** To discuss whether protectionism is justified during a worldwide recession, we need to examine the benefits and costs of it; and if the net cost is higher, we would have to consider whether to adopt Premier Wen's suggested policy of greater free trade instead? To answer this question, we need to examine and evaluate the arguments for adopting a policy of greater trade before coming to the conclusion on which policy to adopt.

<b>Key Concepts</b>	<p><b>Worldwide economic recession</b></p> <p>Many countries experience falling national income – a worldwide phenomenon.</p> <p><b>Protectionist policies</b></p> <p>Protectionist policies include eg. import tariffs that will raise the prices of imports and/or non-tariff measures such as quotas that will limit import quantity.</p> <p><b>Policy of greater free trade</b></p> <p>Removal of existing protectionist trade barriers or actively pursues the signing of Free Trade Agreements (FTAs) with various countries to the promote more trade.</p>
<b>Issue Approach</b>	<p>There are two issues inherent in the question, initially, we need to discuss the benefits and costs of protectionism in the midst of a worldwide recession, and if protectionism has a net negative impact, whether attention should be focused on promoting greater free trade. Therefore, the next issue will be to discuss the arguments and evaluation of promoting freer trade during a recessionary period. Finally, we need to come to the judgement on which option to adopt.</p>

## BODY

### Thesis Argument for the use protectionist policies during a worldwide economic recession

Explain how protectionism can bring benefits to countries during a worldwide economic recession.

#### Mitigates the fall in National Income and Employment

In a worldwide economic recession, consumption in countries decreases, and this includes spending on imports. This resulted in a fall in demand for exports of their trading partners.

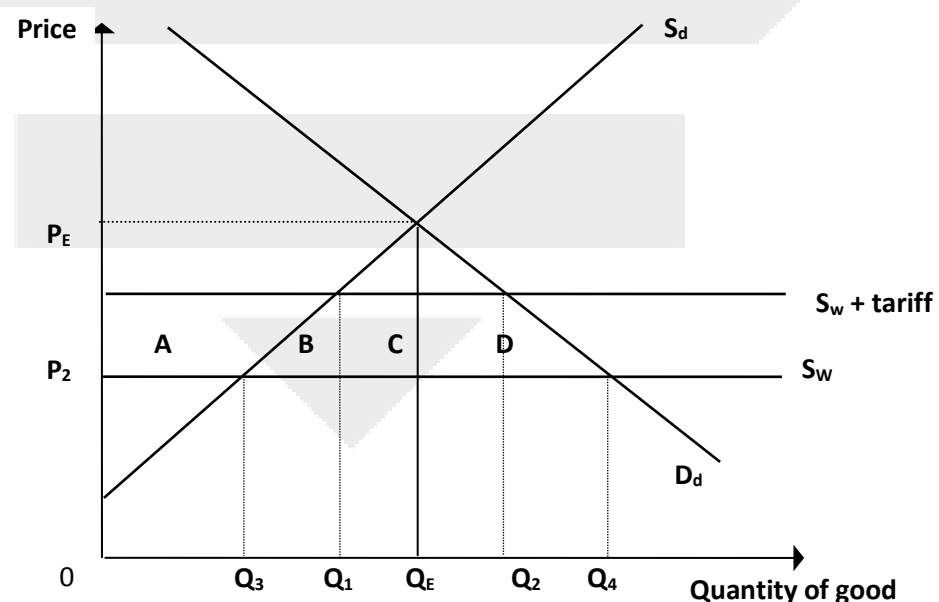
For these export countries, the value of net export ( $X-M$ ) will fall and thus their  $AD_o$  falls as seen from Figure 2 to  $AD_1$ , leading to a multiple contraction in national income to  $Y_1$  and unemployment increases. This further aggravates the worldwide fall in incomes.

In view of the global recession, export countries attempt to mitigate the fall in national income by reducing the reliance on exports and encourage domestic consumption.

Countries put up protectionist policies such as import tariffs and quotas to shield domestic industries from foreign competition, which raise import price or limit import quantity. Hence demand of consumers is diverted to buying more domestic goods.

This switch in expenditure to local goods instead of imported goods, helps to raise domestic consumption.

Figure 1: Impact on the imposition of tariff on a good



Referring to Figure 1 above,

- $D_d$  represents the domestic demand for the good and  $S_d$  represents the domestic supply of textile and  $S_w$  represents the world-supply.
- When there is NO tariff, the country imports  $Q_3Q_4$  of goods from foreign suppliers at

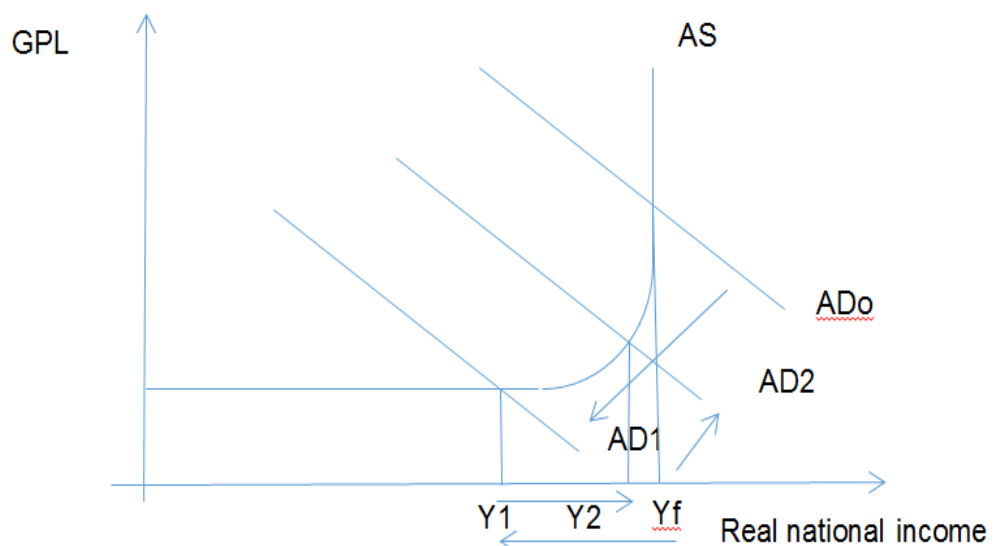
price  $P_1$ .

- After an imposition of tariff, the price will rise from  $P_1$  to  $P_2$ , quantity demanded reduces to  $Q_2$  and local production increases to  $Q_1$  and imports will reduce to  $Q_1 - Q_2$ .

#### (AT) Negative implications

- **However**, the consumers are worse off and they are able to consume less of the good and at a higher price, thus losing the consumer surplus by area  $A+B+C+D$ .
- On the other hand there has been an increase in the producer surplus of area  $A$  and an increase in government tariff revenues of area  $C$ .
- **Reduction in imports spending** will **improve the trade balance** and increase net exports bringing about a rise in AD
- Hence protectionist measures will bring about actual growth and this would help to prevent too drastic a fall in the country's national income caused by the fall in export earnings in the light of worldwide fall in income. This would also **reduce the unemployment** especially in the sectors where the protectionist measures are implemented.

Figure 2: Graph to illustrate fall in imports spending mitigating the fall in Net Exports due to recession



- In the backdrop of a world-wide recession, there are also possibly more countries practicing predatory dumping which is to dump their goods below marginal cost. That could justify for why some countries would continue or choose to use protectionism as a strategy.
- This approach to use protectionist measures has been adopted by mainly countries like U.S.A and UK in the midst of the subprime crisis then the European crisis as they view it as a necessarily strategy to address their problem of high unemployment and also huge trade deficits.

#### Evaluation

- The extent of the fall in  $AD_0$  due to recession may not be matched by the increase in AD brought about by the protectionist measure and income only rises to  $Y_2$ ; if it does, then it might mitigate or cushion the fall in National Income and thus the protectionist policy shall be a good policy in the face of a worldwide recession.



- Small and open countries are dependent on imports due to the lack of resources and markets like Singapore may be disadvantaged by the imposition of import tariffs. With higher import tariffs, Singapore, which is dependent on imports for necessities and foreign inputs for its domestic manufacturing will find prices of imported goods and resources becoming higher. This might add to cost-push inflation in the country and the erosion of competitiveness of its exports.

*Bridge to anti-thesis:* While protectionism may be a possible short term strategy, it is unlikely to be a sustainable strategy.

### Anti-thesis: Arguments against Protectionist policies

#### AT1: Explain how protectionist policies are harmful during a worldwide recession

##### (1) Retaliation from trading partners

- Protectionism may invite retaliation from the country's trading partners in the form of similar protectionist measures being imposed. This move may spiral into a trade war. For example, US may retaliate by imposing import tariffs on Europeans countries' tariffs on US produced steel. The tariff is a beggar-thy-neighbour policy, where the fall in import expenditure causes export earnings of foreign countries to fall so foreigner incomes fall and thus foreigners buy less imports from US and US export earnings will fall, aggravating the worldwide recession.

##### (2) Greater Inefficiency in world resource allocation

- Without free trade due to protectionism, production chain cannot be broken down where countries can specialise in production of goods that they have comparative advantage in. Hence efficient allocation of world resources cannot be achieved and lower cost of production cannot be achieved. Local industry may become complacent and produce lower quality goods with limited variety as there is no incentive to improve due to the lack of strong and efficient international competitors.

Since protectionist policies do not produce the desired result in the midst of recession, then should governments follow Premier Wen's advice and adopt a policy of greater free trade?

#### AT2: Argument for the adoption of free trade

Explain how free trade can benefit countries.

Illustrating the gains from trade using the law of comparative advantage

**Table 1L PRODUCTION BEFORE** Specialisation and Total World Output

	Computer	Textile
USA	40	10
Vietnam	5	10
Total world output	45	20

Referring to Table 1 above:

- Due to different factor endowment and by devoting half of their resources among the production of computer and textile, USA is able to produce 40 units of computers and 10 units of textile while Vietnam is able to produce 5 units of computers and 10 units of textile.

### Opportunity Cost Ratios: Area of Comparative Advantage

Table 2: **Opportunity Cost Ratios**

	1 Unit of Computer	1 Unit of Textile
USA	$10/40 \text{ 1C} = 0.25\text{T}$	$40/10 \text{ 1T} = 4\text{C}$
Vietnam	$10/5 \text{ 1C} = 2\text{T}$	$5/10 \text{ 1T} = 0.5\text{C}$

Referring to Table 2 above:

- For USA, she can produce 4 units of computers for 1 unit of textile. This means that to produce each unit of computer, she has to give up 0.25 unit of textile. Thus the opportunity cost of 1 unit of computer in USA is 0.25 unit of textile; and the opportunity cost of 1 unit of textile in USA is 4 units of computers.
  - By the same argument, the opportunity cost of producing 1 unit computer in Vietnam is 2 units of textile; and the opportunity cost of producing 1 unit of textile is 0.5 unit of computer.
  - Thus, we see that USA has a comparative advantage in computer production since it needs to give up lesser textile than Vietnam for producing computers whereas Vietnam has a comparative advantage in textile production since it gives up lesser computers than USA for producing textile.
- ➔ By specialisation and trading based on a suitable term of trade within their opportunity cost ratios, countries will gain as they are able to enjoy a bundle of goods beyond their production possibility curve.
- ➔ The increase in their exports in areas of their comparative advantage will in fact aid

in increasing their AD and national income and employment

- The ability to continue to import from lower cost countries will also be significant in helping them keep their cost of production low which may in turn affect their exports competitiveness as well.

#### Evaluation of benefits from policy to promote greater free trade

- **Not all countries involved in free trade benefit equally.** It is even more so in periods of economic recession whereby small economies are seen to be dependent more on free trade than large economies.
- Small economies would gain more if there is more trading activities during economic recession because only then is it able to reap economies of scale from a larger foreign export market due to the limited consumer base at home and its smaller domestic markets.
- Moreover, with a small market and together with falling domestic demand due to declining incomes arising from worldwide recession, it needs foreign export markets to mitigate to shore up demand and income.
- On the other hand, large economies tend to be more self-sufficient in natural resources and hence are not so dependent on trade, especially during recession.  
*Could also argue that in the first place, free trade could have been deemed by some of the economies to have caused macro-economic problems in their economy. Eg. Changing CA and need to restructure → that takes time and in the meanwhile could mean higher structure UNN / falling net exports for them*

#### CONCLUSION/JUDGMENT

From the above discussion though it is evident that whilst protectionist policies can help to generate more domestic demand during the period of recession, it is not an ideal solution and be only used as a short term measure. Big countries may not require export markets due to self-sufficiency in natural resources and hence they are more keen on protectionist measures; while small ones need trade to survive, more so when there is an economic recession resulting in shrinking domestic demand from falling income.

The push to open up policies to encourage greater trade is desirable so as not to aggravate further fall in income during an economic recession but the unbalanced gains from big and small economies make it less in the interest of big ones to open up for more trade. These countries should instead look to investing in **supply-side policies** such that if new comparative advantages can be discovered from opening up to more trading partners, then it will be advantages for all countries to increase trade thus reaping the gains from trade.

## 2014 A Level Paper 1

### Question 1 Changes in the world market for oil and gas

(a)	(i)	<b>Compare the price of oil relative to the price of natural gas in 2012 with that in 1993.</b>	<b>[1]</b>
		Price of oil rose relative to natural gas.	
	(ii)	<b>How could this difference be explained given the increase in the production of both commodities?</b>	<b>[3]</b>
		<ul style="list-style-type: none"> <li>The increase in supply would have caused prices to fall, c.p.</li> <li>For price to rise, there must be a rise in demand that outweighs the rise in supply.</li> <li>For price of oil to increase relative to natural gas the rise in demand for oil is much faster than the rise in demand for natural gas or the rise in supply is slower.</li> </ul>	
(b)		<b>Explain the likely impact on the OPEC cartel and its individual members following the increased production of oil as a result of the fracking boom.</b>	<b>[5]</b>
		<p><b>Impact on OPEC cartel:</b></p> <ul style="list-style-type: none"> <li>As a result of the fracking boom, there is an increase in production of oil produced by the US (Extract 1: "... fracking boom will push US oil production up... US will overtake Saudi Arabia and Russia to become the world's biggest producer of oil and natural gas in the next five years..."), this results in the entry of new firms in the oil industry and a fall in demand for OPEC cartel oil supplies (US will be self-sufficient in energy in 2035 and reduce its imports from Middle East according to Extract 1). A fall in demand will cause the OPEC's revenue to fall.</li> <li>The increase in oil production through fracking will also lead to a fall in market share of OPEC. This implies OPEC's reduced ability to control the market price of oil given the drop in market share.</li> </ul> <p><b>Impact on individual members (countries and not firms):</b>          With the fall in export revenue (from export of oil to US), the net export revenue falls causing the AD to fall and hence OPEC's individual members' NI will fall, c.p.</p>	
(c)		<b>Compare the likely barriers to entry facing the potential entrants to guar farming with those to oil production by fracking.</b>	<b>[3]</b>
		<p>Define barriers to entry as deterrents for firms to enter the industry.</p> <p>The barriers to entry facing potential entrants to guar farming are generally lower as compared with those to oil production by fracking. It is generally easy to switch away from cotton and other crops to guar bushes using the same set of resources and especially with the support of Rajasthan's biggest guar exporter giving away guar seeds to encourage guar farming (Extract 3). However, fracking requires high capital expenditure (Extract 1) such as cost of equipment.</p>	
(d)		<b>To what extent is the fracking boom likely to lead to a long-term improvement in the standard of living of guar farmers in India?</b>	<b>[8]</b>
		<p><b>Introduction</b>          Fracking boom led to the increased demand for guar (derived demand). SOL comprises material and non-material aspects with the former on the amount of consumer goods and services available and the latter on the quality of life.</p> <p><b>Body</b>  <b><u>Yes, fracking boom is likely to improve SOL of guar farmers in India.</u></b></p> <ul style="list-style-type: none"> <li>Material SOL can improve as a rise in demand for guar will lead to a rise in demand for workers in the industry, creating more jobs and leading to higher income for the guar farmers (Extract 3: "... used their guar windfall to travel abroad for the first time or to buy gold...").</li> <li>Falling prices of oil due to fracking boom may also benefit farmers in terms of falling cost of production, transportation costs, etc. Ceteris paribus, profits will rise for the firms.</li> </ul> <p>However, in the long run, face competition from other countries such as Pakistan, Africa and even Texas, larger harvest may also reduce the prices of guar and lead to falling incomes, hence the extent of improvement in SOL will be reduced.</p>	

**No, fracking boom is not likely to improve SOL of guar farmers in India.**

- Non-material SOL may not improve as more farmers switch away from food crops to guar bushes, reducing supply of food crops available and causing prices of food to rise and cost of living increases.
- It is also mentioned in Extract 1 that fracking has been linked earth tremors and water pollution, generating negative externalities which could have harmful health effects on people including the Indian farmers.
- It is further mentioned that Europe's consumption of environmentally unfriendly coal increases due to the shale boom reducing US demand for coal, contributing to the increase emissions of carbon dioxide that may imply long-term temperature increase which could adversely affect farmers, making it more difficult for them to grow crops with more frequent droughts, affecting their income.

**Conclusion**

Fracking may improve material SOL of Indian guar farmers in the short run but worsen the non-material wellbeing and also in the long run when competition arises, the improvement in material SOL will be reduced. To assess the SOL, the Human Development Index that includes the life expectancy should be provided.

(e) **The increased extraction of fossil fuels by fracking leads to economic inefficiencies in resource allocation. Assess which would be the most appropriate policy option to deal with this.**

[10]

**Introduction**

- State that the increased extraction of fossil fuels by fracking will result in negative externalities in production.
- Define negative externalities.
- State that it will lead to over-allocation of resources in the industry.
- State that taxation and legislation can be used to deal with the problem.

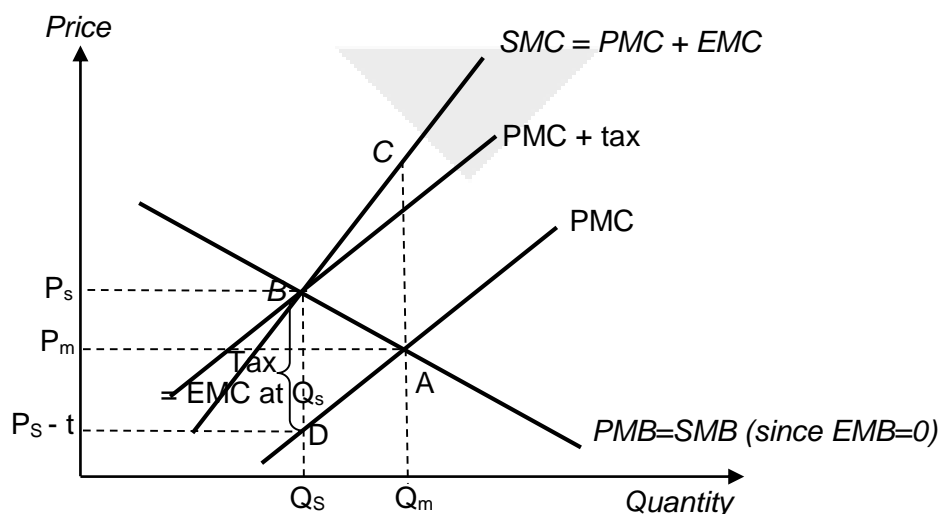
**Body**

According to Extract 1, fracking leads to earth tremors and water pollution. Earth tremors lead to loss of homes and lives of those staying in the affected areas, transport and communication links may be disrupted as well. Water pollution causes health problems such as diseases and cancer to those who consume the contaminated water and fishes in it. Such external costs borne by these people are not compensated for by the fracking firms as they are only concerned with their own private costs and the external costs are unpriced by the price mechanism and thus not included in the private costs. As such, there is an over-production in the fracking industry.

**Possible policy options to deal with this:**

1. Market based solution – imposition of taxes on the fracking firms

**Figure 1: Tax to internalise EMC from overproduction of oil and gas due to fracking**



The government might impose an indirect tax on producers corresponding to the external marginal cost i.e. Tax=EMC at  $Q_s$  (distance BD) on each unit of output. This shifts the PMC upwards so that the new

<p>PMC, which equals <math>PMC + \text{tax}</math>, coincides with the SMC at <math>Q_s</math>. Hence, the new market equilibrium quantity where <math>PMB = PMC + \text{tax}</math>, now coincides with the socially efficient quantity <math>Q_s</math>, where <math>SMB = SMC</math>. If the tax accurately reflects the external marginal cost, producers are now in effect paying for the use of the environment as the price they are receiving is now lower at <math>P_s - t</math>, compared to <math>P_m</math> before the tax. The externality has then been internalised or priced in.</p> <p>The problem with using this method is the difficulty in measuring the external cost of an activity as they may be difficult to monetize and estimate. In addition, different fracking firms may create different amount of pollution. This makes imposing the correct amount of tax difficult. While under-taxing brings the economy closer to the optimal level, over-taxing may discourage producers from producing and output produced will be lower than the optimal level. However, one advantage of fracking is that it brings about huge economic benefits to the US, including employment.</p> <p><b>2. Legislation</b></p> <p>This is a process of controlling business activities through licences, setting standards, laws and administrative rules. The government may lay down the maximum pollution levels. Firms have to adhere to the standard. There will be appropriate financial penalties for not doing so.</p> <p>For this measure to be effective, the government needs to inspect the firms regularly to make sure that these restrictions are adhered to. This requires large amount of manpower to monitor and enforce, which involves high opportunity cost as such resources could have been put to more productive uses. The penalties for violations also need to be severe enough for the measure to be deterrent.</p> <p><b>Conclusion</b></p> <p>The most appropriate policy option to deal with this depends on the ease of estimating the external cost of fracking activities and hence the ease of imposing appropriate tax amount. It also depends on how the producers value the benefits of fracking as compared to the costs (fines and penalties) in order for the legislations to be of adequate deterrence. In general, legislations are considered to be a blunt instrument compared to market-based solution. Tax helps the market to price in external costs so that the full social costs is accounted for by both consumers and producers, hence improve resource allocation.</p> <p>A good balance of taxes on producers to compensate the third parties and also a fair implementation of legislation will perhaps be an appropriate policy option to reduce production of fossil fuels via fracking, hence achieving efficiency in resource allocation.</p>	
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2014 TYS: Case Study Question 2 – Suggested Answers		
Growth and competitiveness		
Questions		
(a)	Which economy in Table 1 shows the greatest variation in its growth rate	[1]
	<p>Singapore.</p> <p><i>(Not only did Singapore's growth rate dip into negative territory in 2009, the variation in the magnitudes was also the largest.)</i></p>	
(b)	Explain how productivity and living standards are related	[2]
	<p>Productivity measures the efficiency of production in terms of the rate of output per unit of input. The pay of a worker is likely to increase when his or her labour productivity increases and thus giving them the purchasing power to buy more goods and services, improving their standard of living.</p> <p>Or</p> <p>When greater productivity of inputs lowers the cost of production, the profits of investors will increase. The increase in pay to workers/returns to investment for the investors will lead to an increase in their ability to consume goods and services, hence increasing their <b>material</b> standard of living.</p>	
(c)	Explain how the cut in interest rates suggested in Extract 4 might 'spur growth'.	[3]

	<p>A cut in interest rates leads to a fall in the cost of borrowing for both the consumers and investors. This would increase consumption for the consumers, and make investment more profitable for the investors, hence increasing their level of investment.</p> <p>The increase in consumption and investment will increase Aggregate Demand (AD) and ceteris paribus, this would increase economic growth.</p> <p><i>(Note: given that this is a 3m question, Cambridge does not expect an AD-AS diagram. However, mention of the link to AD would still be necessary.)</i></p>	
(d)	<p><b>Explain how <u>three</u> of the supply-side factors identified in Extract 5 might affect the productivity of an economy.</b></p>	[6]
	<p><i>The aim of the question is to test the candidates ability to translate the descriptions of three of the twelve supply side factors (identified as pillars of competitiveness), so that they are explicitly linked to the concept of productivity. It is insufficient to simply quote from the descriptions of the pillars without link to the rate of output.</i></p> <p><b>Productivity refers to the quantity of output per unit of input. For labour, this is measured as the level of output per man hour.</b></p> <p>(Explain any of the three factors below)</p> <p>Pillar 1: One important <b>institution</b> is the government. If a government is able to implement supply side policies effectively, it can promote productivity in the economy. For instance, the Singapore government provides the Productivity and Innovation Credit (PIC) to firms to encourage the use of innovative technologies, which helps to increase the rate of output over time.</p> <p>Pillar 2: The <b>infrastructure</b> of an economy refers to the basic physical and organizational structures and facilities, such as buildings, roads, power supplies. An excellent road network, for example, enables raw materials to be transported quickly to factories. This helps to reduce the time required to produce each unit of the final good, hence increasing productivity.</p> <p>Pillar 3: A <b>stable macroeconomic environment</b>, such as one characterised by low and stable inflation, allows firms to predict the changes in the prices of its factor inputs. This enables them to plan ahead in advance to ensure a stable supply of the inputs, so that they can sustain a high rate of output over time.</p> <p>Pillar 4: The absence of ill workers, or their lesser ability to function efficiently in their workplace, results in the slowing down of work processes. The converse is true. Therefore, a <b>healthy workforce</b> helps to increase the output per man-hour, or productivity of the economy.</p> <p>Pillar 5: As workers receive better <b>education</b> or <b>training</b>, their efficiency in handling complex processes increases, hence increasing their output per man-hour. Overall, this would improve the productivity of the economy.</p> <p>Pillar 6: Protectionism and restrictive rules on foreign direct investment reduces competition in an economy. Firms may therefore become complacent, and consequently employ less efficient methods in their production, hence reducing the rate of output per unit of input.</p> <p>Pillar 7: An efficient labour market helps to quickly match workers with the right skills to jobs, and this helps firms to increase their output per man-hour.</p> <p>Pillar 8: If a financial market can efficiently channel resources to investment projects with the highest expected rates of return, this will ensure higher returns for each unit of financial capital invested. This increases the productivity of the financial markets</p> <p>Pillar 9: The employment of appropriate technologies helps to increase the rate of output per unit of factor input. For instance, the introduction of assembly line operations would increase the output of each worker in an hour. An economy that is receptive to the implementation of new technology will therefore increase the productivity of an economy.</p> <p>Pillar 10: Larger markets allows firms to grow in size and hence reap economies of scale by increasing their scale of production. For instance, larger firms can split complex production processes into</p>	



	separate tasks to boost productivity. By specialising in certain tasks or processes, the workforce is able to produce more output in the same time, hence increasing productivity.	
(e)	<p><b>Discuss how a country such as India or China can have a high growth rate despite a low standing in the Global Competitiveness Index.</b></p> <p>A low standing in the GCI implies lesser competitiveness or a lower level of productivity due to institutional or policy factors.</p> <p>The economic growth, or the real output of a country, is however determined by both Aggregate Demand (AD) and Aggregate Supply (AS) factors, not just the productivity of its factors of production.</p> <p style="text-align: center;"><b>Figure 1: Economic growth due to increase in AD and AS</b></p> <p>The AD of an economy comprises Consumption (C), Investment (I), and Government Spending (G), and Net Exports (X-M). A high level of C, I, G, or (X-M) would lead to a high AD, and hence enable high economic growth.</p> <p>On the other hand, the Short Run AS of an economy is determined by factors affecting the cost of production, while its Long Run AS is determined by factors affecting both the <u>quantity</u> and <u>quality</u> of its resources.</p> <p>A low GCI or productivity level implies a relatively lower <u>quality</u> of resources and a lower LRAS. Hence it is not a significant contributing factor to China and India's economic growth.</p> <p>However, both China and India command large consumer markets as the two most populous countries in the world. Given this and their relatively lower cost of production (<i>see explanation of factors affecting AS</i>), both domestic and foreign direct investments (I) are high to capitalise on the high consumer demand and lower COP. (Their AS will be at AS2 instead of AS1 in figure 1). As both the Chinese and Indian governments regularly employ fiscal policy to stimulate their economies, G is also high. Together with the use of monetary policies (refer to answer in part (c)), the domestic components of C, I and G serve as important contributing factors to their AD (AD2 instead of AD1 in figure 1)), and hence lead to higher economic growth.</p> <p>Moreover, China and India's LRAS are boosted by their ample <u>quantity</u> of labour and natural resources due to their large land sizes. This has given rise to their comparative advantage in producing labour and capital intensive goods lower down the value chain, and both countries have become important exporting centres of such goods. (X-M) is therefore high for these countries.</p> <p>In conclusion, a high AD contributed by high C, I, G, and (X-M), and a high AS contributed by their vast quantities of resources, have enabled both China and India to sustain a relatively higher economic</p>	[8]

	growth (Y2 due to high AD and AS, instead of Y1 which represents a lower AD and AS) despite their low standing in the GCI.	
(f)	<b>Discuss whether competitiveness is more likely to be improved by adopting free market policies or by government intervention.</b>	[10]
	<p><b><u>Introduction</u></b></p> <p><b>Extract 5 has broken down competitiveness into 12 key supply side factors, and these can be achieved through the implementation of appropriate supply side (SS) policies.</b> However, these goals can either be achieved via free market (non-interventionist) policies such as deregulation and privatisation, or interventionist SS policies by the government. I will be examining which of the two approaches is more likely to boost an economy's competitiveness.</p> <p><b><u>Thesis: competitiveness is more likely to be improved by adopting free market policies</u></b></p> <p>Free market policies advocate minimal government intervention in the market, so that demand and supply forces could interact freely to allocate resources for production. Free market policies to encourage greater competitiveness would include deregulation and the privatisation of state companies.</p> <p>One of the aims of <b>deregulation</b> is to introduce greater flexibility in the resource markets for more effective resource allocation. For instance, the deregulation of labour markets such as in Australia and other countries through the introduction of more flexible wages and reduction of minimum wages, had enabled them to reap greater <b>labour market efficiency (Pillar 7)</b>.</p> <p>Another example is airline deregulation, such as in the US, which removed government-imposed entry and price restrictions. The global reduction of barriers of entry into the industry eventually led to the entry of more competitors, which compelled existing players to seek ways to cut costs and step up their productivity. The result is greater <b>goods market efficiency (Pillar 6)</b>.</p> <p><b>Privatisation</b> refers to the sale of state companies to the private sector in hope that their profit maximisation motives would help to reduce the problems of complacency and corruption (which lead to X-inefficiency) associated with state ownership. One example is the privatisation of British Airways by the UK in 1987. Not only would this help to increase goods <b>market efficiency (Pillar 6)</b> as private firms seek more productive methods, it would also help to improve <b>financial market development (Pillar 7)</b>.</p> <p>With the introduction of greater competition in the industries, we can also expect greater <b>technological readiness (Pillar 9)</b> and adoption of <b>technological innovation (Pillar 12)</b> among the firms as they employ technology to increase the efficiency of their production.</p> <p><b><u>Evaluation:</u></b></p> <p>However, while deregulation and privatisation can introduce more competition into the market, they can also lead to potential problems if introduced to especially public sectors. For instance, in the case of deregulation in the public transport sector, the introduction of new bus operators could lead to wastage of resources and greater traffic congestion as they duplicate bus routes.</p> <p>As for privatisation, in industries such as health care and education where they are providing merit goods with positive externalities that accrue to third parties, and where equity is a concern, profit maximisation by the producers would lead to an underconsumption of the goods.</p> <p><b><u>Anti-thesis: competitiveness is more likely to be improved by government intervention</u></b></p> <p>However, market forces alone cannot address the remaining pillars of competitiveness, but they require the intervention by the government.</p> <ul style="list-style-type: none"> <li>- The building up of a country's <b>infrastructure (pillar 2)</b> and <b>quality of country's business networks (pillar 11)</b> requires government spending as roads, utilities etc <b>are quasi-public goods which the private sector would not provide.</b></li> <li>- <b>Stability of macroeconomic environment (pillar 3)</b> requires the government to monitor the country's domestic and external sectors as an overarching institution, and to intervene with appropriate economic policies. For e.g. expansionary fiscal and monetary policies to counter downturns in the business cycle.</li> </ul>	

- Healthcare and education which are needed to boost the **health of the workforce (pillar 4)** and increase the level of **education and training (pillar 5)** are **merit goods with positive externalities which, if left to market forces, will be underconsumed**.
- Typically, only larger firms which are able to generate supernormal profits have the ability to ensure dynamic efficiency. Hence it is necessary for the government to step in to encourage **technological readiness (pillar 9)** and **technological innovation (pillar 12)** via the provision of subsidies, especially among the smaller firms. E.g. Singapore's Productivity and Innovation Credit (PIC) which benefits even SMEs as they can claim subsidies for measures to boost productivity through purchase of I.T equipment.

**Evaluation:**

Government intervention can however give rise to problems due to government failure. For instance, imperfect information may lead the government to over-subsidise healthcare services by miscalculating the External Marginal Benefit of its consumption, leading to either underconsumption or overconsumption of the services. Social inefficiency would therefore remain.

As for the implementation of macroeconomic policies, a time lag in for example, an expansionary fiscal policy, may lead to its effects only kicking in after the economic downturn, resulting in inflationary pressure afterwards.

**Conclusion**

In reality, both free market and interventionist SS policies are important to improve the competitiveness of an economy. Generally, free market policies address efficiency and anti-competitive problems, while government intervention is necessary in providing or supplementing what the free market would not sufficiently produce, as well as incentivise more companies to embark on technological advancement.

**Question 1**

In order for specialisation to be beneficial, it must be accompanied by exchange.

- (a) Explain how benefits to the economy can arise from specialisation and exchange. [10]  
 (b) Very often these benefits are not fully achieved in domestic and international markets. Discuss the reasons for this. [15]

**Part (a)**

Dissect Question Using the 3'Cs'	
<b>C – Command word</b>	Explain
<b>C – Concept (s)</b>	Benefits of Specialisation and Trade – using CA theory, Opportunity Cost
<b>C – Context</b>	Benefits to an economy, in general

**Schematic Plan**

<b>INTRODUCTION</b> - Define Law of Comparative Advantage. - State that exchange of goods refers to international trade. - State the assumptions.
<b>BODY</b> - Explain how an economy can benefit from specialisation and exchange (trade), with application of the concept of opportunity cost. Table or diagram is required to complement the explanation.
<b>CONCLUSION</b> - Provide a possible conclusion to the essay.

**Suggested Answers**

**Introduction**

- An economy can benefit from specialisation and exchange and is explained by the law of comparative advantage.
- The Law of Comparative Advantage states that trade or in this question, exchange, can benefit all countries if they specialise in the goods in which they have a comparative advantage in the production of a good, that is, she can produce the good at a lower opportunity cost than another country.

**Body**

Illustration of the Law of Comparative Advantage is based on the following assumptions:

- Only 2 countries (USA & Vietnam) are involved in the production and exchange of 2 commodities (Cars & Textile).
- Each country devotes half of her resources among the production of the 2 goods.
- There are constant opportunity costs of production of the goods.
- There are no transport costs, which might outweigh the benefits of specialisation and trade.
- There are no restrictions to trade (protectionism), so that one good may be bartered easily for another.
- There is perfect factor mobility within each country;
- There is factor immobility between countries (otherwise no need for trade).
- There are no emergencies or political or strategic reasons for a country to produce a good with the highest comparative cost.

	Production of textiles and cars before specialization and trade		Opportunity Cost of producing 1 unit of		Production with: USA: Partial Specialise with 75% resources in cars and 25% in textile Vietnam: Full specialization in textile		Consumption after trade by exchanging 12T for 12C TOT: 1T:1C	
Countries	Textiles	Cars	Textiles	Cars	Textiles	Cars	Textiles	Cars
USA	20	30	3/2 C	2/3 T	10	45	22	33
Vietnam	15	10	2/3 C	3/2 T	30	0	18	12
World	35	40			40	45	40	45

- Although USA is able to produce more of both goods than Vietnam,
- Both countries can still gain from trade if they specialize according to their comparative advantage which is determined by their opportunity cost in production or relative efficiency in producing the good.
- Before specialization, USA produces 20 units of textiles and 30 units of cars which means it has to give up 3/2 unit of cars for 1 unit of textile or 2/3 unit of textiles for 1 car.

- On the other hand, Vietnam produces 15 units of textiles and 10 units of cars which means it has to give up 2/3 unit of cars for 1 unit of textiles or 3/2 unit of textiles for 1 unit of car.
- This implies that USA and Vietnam have a lower opportunity cost or comparative advantage in producing cars and textiles respectively.
- Assuming USA will have partial specialization in cars using 75% of resources and 25% of resources in textiles while Vietnam goes into full specialization in textiles. Specialisation will result in mass production and enable the firms and industry to grow and thus enjoy both internal and external economies of scale.
- USA will produce 10 units of textiles and 45 units of cars and Vietnam will produce 30 units of textiles only.
- These countries will agree to trade if the terms of trade lie between:  $2/3 \text{ cars} < 1 \text{ textile} < 3/2 \text{ cars}$  or  $2/3 \text{ textiles} < 1 \text{ car} < 3/2 \text{ textiles}$ . Terms of trade (TOT) measures the rate of exchange of one good or service. The exact terms of trade will depend on the strength of demand and the relative bargaining powers of the countries involved.
- Assuming they agree on the terms of trade of 1 unit of textiles to 1 unit of cars and exchange 12 units of textiles for 12 units of cars.
- After specialization and trade, USA gains 2 and 3 units of textiles and cars respectively and Vietnam gain 3 and 2 units of textiles and cars respectively. The world output also increases by 5 units each for textiles and cars.
- It is clear that after specialization and trade, both USA and Vietnam gain from trade and consume beyond their PPC.

### Conclusion

- Although USA has absolute advantage in the production of both Textile and Cars, USA can benefit from specialisation and exchange if she specialises in producing and exporting the good (Cars) with relatively lower opportunity cost compared with Vietnam and import the good (Textile) with relatively higher opportunity cost compared with Vietnam.

### Part (b)

Dissect Question Using the 3'Cs'	
<b>C – Command word</b>	Discuss
<b>C – Concept (s)</b>	Policies implemented by domestic government and policies of trading partners. Whether assumptions of the benefits from specialisation and trade hold or not.
<b>C – Context</b>	Why benefits are not fully achieved, with reference to an economy, in general

### Schematic Plan

<b>INTRODUCTION</b> <ul style="list-style-type: none"> <li>The assumptions of the Law of Comparative Advantage may not hold.</li> <li>This essay will focus on a few assumptions mentioned in part (a).</li> </ul>
<b>BODY</b> <p><u>Why these benefits are not fully achieved in domestic markets.</u></p> <ul style="list-style-type: none"> <li>There are increasing opportunity costs of production of the goods.</li> <li>There is no perfect factor mobility within each country.</li> <li>However the policies implemented by the government may help to achieve these benefits.</li> </ul> <p><u>Why these benefits are not fully achieved in international markets.</u></p> <ul style="list-style-type: none"> <li>There are transport costs when countries exchange(trade) goods.</li> <li>There are restrictions to trade such as protectionism.</li> <li>However the policies implemented by the government may help to achieve these benefits.</li> </ul>
<b>CONCLUSION</b> <ul style="list-style-type: none"> <li>Provide a possible conclusion to the essay.</li> </ul>

### Suggested Answers

#### Introduction

- The benefits from specialisation and exchange can arise if the assumptions of the law of comparative advantage hold.
- However in the real world, these assumptions may not be valid, hence limiting the benefits enjoyed in the domestic and international market.

#### Body

##### Possible reasons why these benefits are not fully achieved in domestic markets.

##### There are increasing opportunity costs of production of the goods.

- Due to the law of increasing opportunity cost, a country will lose her comparative advantage as she specialises further in the production of a good. This may be caused by the expansion of the industry that drives up factor prices, or when the industry expands into less and less appropriate resources. Hence complete specialisation is not possible in the real world and the domestic country will not be able to enjoy the benefits from specialisation and exchange. Hence USA may not fully achieve the benefits when she specialises in the production of cars.
- However, in theory, it is possible that there is decreasing opportunity cost in production. The domestic country will thus be able to continue to enjoy the benefits.

##### There is no perfect factor mobility within each country.

- In order for a country to benefit from trade, she must be able to contract those industries in which she does not have a comparative advantage whilst expanding those which she has comparative advantage. Very often, because factors of production are not able to move quickly or efficiently into another use, it is difficult for the domestic country to realise the benefits of specialisation and exchange.
- The causes of immobility of factors of production can be due to occupational immobility of labour. When USA specialises in the production of cars, workers from other industries are not able to switch jobs immediately to work in the cars industry due to occupational immobility. They lack the skills to work in this industry. Thus with a lack of labour in the cars industry, firms are not able to increase the production.
- However the government of USA can employ supply-side policies such as providing retraining programmes to help workers obtain the requisite skills to work in the cars industry. Therefore the benefits from specialisation and exchange can still be realised, albeit in the long run.

(Note: Students can choose other types of immobility of factors of production in the essay.)

### **Possible reasons why these benefits are not fully achieved in international markets.**

There are transport costs when countries exchange (trade) goods.

- Despite the availability of cheap imports due to differences in comparative advantage, countries might not trade due to the prohibitively high transport costs for countries that are separated by vast geographical distances. Hence it is cheaper to produce goods in the home country rather than to import them. If the transport costs between USA and Vietnam are very high, USA may decide to produce both textile and cars, instead of specialising in the production of cars and exchange (trade) textile with Vietnam.
- However as technology improves, there are inventions of ships and planes with bigger storage capacity. This will help to lower the transport costs between countries and it will still be beneficial for countries such as USA and Vietnam to trade their goods.

There are restrictions to trade.

- The theory of comparative advantage assumes that countries are able to specialise and trade freely without any form of trade barriers such as tariffs, quotas or even restrictive rules and regulations. In reality, every now and then countries may be pressured by their domestic producers or workers to restrict imports in order to prevent job losses in times of recession. Sometimes, countries may slap tariffs to correct trade imbalances e.g. trade deficit or even duties to counter perceived unfair trade practice by their trade partners.
- Countries may also resort to protectionism for political reasons. This means that a country might produce goods in which it does not have a comparative advantage.
- If USA were to implement protectionism on imported textiles from Vietnam, USA would produce both textiles and cars, instead of specialising in the production of cars and exchange (trade) textile with Vietnam. The benefits from specialisation and exchange will not be achieved.
- Elaborate on how tariff or dumping will reduce the benefits from trade.
- However, with the signing of free trade agreements (FTAs), there will be little or no trade barriers between countries. This will encourage every country in the FTAs to specialise in the production of the goods which she has a comparative advantage in, and exchange other goods with her trading partners. Only if restrictions to trade are placed on every trading partner, that is, every country becomes a closed economy, then the benefits from specialisation and exchange will not be achieved in the international markets.
- Evaluation: FTAs may result in trade diversion from the country with comparative advantage or the more efficient one to the member nations.

### **Conclusion**

- There are some possible reasons to explain why the benefits of specialisation and exchange are not fully achieved in domestic and international markets.
- This leads to a lowering of consumer welfare as they are not able to enjoy a greater variety of goods at a lower price.
- However the policies implemented by the government will help to ensure that the benefits can still be enjoyed, although not fully.



## Question 2

In 2012 the UK had very poor harvests for grain and potatoes, which are major ingredients of many of the foods of UK consumers and also provide feed for much of Britain's livestock. At the same time there was a decline in the real incomes of many UK citizens, especially those on low incomes.

Using economic analysis, discuss the impact these events are likely to have had on UK consumers and farmers. [25]

### Schematic Plan

Introduction	
Impact on UK consumers → consumer surplus and total expenditure (TE) Impact on UK farmers → total revenue (TR which is equal to TE)  <i>Note:</i> <i>Under time constraint, it is more critical to focus your analysis on TE/TR and consumer surplus even though producer surplus is relevant.</i> <i>Also, it is better to analyse impact on two markets (grain+potatoes and livestock) thoroughly and not thin out the time for the third market – processed foods. Anyway, the analysis is very similar.</i>	
Body (Impact on ...)	
Market for grain (or potatoes)	Market for livestock
Poor harvests → Fall in SS → ↑P and ↓Q PED is needed for the extent of change Justify PED<1 since they are basic ingredients for many under foods and very few other substitutes → ↑↑P and ↓Q → ↑TE/TR  <u>Impact on consumers:</u> CS↓ and ↑TE  <u>Impact on farmers:</u> TR↑	↑Cost of production → Fall in SS → ↑P and ↓Q Justify PED<1 since beside seafood and vegetables, there might not be close substitutes to meat → ↑↑P and ↓Q → ↑TE/TR  <u>Impact on consumers:</u> CS↓ and ↑TE  <u>Impact on farmers:</u> TR↑
Fall in real incomes → Dd for grain (or potatoes) will change  <u>If considered necessities</u> → less than prop fall in dd → ↓P and ↓Q  <u>Impact on farmers:</u> → ↓TR <u>Impact on consumers:</u> CS↓  <u>If considered inferior good</u> (compared to livestock) → increase in dd → ↑P and ↑Q  <u>Impact on farmers:</u> → ↑TR  <u>Impact on consumers:</u> CS↑	Fall in real incomes → Dd for livestock falls  <u>If considered necessities</u> Impact on farmers: → TR falls  <u>If considered luxury good</u> (especially to the lower income) → more than proportionate decrease in dd  <u>Impact on farmers:</u> → TR falls significantly  <u>Impact on consumers:</u> CS falls
<u>Combined:</u> <u>For necessities:</u> <u>Impact on farmers:</u> → Likely ss falls more than dd (to justify: YED<1... very poor harvest...) → Q falls insignificantly while price increases less → TR increases, profits increase  <u>Impact on consumers:</u> CS↓  <u>For inferior goods:</u>  <u>Impact on farmers:</u> → TR ↑ significantly  <u>Impact on consumers:</u> → Assume ss falls more than increase in dd → CS likely falls	<u>Combined:</u> <u>For necessities:</u> → Impact on farmers will be similar to the market for grains (or potatoes) → TR may increase, profits increase <u>For luxury goods:</u>  <u>Impact on farmers:</u> → likely dd falls more than ss (to justify: YED>1...) → P falls, Q falls, TR falls significantly, profits fall significantly  <u>Impact on consumers:</u> CS↓  Combined → CS likely ↓
Evaluative Conclusion	



## Suggested Answers

### INTRODUCTION

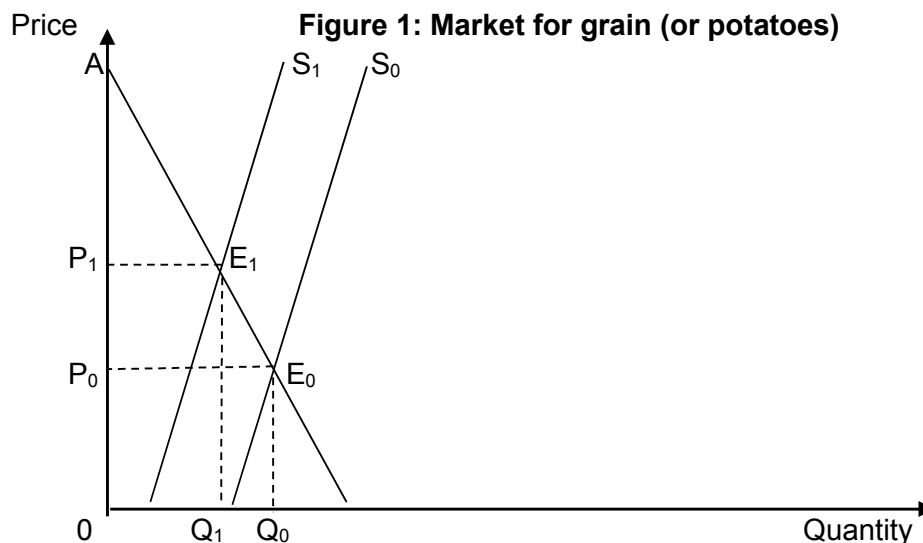
- The poor harvests for grain and potatoes will affect the supply of these goods and affect the cost of production for livestock and processed food.
- The decline in the real incomes of many UK citizens will affect the demand for food.
- This essay will assess how these events will likely affect UK consumers and farmers in the market for grain (or potatoes), market for livestock and market for processed food by examining the impact on consumer surplus (defined as the difference between the price that buyers are willing and able to pay for a good and the actual price paid; i.e. showing the welfare of consumers) and the total expenditure by consumers which is also the total revenue, earned by farmers.

### BODY

#### 1. Market for grain or potatoes

##### Supply factor

- Due to the poor harvest for grain or potatoes in UK, producers will be less willing and able to supply the good.
- This will in turn cause the price to rise and quantity to fall.
- To examine the extent of change and thus the impact on total expenditure or revenue, it is necessary to know the price elasticity of demand which is defined as the responsiveness of quantity demanded to a change in price, ceteris paribus.
- Given that there is a lack of close substitutes and a high degree of necessities for it (since they are major ingredients of many of the foods of UK consumers and also provide feed for much of Britain's livestock), the price elasticity of demand (PED) will be less than 1.
- Hence, when supply falls from  $S_0$  to  $S_1$  as shown in Figure 1 against a price inelastic demand curve,  $D_0$ , price increase from  $P_0$  to  $P_1$  and quantity falls less than proportionately from  $Q_0$  to  $Q_1$ .
- The gain in revenue (due to the increase in price) is more than the loss in revenue (due to the less than proportionate fall in quantity) leading to an overall **increase in total expenditure or revenue** from  $0P_0E_0Q_0$  to  $0P_1E_1Q_1$ .
- On the other hand, UK consumers will experience a **fall in consumer surplus** from area  $AE_0P_0$  to area  $AE_1P_1$ .



##### Demand factor

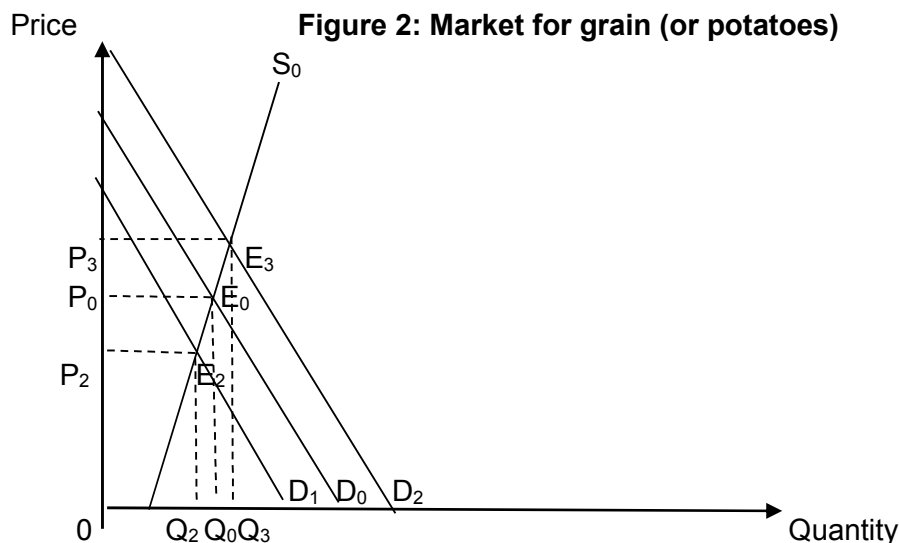
When the real incomes of UK citizens fall, the demand for grain (or potatoes) will change.

- (i) If grain (or potatoes) is considered as a **necessity** as consumers view it as essential for their dietary requirement, the income elasticity of demand (**YED**) will be **between 0 and 1**. When the real incomes of UK citizens fall, the demand for grain (or potatoes) will fall less than proportionately from  $D_0$  to  $D_1$ , causing both price and quantity to fall from  $P_0$  and  $Q_0$  to  $P_1$  and  $Q_1$  respectively as shown in Figure 2, assuming ceteris paribus. The **total revenue falls** from area  $0P_0E_0Q_0$  to area  $0P_1E_1Q_1$  and assuming ceteris paribus, UK farmers of grain (or potatoes) will see a **fall in profits**.

**Consumer surplus falls** when demand falls.

- (ii) If grain (or potatoes) is considered as an **inferior good** compared to livestock/ poultry/ meat/ fish, **YED < 0**. When the real incomes of UK citizens fall, the demand for grain (or potatoes) will increase from  $D_0$  to  $D_2$  as shown in Figure 2 as consumers switch from consuming the better quality food (e.g. poultry) to the inferior good (e.g. grain). The **total revenue increases** from area  $0P_0E_0Q_0$  to area  $0P_2E_2Q_2$  and assuming ceteris paribus, UK farmers of grain (or potatoes) will see an **increase in profits**.

**Consumer surplus rises when demand increases.**



### Synthesis/ Evaluation

Considering the combined impact of a fall in supply and a change in demand:

- (i) If grain (or potatoes) is considered as a **necessity**, as analysed previously, fall in demand will cause TR to fall but the fall in supply will cause TR to increase given that  $PED < 1$  and thus the final outcome on TR is **indeterminate**. If fall in supply is to a larger extent then it is likely that TR will increase. **The impact on TR depends on the relative shifts of demand and supply and in fact price elasticity of demand and supply.**

As analysed above, both the fall in supply and fall in demand will cause consumer surplus to fall, hence there will be a significant **overall fall in consumer surplus**.

- (ii) If grain (or potatoes) is considered as an **inferior good**, the fall in supply and increase in demand **will reinforce each other and cause an increase in total revenue**.

**As analysed above, a fall in supply will cause consumer surplus to fall but a rise in demand will cause it to rise so the combined effect is indeterminate.**

## **2. Market for livestock**

### Supply factor

- From the analysis above, we can conclude that the price of grain (or potatoes) has increased. As they are feed for much of Britain's livestock, the cost of producing the livestock has increased, leading to farmers being less willing and able to supply the good.
- The fall in supply will cause price to rise and quantity to fall and the extent of change will depend on price elasticity of demand.
- Assuming a lack of close substitutes and a high degree of necessities for livestock,  $PED$  will be less than 1. Hence, when supply falls against a price inelastic demand curve will cause price increase and quantity falls less than proportionately.
- The gain in revenue (due to the increase in price) is more than the loss in revenue (due to the less than proportionate fall in quantity) leading to an overall **increase in total revenue**.

On the other hand, UK consumers will experience a **fall in consumer surplus** from area  $AE_0P_0$  to area  $AE_1P_1$ .

**Note: There is no need to draw a different diagram given that the direction of change in SS and demand is price-inelastic. However, if you were to analyse  $PED > 1$ , it is necessary to draw a different diagram that illustrate a relatively price elastic demand in which a fall in supply will result in a fall in TR.**

### Demand factor

When the real incomes of UK citizens fall, the demand for livestock will fall, assuming it's a normal good.

- (i) If livestock is considered as a **necessity** as consumers view it as essential for their dietary requirement, the income elasticity of demand (**YED**) will be **between 0 and 1**. When the real incomes of UK citizens fall, the demand for livestock will fall less than proportionately, causing both price and quantity to fall and thus TR to fall.
- (ii) If livestock is considered as a **luxury good** (especially to the lower income group),  **$YED > 1$** . When the real incomes of UK citizens fall, the demand for livestock will fall more than proportionately. The extent of the **fall in total revenue will be greater** compared to the case where livestock is considered as a necessity.

**Consumer surplus will fall**, regardless of whether livestock is considered as a necessity or a luxury good.

### Synthesis/ Evaluation

Considering the overall impact of a fall in supply and a fall in demand,

- (i) If livestock is considered as a **necessity**, and assuming the fall in supply is more than the fall in demand, the impact on farmers of livestock will be similar to the impact on farmers of grain (or potatoes) where **total revenue** will **increase**.
- (ii) If livestock is considered as a **luxury good**, the more than proportionate fall in demand ( $YED > 1$ ) might be more than the fall in supply, causing price to fall and quantity to fall. This will cause **total revenue** to **fall** significantly.

The combined fall in supply and demand will cause an **overall fall in consumer surplus**.

### CONCLUSION

In conclusion, the above events will likely cause consumers to lose out as **consumer surplus falls in both markets**. For farmers of grain (or potatoes), they will likely lose out if grain (or potatoes) is considered as necessities as total revenue fall but they will likely gain if grain (or potatoes) is considered as an inferior good. For farmers of livestock, where livestock is likely to be considered as a normal good, they will likely lose out as total revenue falls. Hence, the **impact on farmers depends on how people view the different goods**, as one person's inferior good might be another person's luxury.



### Question 3

There is considerable agreement over the need for governments to provide public goods. There is less agreement over the extent to which markets fail because of imperfect information.

- a) Explain why markets may fail in the case of public goods and where information is imperfect. [10]  
b) Evaluate the alternative policies that are adopted by the Singapore government to correct for both of these types of market failure. [15]

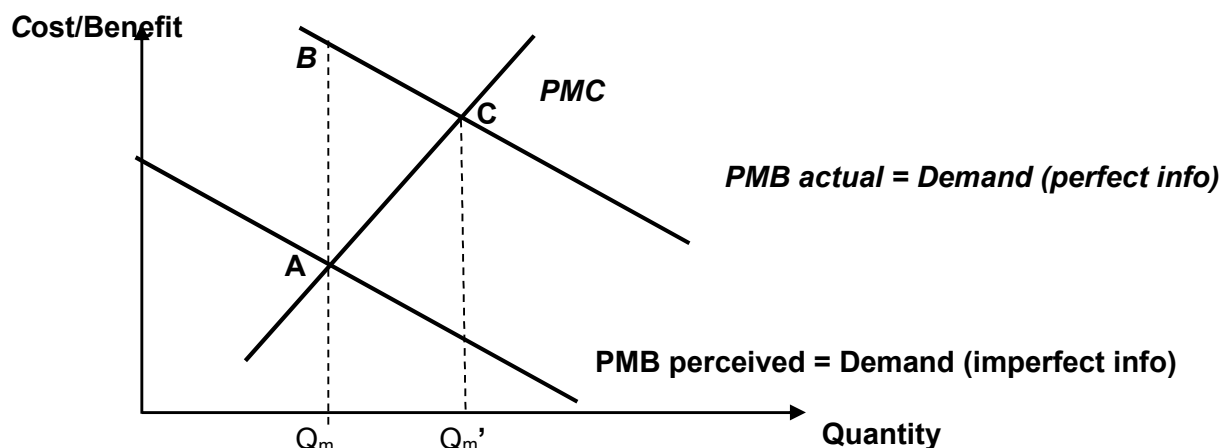
Simple schematic plan for a:

<b>Introduction</b> Define market failure.
<b>Body</b> Development 1: Explain public goods resulting in complete market failure Non-excludable (Free-rider problem) Non Rivalry (MC=0) Development 2: Explain how imperfect information leads to under/over consumption/production, leading to partial market failure.
<b>Conclusion</b>

### Suggested Answers

<b>INTRODUCTION</b>	
Definition	Market failure occurs when free markets, operating without any government intervention, fail to deliver an efficient allocation of resources to produce goods and services.
Approach	This essay will be explaining why the market mechanism will fail to provide the correct prices for both public goods and goods with imperfect information, allowing government intervention to improve resource allocation.
<b>BODY</b>	
<b>Public Goods</b> For public goods, use the standard SEE approach S: A public good is non-excludable in consumption E: Non-excludability in consumption: Once provided, it is not possible / is too costly to prevent <b>non-payers</b> from consuming the good.  E: National defence: once SAF is set up to defend Singapore, it is not possible / is too costly to collect payments from users. Hence, non-payers could also get to enjoy the good.  Due to the characteristic of non-excludability in consumption of public goods, this leads to the problem of free ridership as consumers will not want to pay for the goods; <b>there is an absence of price signal</b> , and market fails.  S: A public good is non-rivalry in consumption E: Non-rivalry in consumption: an additional person consuming the goods does not diminish the amount available to others. Hence, the marginal cost of providing the good to <b>one more person is zero</b> . If the <u>marginal cost is zero, the efficient price to charge should be zero</u> (since allocative efficiency is achieved at $P = MC$ ). If a price were charged, there would be a welfare loss to society. But no private firms whom are assumed to be profit-motivated would be willing to supply the good if the price is zero! E: National Defence: an additional person using SAF protection does not mean another person will feel less protected. The characteristics of non-excludability and non-rivalry thus lead to <b>zero production i.e. no resources will be allocated to the production of public goods if left to private producers, resulting in complete market failure</b> .	
<b>Market Failure due to Imperfect Information</b>	
The lack of perfect information is a major cause of market failure. The free market allocate resources efficiently on the assumption that all consumers and producers have full or perfect information about the market and products and hence are able to make <b>optimal choices</b> to maximize their welfare. However, in reality this is not true due to <b>incomplete Information</b> .  Consumers may not buy some products even though they will benefit from them because they are ignorant of the benefits they bring. For example, consumers may underestimate their true private marginal benefits from colorectal cancer screening due to imperfect information. For example, if consumers knew that colorectal cancer is now the most common cancer in Singapore affecting both males and females, they would realise that the benefit of such screenings is that it has a good chance of detecting the cancer early. Furthermore, the early stage of colorectal cancer is often localised to the bowel and hence early diagnosis can often lead to a complete cure.	

**Figure 1: Imperfect information on actual PMB of cancer screening**



Assume that there are no positive or negative externalities.

As seen in Figure above, with imperfect information, consumer demand for colorectal cancer screenings is lower at PMB perceived as they underestimate the actual benefit of such screenings.

As such, the market equilibrium quantity would be at  $Q_m$  where **PMB perceived = PMC**.

However, the true private marginal benefit should be at PMB actual.

Hence, with perfect information, the market equilibrium quantity would be higher at  $Q_m'$  where **PMB actual = PMC**.

Hence the ignorance of the full benefits of colorectal cancer screenings causes an **underconsumption**  $Q_m' - Q_m$  of such screenings.

Area  $Q_m'Q_mBC$  is the incremental private benefit foregone for the underconsumption  $Q_m' - Q_m$ .

Area  $Q_m'Q_mAC$  is the incremental private cost not incurred for the underconsumption  $Q_m' - Q_m$ .

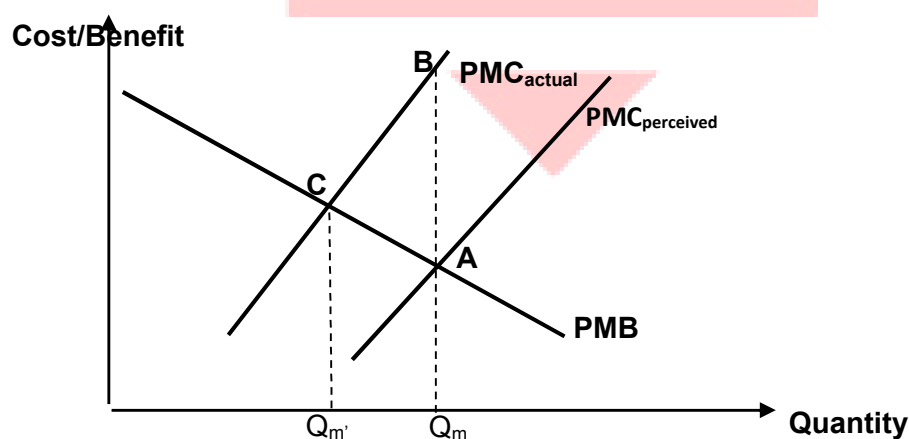
Since the incremental private benefits foregone exceeds the incremental private costs not incurred for underconsumption  $Q_m' - Q_m$ , area ABC represents the **deadweight welfare loss** due to underconsumption of  $Q_m' - Q_m$ .

Market fails as too few resources are allocated to produce health screening.

Besides, imperfect information can also arise due to differences in perceived and actual costs. For example, smokers may only consider the price of cigarettes as costs and ignore the possible medical costs that come with the health problems arise from smoking. As a result, perceived costs are lower than actual and leads to overconsumption.

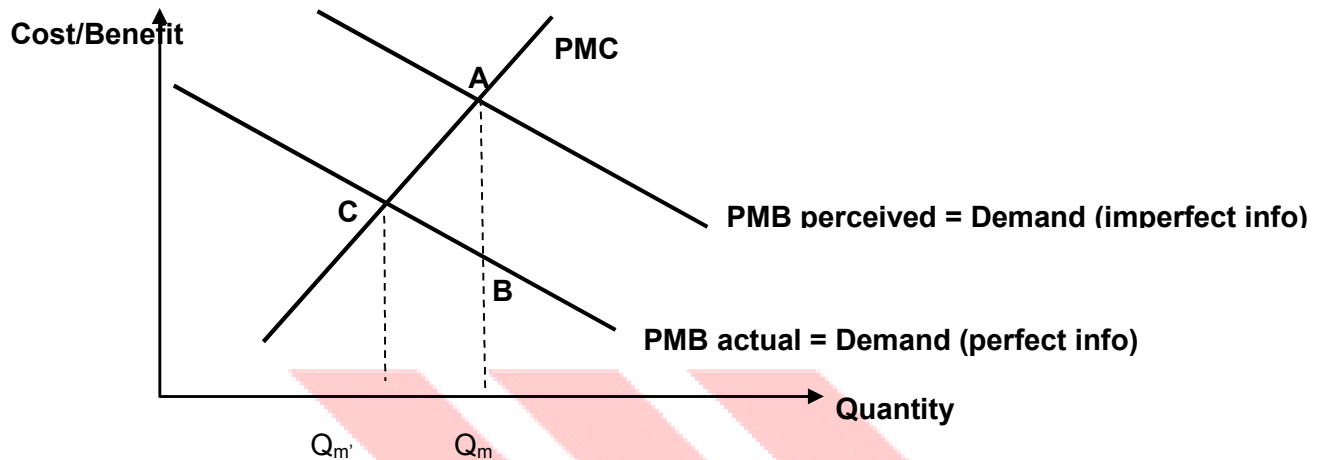
*Note: If there is no elaboration of the divergence in perceived and actual benefits, you need to elaborate this part on divergence in cost with details and the help of the diagram below.*

**Figure 2: Imperfect information on actual PMC of smoking**



*Note: It is possible to explain imperfect information from divergence in benefits – they key difference is in the exemplification. E.g. Smokers think that smoking means being cool and will enable them to have more friends. However in actual fact, smoking is deemed to be unacceptable and result in lesser friends. In this case, the diagram should be as follow:*

**Figure 3: Imperfect information on actual PMB of smoking**



**Note: All the 3 diagrams have different areas of deadweight loss. Do learn with understanding.**

### Conclusion

Thus, when prices are absent from the economy (the case of public goods) or when prices incorrectly reflect the true costs and benefits to society (the case of imperfect information), allocative efficiency may not be reached with the price mechanism. Hence government intervention can improve resource allocation, which will be the focus in the next part.

### Simple Schematic Plan for b

INTRODUCTION	
BODY	
Policies that overcome imperfect information	Policies that provide public goods
Correct ignorance of benefits to oneself through education	Government provision
Explain how the policies work and their possible limitations	
Reach a synthesis comparing the policies	
CONCLUSION	

### INTRODUCTION

The Singapore government is current using various policies to correct these two causes of market failure. This essay will aim to explain how they work and possible limitations.

### Solution to Public Goods

Due to the problem arising from the non-rivalry and non-excludability characteristics of public goods, no free markets will provide them and hence the government has to provide public goods. In Singapore, National Defence is provided thru the Singapore Armed Forces, managed by the Ministry of Defence. Since 2002, defence spending has been between 4.5 percent and 5 percent of Singapore's Gross Domestic Product.

The government is in the best position to provide public goods since their objective is not to maximise profits, unlike that of the private producers. In their pursuit to maximise social welfare, the government will take into account the full social costs and benefits generated by public goods. The government can choose to produce the goods or services themselves or they can outsource to a private company to do it but bear the full cost.

### Limitations:

- **How much and how to produce:** Without price signals, it is not easy for the government to decide the optimal size of the army and weapons and may result in overproduction or underproduction and thus resources are still not allocated in an optimum way. For the former, it will cause a strain to the government budget. **Evaluation:** Even so, it is still probably better than no production in a free market at all as defence is paramount to a country's safety and performance of an economy.
- **Opportunity cost:** Governments, like any economic agents, rarely possess complete information on which to base a decision. There is an issue of how a government can possibly identify accurately the optimal level of public demand for the provision of public goods. E.g. How much is enough? And how much is too much? Singapore spending about 5% of annual GDP on defence have opportunity cost, healthcare and education could use the funds instead.
- **Productive inefficiency:** To have a strong national defense system, you would also need military goods to be produced. If Government produced those good using taxes to finance, there will less incentive to minimize cost, leading to X-inefficiency. They may use resources inefficiently.

- To minimize X-inefficiency, Singapore privatized its weapons industry, thru Chartered Industries, now part of Singapore Technology Engineering. The weapons made locally will not be subsidized in any way, meaning if SAF were to purchase these weapons instead of sourcing them from overseas, SAF must pay the full price. This was one of the legacy of the late Dr Goh Keng Swee when he was Defense Minister (See attached video on GKS). This helps to ensure that the locally produced weapons, such as SAR 21, must compete on a level playing field with foreign weapons, such as M16s.

## Solutions to correct imperfect information

### Public Education

For ignorance of own benefits, the Singapore government uses public education to encourage the consumption of healthcare products or services. The Health Promotion Board in Singapore often organizes health education program in schools and runs national campaign nationwide to inform the public about the benefits of healthcare. Residents will be more aware of the full social benefits of health to themselves as well as to society at large. With such awareness talks and campaigns, the more accurate assessment of PMB and thus moving  $PMB_{perceived}$  nearer to or even reach the  $PMB_{actual}$ .

Referring to Figure 1, with perfect knowledge, consumers will be able to know the actual PMB of colorectal cancer screening and hence consume at the socially optimal level  $Q_s$  where  $PMB_{actual} = PMC$ , eliminating the welfare loss area ABC.

Similarly, for smoking, education will make smokers more aware of the harms from smoking and cut back smoking as costs are deemed higher. Referring to Figure 2, with perfect knowledge, consumers will be able to know the actual PMC of smoking and hence consume at the socially optimal level  $Q_s$  where  $PMC_{actual} = PMB$ , eliminating the welfare loss area ABC.

### Limitations:

- Education is a long drawn process that involves changing mindsets.
- It is often difficult to change the mindsets of people in adopting a healthier lifestyle or to go for immunization to prevent certain diseases.
- As for smoking, it is a highly addictive habit and even when smokers are aware of the actual cost, they may not have the will power to stop smoking. And it seems that smoking amongst youngsters is still on a rise.
- **Evaluation:** Nonetheless, given time and as the society progresses, it is still possible for Singaporeans to adopt a healthier lifestyle and give up bad habits.

### Regulation

Regulation could be employed to correct market failure arising from incomplete information to correct the PMB from  $PMB_{perceived}$  to  $PMB_{actual}$ .

### Examples:

- **Mandatory food labeling/health warning**  
Important information that affects the welfare of consumers have to be made available on the food packaging (e.g. nutritional guide for food products) or health warning on cigarettes pack. The latter provides information to potential smokers on the health risks involved in smoking e.g. the risk of contracting mouth, throat and lung cancer.
- **Cigarettes advertisements**  
The government has put into place laws that ban overt cigarette advertisements glamourising smoking in national newspapers, cinemas, TV & radio and other mainstream media platforms. In some countries, retailers are not allowed to openly display cigarettes for sale. This will reduce demand for cigarettes.

### Laws against incomplete information (e.g. due to young age)

Retailers are also banned from selling cigarettes to under-aged smokers which will reduce demand for cigarettes.

**LOOPHOLES:** Consumers or producers will always try to beat the system. E.g. 18 year old and below are not allowed to smoke but smokers can always request their older friends to purchase cigarettes for them. And there are vendors who ignore the law and still sell to youngsters.

**Evaluation:** Vendors who break the law are punished by slamming them with fines and removal of license to sell cigarettes. Such is made known publicly as a warning to other vendors.

### Subsidy and taxation

Other indirect intervention can be through subsidy and taxation. These may not correct imperfect information, the root problem. But subsidy lowers the cost of vaccination or health screening and thus increase the level of consumption. Similarly, taxation increases the cost of smoking and forces some smokers to reduce the number of cigarettes they smoke daily and the high price may also deter others to start smoking.

### Synthesis and Conclusion

Hence, the Singapore government has implemented appropriate policies to correct **market failures** arising from **public goods and imperfect information**. Even though these policies may not completely correct the market failures, government intervention in the form of subsidies & education to correct underconsumption and taxes & campaigns to correct overconsumption/production will definitely reduce the extent of market failure due to imperfect information.



As for public goods such as national defense, even though the government is financing the entire SAF with a hefty 5% of GDP annually, our first Defence Minister Dr Goh Keng Swee took care to ensure that the private sector is involved as much as possible, to ensure productive efficiency.

Resources are hence allocated more efficiently and the equilibrium level of output will be moved closer to the socially efficient level.



#### Question 4

	\$ billion
Private Consumption Expenditure	129
Gross Fixed Capital Formation	77
Government Consumption Expenditure	34
Exports of goods and services	531
Import of goods and services	444
GDP	327

- (a) Economies consist of several key sectors such as households, firm, government and the rest of the world. Explain the relative importance of these key sectors of the circular flow of income in determining the national income in Singapore. [10]
- (b) Discuss the likely effects on Singapore's national income and its components when its exchange rate appreciates. [15]

#### Part A

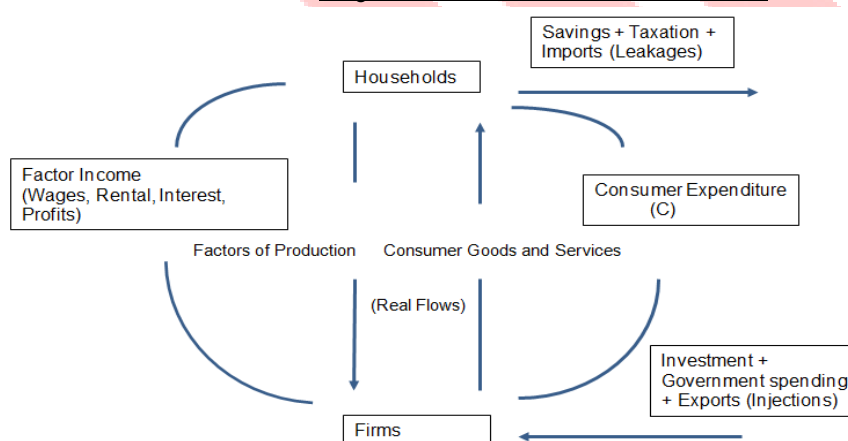
##### Introduction

In this essay, I will be explaining how injection and withdrawal within the circular flow of income model can be used to explain the equilibrium level of national income. The essay will also examine the relative importance of the different components of the aggregate expenditure, and its impact in determining the national income in Singapore.

##### Body

In a **simple two sector economy** that consists of firms and households, there will be the flow of factor payments from firms to households. This is because households own all the factors of production (labour, land, capital and entrepreneurship), and hence they would receive wage, rent, interest and profits from the firms in return for these factor services. Households in turn pay money back to firms, buying the goods and services produced by firms. This is captured as consumer expenditure in Diagram 1 and thus there is a circular flow of payments from firms to households and so on.

Diagram 1: Circular Flow of Income Model



In the real world, not all of household's income is spent on consuming goods and services produced by the firms. Some are **withdrawn (W)** in the form of savings, taxes and imports. **Savings** is the income that households choose not to spend but to put aside for the future. These are normally deposited in financial institutions such as banks. Part of household's income is paid out as **taxes** to government. Some taxes are such as personal income taxes are levied directly on a person income. The last leakage from the circular flow diagram in a four-sector economy is **imports**. This is the income from households that is spent on imported goods and services. Although the money that households spend initially flows to domestic retailers, it will eventually flow abroad either when the retailers or wholesalers themselves import them or when domestic manufacturers purchase imported inputs to make their products.

In a four-sector economy, we also note that the demand for firm's output arises not only from household expenditure but other **injections (J)** such as investment, government expenditure and exports. **Investment** is the money that firms spend on machineries, equipment or on building up stocks of inputs, semi-finished or finished products (inventories). **Gov't** also spends on goods and services of firms. Some examples of gov't expenditure are spending on roads, hospitals and schools. The last injection **exports expenditure**, flows into the circular flow diagram from overseas when foreigners buy our exports (of goods and services)

##### Use of J = W model to explain Ye

If we refer to **diagram 1**, the equilibrium level of national income is attained when flow of withdrawals is equal to the flow of injections into the economy. If there is now a rise in injections, due for example to a rise in government expenditure, aggregate demand, which consist of  $(C + J)$  will be higher. Firms will respond to this by using more factor resources such as labour and thus pay out more income to households. Household consumption will rise and so firms will sell more. Firms will respond by producing more and thus use more resources. Household incomes will rise again. Consumption and hence production will rise again and so on. There will be a multiplied rise in incomes and employment. This is known as the **multiplier effect**. This is where an initial increase in aggregate demand of say \$10 billion leads to an eventual rise in national income that is greater than \$10 billion. The process, however, do not

continue forever. Each time households' income rise, households save more, pay more taxes and buy more imports. In other words, withdrawals rise. When withdrawals have risen to match the increased injections, equilibrium will be restored and national income will stop rising.

### Synthesis

From the table and statistics presented for the Spore economy, we can see that the size of the national income in an economy is determined by the size of C, I, G and (X-M). In Singapore, household consumption spending, C accounts for only 39% of our national income (GDP). When we compare ourselves to countries such as US and UK where C can account for about 60-70% of the GDP; the size of C relative to GDP is relatively smaller in Singapore.

We also observe that in comparison to the other components, X at 162% of GDP and M 136% of GDP mean X and M are the greatest injection and withdrawal of the circular flow of income of Singapore. The sum of exports and imports (X + M) is 3 times of the size of the GDP and that means the equilibrium income (i.e. GDP) is largely due to the size of the external sector. Singapore is therefore very reliant on external trade for the size of our national income and it would also mean that the economic performance of our trading partners is essential for the health of the Spore economy.

Even though G and I as compared X are relatively small, Spore still tries to "woo and court" foreign companies to operate out of Singapore. This influx of FDI though small in relative terms is vital in terms of technology transfer, contributing to the productive capacity of Singapore. Government expenditure has also an important part to play especially in when there is recessionary pressures, and the Singapore government has in the past increased G so as to compensate for the fall in C, I and X.

### Conclusion

The size of a country's national income is therefore dependent on the size of each component that make up aggregate expenditure. To overcome the constraints of being a small and resource-scarce economy, Spore must therefore rely on external trade so as to increase our national income.

## Part B

### Introduction

Singapore has largely relied on a gradual and modest appreciation to grow its economy. This essay will examine how an appreciation of the Singapore dollar will affect the various components of Aggregate Expenditure, which in turn affect the national income of Spore using the AD-AS framework.

### Body

#### No/Little Impact on G, C and I:

- An appreciation would not have impact on government expenditure as it is dependent on government's policies based on society's needs and economic situation rather than exchange rates.
- Consumption expenditure as the level of autonomous consumption is affected by the factors such as expectations of future incomes and prices, wealth and availability of credit. If an appreciation helps to keep inflation low and hence maintain the real value of wealth accumulated then it might be possible that an appreciation may encourage consumption expenditure.
- The two main factors that affect investment are Marginal Efficiency of investment (MEI) and the level of interest rates. When choosing to invest, domestic firms will compare MEI to the level of interest. The level of interest represents the cost of borrowing and if expected rate of return is greater than interest rate, then it makes it worthwhile for firms to increase investment. And MEI will increase if there is good business sentiments or lowering corporate taxation. Thus, appreciation will have little or no impact on domestic investment. However, investment also consists of Foreign Direct Investment (FDI) and even though an appreciation of the Sing Dollar will make it relatively more expensive for foreigners to invest in Singapore, the main consideration for FDI inflow is more dependent on other longer term considerations rather than the appreciation of the Sing dollar. If the appreciation is expected to be continued then it is possible that FDI will continue to flow into the country. Hence, impact of appreciation on FDI depends on the expectation of the future direction of the currency.

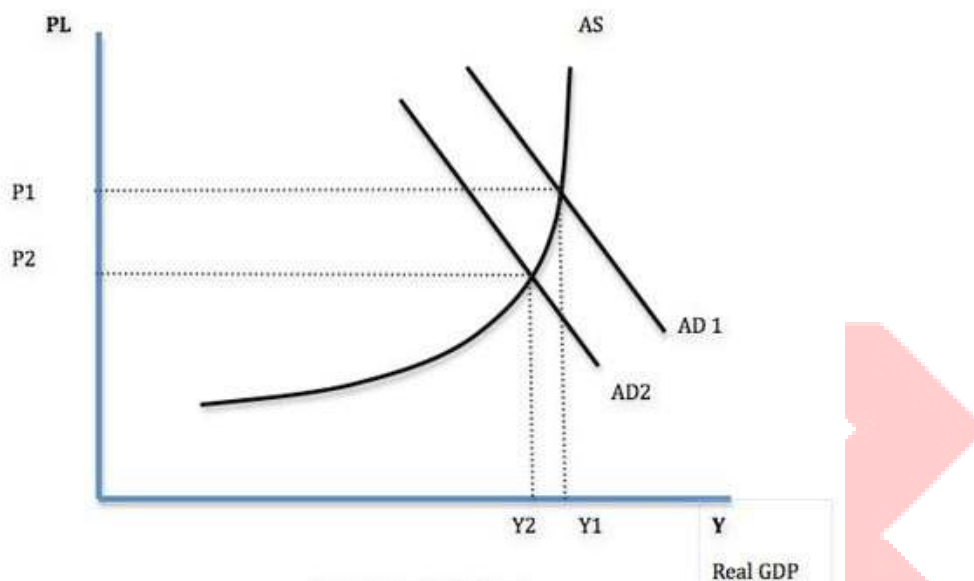
#### Significant Impact on X, M and X-M:

- An appreciation will cause Singapore's exports to be relatively expensive in terms of foreign currencies and foreign imports to be relative cheap in terms of SGD.
- Demand for Singapore's exports most likely price elastic as there are substitutes and thus a rise in price in terms of foreign currencies will result in a more than proportionate fall in quantity demanded and thus export revenue (X) will fall.
- *Note: Demand of exports in SGD will fall and X will fall.*
- On the other hand, Spore is a small country and lacks natural resources and most of the country's goods are imported, thus Singapore consumers will now find imports to be relatively cheaper and assuming demand is price elastic, this will lead to an increase in quantity demanded and eventually a rise in import expenditure(M).
- *Note: Some may argue that  $PED_m < 1$  for Singapore and thus a fall in  $P_m$  will cause quantity to rise less than proportionate and import expenditure will fall. If so, students will 'skip' the next bullet point and should go on to explain as long as Marshall-Lerner condition holds, BOT still will fall.*
- Hence, a fall in export revenue together with the increase in import expenditure will cause BOT to fall.
- In fact, this will hold true as long as the Marshall-Lerner condition (the sum of price elasticity of exports and imports is more than 1) holds.

### Appreciation dampen economic growth

- Although an appreciation have some impact on C & I, the impact will only be more acutely felt in the X and M. We would then expect a fall in aggregate demand due to a decreased in net exports (X-M). This would lead to lower AD, causing lower economic growth and increased unemployment.

#### Impact of appreciation on AD/AS



These impacts can be shown via the AD-AS framework. Assuming Marshall-Lerner condition holds, an appreciation leads to lowering of net exports revenue and contributes to lower AD (or a slower growth of AD) from AD1 to AD2, leading to lower inflation (from P1 to P2) and a lower level of national income (from Y1 to Y2). This also means a lower level of economic growth for Singapore.

#### The extent of decrease in NX and impact on NI:

- The fall in BOT may not hold in the short-run. If demand for imports and exports is very price inelastic such that ML condition does not hold, then the current account could even rise. This can be a result of contractual agreements. If so, then appreciation of the Sing dollar will lead to greater level of aggregate demand and promote economic growth. **Evaluation:** *But given time when contracts lapse and consumers to adjust to the appreciation, ML condition most likely holds and BOT still will fall with appreciation.*
- The impact of an appreciation on national income depends on the state of the economy. If the economy is in a recession, then an appreciation will indeed lead to slow or negative growth and contribute to higher unemployment. However, if the economy is in a boom, then an appreciation will help reduce inflationary pressures and impact on real income is minimal.
- It also depends on other policies. If the government uses supply-side policies to improve the productivity and thus lower the cost of production, it may mitigate the rise in price of exports due to the appreciation. In fact, if there is improvement in the quality of the exports, the demand instead of falling, may rise instead as foreign importers are willing to pay a premium for good quality. **Evaluation:** *However, with the current recessionary situation in EU and the fact that China's growth is slowing, countries would therefore be more sensitive to the increased price of Singapore exports.*

Besides, an appreciation could lower inflation because import prices are cheaper. The cost of imported goods and raw materials will fall after an appreciation, e.g. imported oil will decrease, leading to cheaper petrol prices. This can cause SRAS to rise, leading to a fall in GPL and a rise in Y.

#### Conclusion

According to economic analysis, an appreciation of the Sing dollar could lead to lower economic growth. The question as to why the Singapore government is still pursuing a policy of modest and gradual appreciation of the Sing dollar must be viewed within the context of containing import price push inflation. Some of the reasons why the Singapore economy is still growing despite a strong Sing dollar is that the Spore government has also paid close attention to supply side aspects; spearheading productivity efforts such as training of workers, investing in R&D. All these efforts could serve to increase the productivity capacity of the Singapore economy and leads to improved competitiveness of the Spore economy (and our exports) even though the Sing dollar is strong.

### Question 5

In 2011, Singapore's GDP at 2005 prices grew by 4.9%, the total population grew by 2.5%, inflation (as measured by the consumer price index) was 5.2% and overall unemployment stood at 1.9%.

Source: <http://www.singstat.gov.sg/stats/latestdata.html>, accessed 30 January 2013

Discuss the limitations of these statistics in both assessing the change in the standard of living in the Singapore economy in 2011 and comparing it with that of other economies. [25]

Dissect Question Using the 3'Cs'	
C – Command word	Discuss: thesis/anti-thesis expected; evaluation expected
C – Concept (s)	Standard of living → limitation of statistics given and other Indicators needed/ used for domestic assessment and cross country comparison
C – Context	Singapore and other economies (more than 1 economy expected)
<b>INTRODUCTION</b> Key words: Discuss, limitations, standard of living, Singapore, compare other economies Issue: Limitations of statistics given to assess change in standard of living in Singapore and compare over space Approach: 2 parts to question: 1. consider limitations of statistics given to determine standard of living in Singapore 2. consider limitations of statistics in comparing standard of living with other economies	
<b>BODY</b>  <u>Information provided leads to conclusion that there is an improvement in standard of living in Singapore</u>  Define SOL: Involves economic and social well-being of people in a country Includes both material and non-material aspects of life Material aspects: include quantity and quality of goods and services available for consumption Non-material aspects: include quality of environment, leisure hours, level of stress, etc  GDP grew by 4.9%: Indicates an improvement in Singapore's material SOL Total value of final goods and services produced has increased by 4.9% in real terms as 2005 (Base Year for adjustment)  Inflation 5.2%: General price level in Singapore has risen by 5.2% Same basket of goods is now more expensive as compared to period before However, given the GDP figure at 2005, the effects of inflation have already removed.  Population grew by 2.5% With real GDP increased more than population growth (2.4%) so real GDP/capita has increased → An average citizen can buy more goods and services.  Unemployment rate at 1.9% Low unemployment rate which suggests that with less unemployed, households have more income earned which they can use to buy more goods and services and even better quality ones. Thus, material SOL would have improved Nevertheless, there is no comparison available with unemployment rate in previous period. If unemployment rate was lower than 1.9%, then material SOL would have fallen. Vice versa There is also no indication of who are employed in Singapore. If the low unemployment arises due to large employment of foreigners from Singapore's labour force, then it is not an accurate assessment of SOL in Singapore as some Singaporeans continue to remain unemployed and have lost of income. To worsen the matter, some Singaporeans may choose to give up on job search or continue their studies. This will then not be captured in the unemployment rate which may not give a clear indication of change in SOL in Singapore  <u>Limitations of statistics on assessing SOL (with evaluation and other indicators needed)</u>  The above statistics provided indicate that there is an improvement in SOL in terms of economic well-bring of people in Singapore. However, the information provided has its limitations as they fail to give more details like the composition and distribution of the GDP to assess the change in SOL – whether the people are indeed better off and it also does not consider the social aspect of SOL.  Other statistics needed to be considered for better assess of SOL in Singapore:  <b>Composition of GDP</b> GDP measures a country's level of production but may be a poor indicator of the consumption level by the country's residents. As a	

country's output includes both consumption goods and investment goods but current SOL depends only on consumption goods, there is limitation in using GDP figure itself as a measurement of SOL

It is thus, important to consider the composition of GDP as well as its size for judging changes in consumer welfare

E.g. if the growth of 4.9% is due to expenditure on defence or capital goods, then SOL of consumers are definitely worse off especially if these goods are produced at the expense of consumer goods

However, considering that there is a fall in real GDP/capita and that this fall in real GDP is due to fall in expenditure on defence or capital goods, then SOL of consumers could be better off as more consumer goods are produced instead of the former

### **Income distribution**

Although real GDP per capita has increased, we cannot conclude that an individual's SOL has indeed improved. If the increase in real GDP is due to the higher income group enjoying a significant rise in income, the SOL of the lower income majority would have been overstated.

Gini co-efficient would be needed for a better assessment in change of SOL in Singapore.

### **Non-material/intangible aspects**

GDP statistics include only monetary transactions. If a non-monetary activity becomes a monetary transaction, then the GDP figure will increase without a corresponding increase in welfare

E.g. more housewives entering the workforce will mean an increase in GDP. However, there will be a loss in the quality and quantity of services rendered to their families and non-material SOL will fall

Changes in hours of work and the level of stressful lifestyle are also important to assess SOL. Although material SOL has improved according to a rise in real GDP/capita, non-material SOL may have fallen if the rise in real GDP is due to longer working hours and more stressful lifestyle

Other considerations such as negative externalities (whether external costs worsen with growth)

### **Limitations of statistics on comparing SOL with other economies**

In comparing SOL with other economies, percentage figures (real GDP growth rates and population growth rates) are not really useful. Absolute figures will be more useful to assess whether the SOL is higher or lower than another country for a particular year.

**PPP adjusted GNP per capita** is required for comparing material SOL across countries.

The GNP per capita of different countries is denominated in their home currencies. There is a need to use the same base currency for fair comparison → typically use market exchange rate to convert into the same currency, usually USD.

Due to various reasons like differences in stage of economic development and speculation in the exchange rate market, there are differences in the purchasing power of one dollar.

Despite using market exchange rates to convert real GNP into the same base currency, it is not sufficient to use it as a proxy comparison for differences in material SOL due to differences in purchasing power. E.g., US\$100 can buy a different amount of a basket of goods and services in the US vs. in Mexico.

For over space comparisons, PPP is a better indicator as it also adjusts for differences in costs of living between the countries which will be especially stark and important when comparing Singapore with other countries (developed or developing)

Thus, PPP adjusted GNP should be used.

However, similar to comparing national income over time, it is crucial to look at the per capita figures to ascertain the difference in material standard of living, since population size will be different for different economies

Hence, PPP adjusted GNP per capita should be used to compare material SOL across countries to determine whether an average citizen in a country is able to consume more or less goods and services than another country.

The level of unemployment can be used as an approximation for SOL comparison over space.

Higher unemployment rate → smaller proportion of population working → lower income levels → lower material SOL

Higher unemployment rate → higher amount of social unrest, inequality, instability, etc → lower non-material SOL

Similar to comparing SOL over time, it is important to look at the extent of income disparity and the differences in the composition of national income to better compare the material SOL and to look at the level of externalities and disamenities.

### **CONCLUSION**

The economic indicators stated in question is useful but insufficient to compare SOL changes within Singapore. At most, they could give a hint of changes in material SOL but not the complete picture as other indicators like the gini coefficient are still required. The indicators are also limited in assessing the changes in non-material SOL.

For comparison with other economies, the economic indicators are of limited use in assessing both material and non-material SOL.

More holistic indicators like the Human Development Index could be used in assessing the change in the standard of living in the Singapore economy in 2011 and comparing it with that of other economies.



### Question 6

Since the economic crisis of 2008, rates of economic growth across the world have differed considerably.

- (a) Explain the key determinants of actual and potential economic growth. [10]
- (b) Assess the alternative economic policies that the Singapore government could adopt to maintain a sustained rate of economic growth into the future. [15]

### Suggested Answers Part (a)

#### Introduction- Explain Actual and Potential Economic Growth

Actual growth refers to the percentage increase in a country's real gross domestic product (GDP) over a period of time, usually a year. Potential economic growth refers to an increase in the country's productive capacity. Actual growth occurs when there is an increase in the country's Aggregate Demand (AD) while potential growth occurs when there is an increase in the country's Long Run Aggregate Supply (LRAS).

#### Determinants of Actual Growth

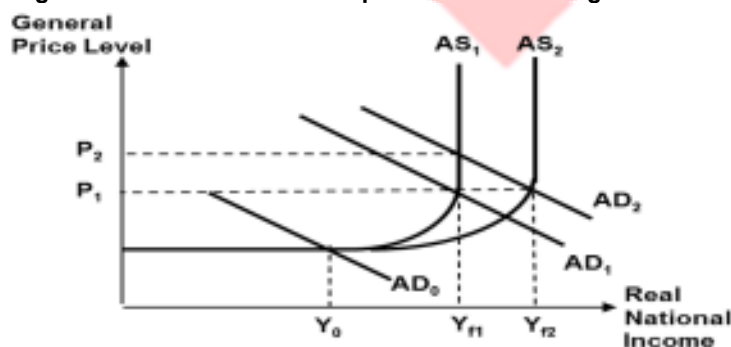
1. One of the key determinants of actual economic growth would be the **level of confidence** in the economy. When there is optimism in the economy such that consumers and firms expect future incomes and profits to increase, it would encourage them to increase consumption and investment. Since consumption and investment are components of aggregate demand, this would lead to an increase in aggregate demand, which in turn leads to a multiple increase in national income through the multiplier process. Hence increased optimism in the economy leads to actual economic growth.
2. Another determinant of actual economic growth would be the **economic growth of the country's major trading partners**. This would affect the external demand for the country's goods and services. When its trading partners experience a recession, their incomes and purchasing power falls, which forces them to reduce consumption, especially of imported goods. Therefore, the country would experience a fall in export revenue and its aggregate demand falls, leading to a fall in actual economic growth.

Therefore, the more dependent a country is on trade to drive its economic growth for example Singapore, the more the economic growth of its major trading partners is a key determinant of its actual economic growth. In comparison, countries like China who can depend on their domestic market for a significantly larger proportion of the demand for their output, would not be as greatly affected by the economic growth of their trading partners.

#### Determinants of Potential Economic Growth

1. Potential growth is affected by changes in the **quantity of resources** in the economy. One of its key determinants would hence be changes in the size of the country's labour force or its level of capital accumulation. For example, Singapore is concerned about its slow population growth, which may hinder the economy's potential growth in the future. More investment and capital accumulation in the economy also allows for potential growth as the capacity to produce more goods and services in the future will increase.
2. The second determinant of potential economic growth would be the **quality of its resources and the level of technology** in the economy. For example, with a higher level of education/ skills or technology in the labour force, there would be an improvement in the quality of labour, leading to an increase in labour productivity and an increase in the potential output of the economy. These would mean a higher Long Run Aggregate Supply curve than a country with a lower skilled/educated labour force or a lower level of technology. This explains Singapore's emphasis on education, skills training and investment in technology that has allowed her to enjoy relatively high rates of potential growth despite our limited resources.

Figure 1: AD/AS Diagram to illustrate actual and potential economic growth



- Initially, real output is at  $Y_0$  and the economy is not operating at full employment.
- An increase in AD from  $AD_0$  to  $AD_1$  will raise the real output from  $Y_0$  to  $Y_{f1}$ . This increase represents an increase in **actual output or actual growth**.
- For economic growth to be sustained in the long run, there would also have to be an increase in potential output,  $AS_1$  shifts right to  $AS_2$ , which represents potential growth.
- When AS shift rightwards together with the increase in AD, output is able to increase beyond  $Y_{f1}$  allowing for further actual growth as production capacity increases.

### Conclusion



In conclusion, the level of confidence and economic growth of a country's major trading partners are the key determinants of actual economic growth, while the size of labour force and level of education/ skills and technology are the key determinants of potential economic growth. In part (b), we will discuss government policies to increase both actual and potential growth and hence achieve a sustained rate of economic growth in Singapore.

### **Suggested answers for part (b)**

#### **Introduction**

- As we have seen in part (a), for Singapore to maintain a sustained rate of economic growth into the future, it would need to increase both the actual and potential economic growth of its economy.
- Since the economic crisis in 2008, Singapore has experienced negative growth in 2009 and slow growth thereafter.
- Besides using expansionary fiscal policy to pump-prime the economy, it also has allowed SGD to depreciate against USD to boost exports.
- But for sustained growth to be maintained into the future, supply-side policies are needed and to prevent import-price push inflation, gradual and modest appreciation against a basket of currencies of Singapore's major trading partners is still used.

#### **Policies to Increase Actual Economic Growth- Demand Management policies**

##### **1. Expansionary Fiscal Policy**

To encourage actual economic growth, the Singapore government could use expansionary fiscal policy. This entails cutting direct taxes and/ or increasing government spending. A fall in income tax for example raises disposable income of consumers and a fall in corporate taxes results in a rise in after-tax profits and this would encourage higher levels of consumption and investments, leading to an increase in aggregate demand.

This would induce consumption by recipients of the income. As one person's spending generates income for the next person, national income will eventually rise by a multiple of the initial increase in aggregate demand, leading to actual economic growth as long as there is spare capacity in the economy.

#### **Evaluation**

However, the effectiveness and appropriateness of expansionary fiscal policy depends on the size of a country's multiplier. The size of Singapore's multiplier is small due to her large withdrawals in the form of savings and imports. She has a high level of savings due to compulsory savings in terms of the Central Provident Fund and cultural factor where Asians are generally thrifter. In addition, she has a high level of imports as a result of her lack of natural resources. Hence a smaller multiplier would result in a relatively smaller multiple increase in national income relative to countries with a bigger multiplier.

However, Singapore's fiscal policy has been effective, as government has often chosen to spend on sectors that have a long term impact on our long run aggregate supply as well. This is often termed as fiscal policy with a supply side slant. For example, expenditure on skills training and infrastructure that will increase our potential growth and help Singapore achieve sustained economic growth in the future.

##### **2. Exchange Rate-centered Monetary policy**

One of Singapore's key macroeconomic policies to achieve sustained economic growth which includes price stability, is through our exchange rate centered monetary policy. The Monetary Authority of Singapore helps to manage our exchange rate and generally practices a policy of the gradual and moderate appreciation of the Singapore dollar to combat import-price push inflation.

However, during times of recession, in order to boost the economy and achieve actual growth, the government has allowed a slight depreciation of the Singapore dollar against the USD. This would result in our exports becoming relatively cheaper in terms of foreign currency and would hence cause the quantity demanded of our exports to increase, and imports to be more expensive in SGD causing quantity demanded of imports to decrease. As long as Marshall Lerner condition holds, where the sum of the Price elasticity of demand for our exports and imports is greater than 1, the value of our net exports will increase, leading to an increase in aggregate demand and actual growth.

#### **Evaluation**

However, the Singapore economy is very reliant on imports and a depreciation of the Singapore dollar will lead to our imports becoming relatively more expensive, potentially leading to import price push inflation in the economy. Hence, a depreciation of the Singapore dollar needs to be carefully considered and only used during recessions where import price inflation is usually not that significant an issue either.

#### **Policies to Increase Potential Economic Growth**

##### **Supply Side policies**

##### **Policies to increase quantity of resources:**

##### **1. Reduction in Corporate Tax to encourage capital accumulation**

There is no doubt that productive capacity of an economy can be increased chiefly by increasing the quantity and improving the quality of its capital equipment. Investment in new capital increases the amount of capital each worker can work with, hence contributing to increases in productivity. This implies that the level of output would have the potential to increase, leading to potential economic growth and an increase in long run aggregate supply. In Singapore, FDI was encouraged by granting foreign firms tax

holidays for the initial period of about 10 to 15 years after they set up operations. Corporate tax has also been reduced to encourage investment and work efforts enabling potential growth in the economy.

#### **Evaluation**

However, Corporate tax is only one factor which affects investment decisions. Ultimately for firms to invest in a country there are many other contributing factors such as the business climate or ease of conducting business in the country.

## **2. Immigration/ Retirement policies to Increase quantity of labour**

With a larger potential workforce it increases the productive capacity of the nation. Policies which target the increase in workforce include relaxing immigration law to increase the population size, relaxing foreign worker policy to increase the size of the workforce which increases the pool of workers immediately, increasing the retirement age and encouraging greater female participation in workforce by giving tax rebates for working mothers, ensuring quality childcare facilities are accessible and affordable, and allowing more flexible working arrangements.

#### **Evaluation**

However, relaxing immigration laws and foreign workers policy often creates social tension as they are seen to be a threat to local citizens. In addition, too fast an increase in population size may also lead to problems such as congestion or rising property prices. Like the case of Singapore where the population ballooned to more than 5 million, the public transport system was not able to cope quickly and property prices sky rocketed.

#### **Policies to Improve quality of resources:**

### **1. Investment in Human Capital**

Human capital refers to the accumulated skill and knowledge of workers. It is regarded as the most fundamental source of economic growth. It can be acquired through education, training and work experiences. Through investment in human capital, we will be able to raise the level of knowledge and skills present in the workforce. Hence, productivity will be increased, which will boost the economy's ability to produce.

In Singapore, the Continuing education and Training (CET) aims to scale up training efforts in order to build up stronger capabilities. The government also spends on improving the quality education in Singapore in order to ensure a workforce that is equipped with knowledge and skills and is constantly able to upgrade and re-skill to raise productivity and hence shift PPC outwards.

#### **Evaluation**

However, training/upgrading of skill efforts will be limited by the mindset of workers. They must be willing learners. In addition, not having the ability to learn new skills is also a contributing limitation. As there are many workers, especially low-skilled workers, who have received no/little education will not be able to pick up new skills easily and hence might be even more resistant to upgrading. In less developed countries, a more pressing issue will be to raise the quality of education to ensure basic literacy for the population.

#### **Policies to encourage Technological Advancements such as Productivity and Innovation Credit**

Over the years, technology has been playing an increasingly crucial role in bringing about potential growth in an economy. The Singapore government aims to encourage R&D efforts domestically through increasing its R&D spending to 3.5% of its GDP by 2015. To achieve this, a Productivity and Innovation Credit scheme has been introduced to encourage R&D efforts of the private sector by giving generous tax deductions on R&D expenditures.

#### **Evaluation**

However, R&D efforts have a long gestation period and one can never be guaranteed results.

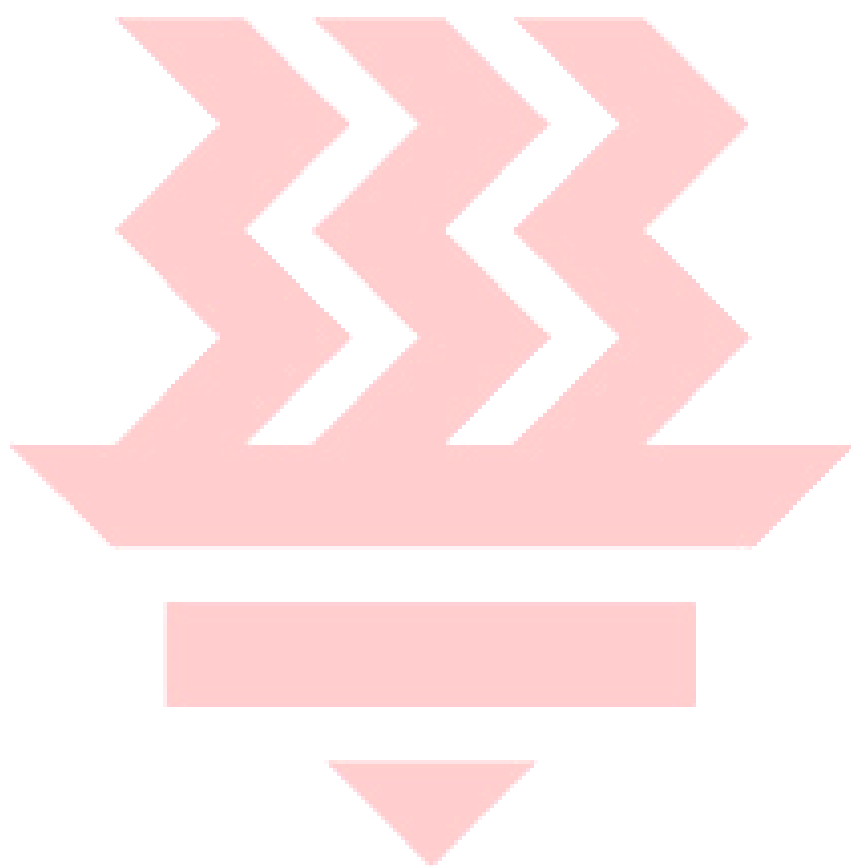
#### **Graphical Reference to Figure 1**

Therefore, the Singapore government has adopted both Demand management policies such as our exchange rate centred monetary policy and fiscal policy with a supply side slant, as well as strong supply side policies, to ensure that both AD and LRAS continue to increase in tandem in the economy to achieve sustained long term economic growth into the future with low and controlled inflation.

#### **Conclusion**

In conclusion, a multi-pronged approach needs to be used to maintain a sustained rate of both actual and potential economic growth into the future as no one policy can best achieve both. Given the nature of our economy and our heavy dependence on trade, Singapore has generally used an exchange rate centred monetary policy together with strong supply side policies to effectively sustain economic growth in the country.

Overall, in deciding which policies to use, the Singapore government would need to assess the appropriateness of the policies based on the current state of the economy as well as its most immediate needs and goals.



## 2015 A Level Paper 1 Suggested Answers

### Question 1 Collapse of Potash Cartel

(a)	<b>From Extract 3, identify and explain a factor that could be responsible for the <u>upward trend</u> in the price of potash shown in Figure 1.</b>	<b>[2]</b>
	According to Extract 3, one of the factors responsible for the rising potash prices is <b>"increasing demand for better food in highly-populated emerging markets like China, India and Brazil"</b> . As these emerging economies experience economic growth, rising income leads to rising purchasing power and rising demand for better food (normal good), hence the <b>derived demand for potash, which is used to fertilise crops, increases, putting an upward pressure upon its price.</b>	
(b)	<b>Explain how the <u>opening of the new potash mine in North Yorkshire</u> would create 'indirect jobs'.</b>	<b>[2]</b>
	With the opening of the new potash mine, there would be a <b>rise in incomes enjoyed by those employed in the new mine</b> . This rise in income would <b>cause a rise in induced consumption in consumer goods</b> such as food, clothes, entertainment and medical services. Hence, <b>via the multiplier effect, indirect jobs are created in these sectors.</b>	
(c)	<b>Explain Uralkali's decision to leave the potash cartel in July 2013.</b>	<b>[4]</b>
	<p>Firstly, Uralkali decided to leave the potash cartel because it accused "Belaruskali of operating outside of their deal" (Extract 2) and "selling potash independently of the cartel" (Extract 3). The increased output from Belaruskali caused the price of potash to fall and affected Uralkali's expected profit as less revenue was gained when prices fell but output was fixed according to the cartel deal.</p> <p>Secondly, Uralkali "wants to extend demand for its product" (Extract 2). Given the threat of a contestable market where there are plans for "several large potash projects around the world" (Extract 3), as the "world's biggest potash producer" (Extract 1), by increasing output, Uralkali will be able to "capture market share as a low-cost producer that will sell potash at lower prices than its rivals". Hence, it might no longer be "economically viable" for new projects (Extract 4) and Uralkali might be able to prevent the entry of new firms and maintain its profits.</p>	
(d)	<b>With the help of a diagram, explain why the collapse of the potash cartel could erode the value of the Canadian dollar.</b>	<b>[4]</b>
	<p><u>Explain fall in potash export earnings:</u> Extract 2 mentioned that "the collapse of the cartel could cut potash production by up to 40%... as potential customers delay buying in anticipation of plunging prices". Due to consumers' expectation that prices of potash will fall further, consumers will decrease their demand for Canada's potash exports now and postpone it till the future. Hence, exports revenue fall.</p> <p><u>Explain fall in demand for Canadian currency:</u> Since potash exports "represented 1.3% of Canada's total exports" (Extract 2), the fall in potash exports revenue will cause a fall in demand for Canadian dollars in the foreign exchange market as foreign importers demand for less of Canadian dollars to make payments.</p> <p>This is illustrated by a leftward shift of the demand curve from <math>D_0</math> to <math>D_1</math> as shown in Figure 1, leading to a fall in the price of the Canadian dollar and the erosion of the dollar against USD.</p>	

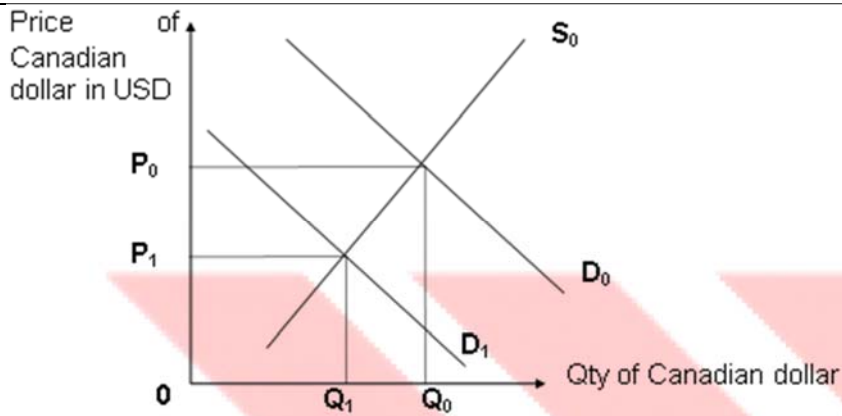


Figure 1: Market for Canadian Dollars

(e) **Assess the options open to the government for dealing with the expected unemployment that will result from the decline in potash exports from Saskatchewan.**

[8]

With the decline in potash exports, there is a fall in export revenue, leading to a fall in aggregate demand (AD) and a multiple fall in national income via the multiplier effect. As AD falls, firms experience an unplanned increase in stocks and cut back on production in the next period. Hence, they hire fewer workers and this leads to higher cyclical unemployment.

The government could employ **expansionary demand-management policies** such as monetary policy. By cutting interest rates, consumption and investment could be stimulated as cost of borrowing reduced and investments are more profitable ( $MEI > r$ ), hence aggregate demand will rise and firms will hire more workers as they step up production. However, the root cause of the fall in AD is due to the decline of the potash industry. Hence monetary policy is not appropriate as it does not deal with the root cause of the problem.

The government can consider instead to invest in the potash industry either **via government spending and/or tax grants to BHP** who will be building a new mine in Canada (Extract 4). This will help boost AD via increase in G spending and/or I, hence demand for labour increases. This is a more targeted solution to the issue at hand since jobs will be directly created to replace those lost jobs.

The government can also consider investing in **research and development** in the potash industry to increase the competitiveness of the industry in terms of price and quality. However, the success of R&D is not guaranteed and will not materialize in the short run.

However, BHP "still needs high potash prices to make the new project economically viable" (Extract 4). If potash prices continue to fall resulting in BHP not proceeding with the building of a new mine and/or PotashCorp not being able to meet the low price offered by Uralkali, the unemployed workers in the mining industry will not be able to get their jobs back and those who do not have the skills to work in other industries will become structurally unemployed.

Hence, the government may need to provide **training and re-skilling opportunities** for those who are unemployed to enable them to take up other jobs available in the economy. This will improve the supply-side conditions of the economy as the unemployment situation would be essentially structural in nature so the most appropriate policy should be directed at improving the occupational and geographical immobility of labour.



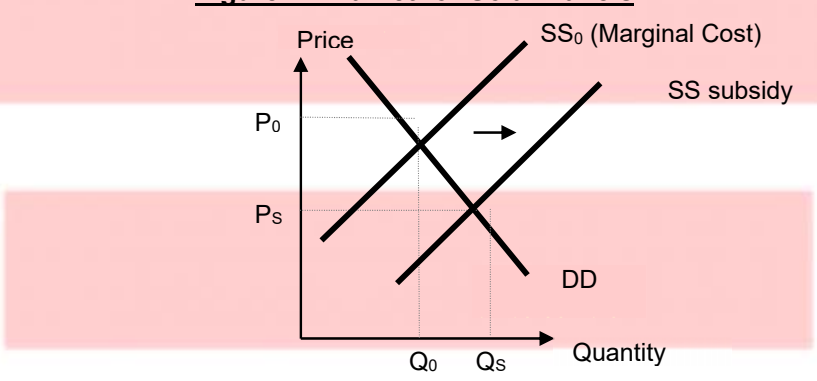
(f)	<p><b>Discuss the factors that are likely to influence whether the proposed new potash mining project in North Yorkshire should go ahead.</b></p>	<b>[10]</b>
	<p>The factors that are likely to influence whether the proposed new potash mining project in North Yorkshire should go ahead include environmental costs, possible macroeconomic benefits, and the likelihood of profits being enjoyed in the future as potash prices started to fall.</p> <p>From society's perspective, environmental costs from constructing and operating the new potash mine matter. Extract 1 mentions that opponents of the project claimed that "the environmental costs in such a beautiful area will be very high". This suggests that the potash mining project generates negative production externalities (external costs to third parties who are not part of the production or consumption process). This results in market failure where the free markets fail to allocate scarce resources efficiently and hence social welfare is not maximized.</p> <p><b>Figure 2: External cost from over-production of potash</b></p> <p>As seen in Figure 2, the presence of external costs (such as the noise and air pollution causing disturbances and disruption of the scenery to be enjoyed by visitors and residents and the possibility of health problems) cause a <b>divergence</b> between private and social costs, with <b>SMC above PMC</b> as <math>SMC = PMC + EMC</math>. Assume that potash mining yields no positive externality, <math>EMB=0</math>. Thus, <math>PMB=SMB</math>. Assuming perfect competition, <b>market equilibrium</b> quantity of potash is <math>Q_m</math>, where <math>PMB = PMC</math>, as consumers and producers only consider their own benefits and costs. However the <b>socially efficient</b> quantity of potash should be at <math>Q_s</math> where <math>SMB=SMC</math>, where the full costs and benefits to society are considered. <math>Q_s</math> is less than the market equilibrium quantity, <math>Q_m</math>, where <math>PMB = PMC</math>. Thus there is <b>overproduction</b> of potash by the quantity <math>Q_m - Q_s</math> and area ABC represents the resultant <b>deadweight welfare loss</b>. Hence, considering the welfare loss that results from the project, it <b>should not go ahead</b>.</p> <p>However, from the government's perspective, the "potential economic benefits are huge" as mentioned in Extract 1. Conditional agreements have been put together to sell a million tonnes a year to China for 10 years and together with the rising prices, export revenue will rise, balance of trade will improve, assuming ceteris paribus, which will "reduce the UK's balance of payments deficit by 10% by 2022". The rise in export revenue, calculated to be "an annual sum of £1.2 billion" and the initial investment spending of £1.13-1.25 billion will also raise aggregate demand and increase national income via the multiplier. Firms will hire more workers as they step up on production to meet the rising aggregate demand, reducing unemployment in UK. The development promises to "create about 3000 permanent direct and indirect jobs, with a similar number of jobs expected during construction" according to Extract 1.</p>	

At the same time, the potential economic benefits analysed above are subjected to the trend of the price of potash. While potash firm Sirius Minerals is optimistic about the prices of potash going "higher and higher" (Extract 1) projecting a high annual sum of £1.2 billion made, Extract 3 and 4 suggest that prices may continue to fall after the cartel break-up and the possible entrance of new producers such as BHP in Canada and another in Argentina. BHP needs "high potash prices to make the new project economically viable". Similarly, Sirius Minerals will likely require high potash prices in order to earn a profit. Therefore, the expected benefits may not materialise in view of falling prices.

In conclusion, the environmental costs may be too high for a rich advanced developed country like the UK to engage in mining. Unlike Russia where the mining takes place in remote places like the Ural mountains, Yorkshire is a relatively well populated beautiful country-side, perhaps more suited to eco-tourism. Hence, the social costs may outweigh the benefits (especially when the benefit may not materialise in view of falling potash prices). Moreover, prices and demand for primary commodities are notoriously volatile. Hence, it may not be in the UK's interest to focus on primary exports as it would subject the economy to too much volatility (like the case of Saskatchewan in Canada). It might be better for the UK to invest in some high tech, green industries for long term benefits to the economy.

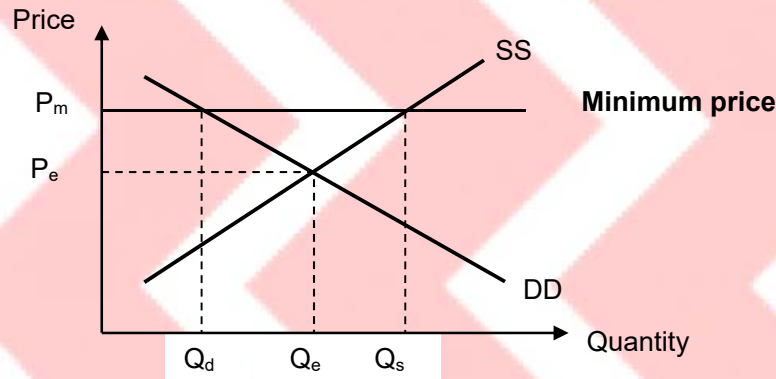


## Question 2: The Growing Threat of Protectionism

(a)	<b>With reference to Table 1, compare the EU's trade balance with China in 2008 and 2012.</b>	<b>[2]</b>
	<p><b>Similarity:</b> EU's trade balance with China was in <b>deficit</b> in both 2008 and 2012.</p> <p><b>Difference:</b> However, EU's trade deficit with China was <b>smaller</b> in 2012 than in 2008.</p>	
(b)	<b>Explain what is meant by the term 'protectionism'.</b>	<b>[2]</b>
	<p><b>Define:</b> 'Protectionism' refers to policies adopted by countries to shelter domestic industries from foreign competition through the imposition of tariff and non-tariff barriers (like quotas, export subsidies and import restrictions).</p> <p><b>Explain:</b> For example, "Brazil raised tariffs... to defend its declining local industries" (Extract 7). Tariffs increase the prices of imports and cause a fall in the amount of imports, which in turn result in higher domestic production when consumers switch away from imported goods.</p>	
(c)	<b>With the help of a diagram, explain how it could be claimed that <u>subsidies allow the Chinese to dump solar panels in the EU</u>.</b>	<b>[4]</b>
	<p>Dumping refers to the selling of the Chinese solar panels to EU at a lower price than that charged to the domestic buyers in China and <b>below the marginal cost of production</b>. It is considered as predatory pricing aimed at dominating a market by destroying existing rivals in the EU.</p> <p>As Figure 1 below shows, subsidies will cause supply to increase from <math>SS_0</math> to <math>SS_{\text{subsidy}}</math> and price of solar panels will fall from <math>P_0</math> to <math>P_s</math> and quantity will increase from <math>Q_0</math> to <math>Q_s</math>. Subsidies allows the Chinese producers to export their solar panels at prices lower than the marginal cost of production hence they are able to "dump solar panels in the EU".</p> <p style="text-align: center;"><b>Figure 1: Market for Solar Panels</b></p> 	
(d)	<b>With the help of a diagram, explain whether an agreed <u>minimum price for solar panels</u> will always result in 'a <u>new market equilibrium at a sustainable price</u>'.</b>	<b>[4]</b>
	<p>A minimum price is a legally established price <b>above</b> the market equilibrium price and producers are prohibited from selling below this stipulated price. With reference to Figure 2 below, assume a minimum price is imposed at <math>P_m</math> above the market equilibrium price, <math>P_e</math>, in EU.</p> <p>Setting a minimum price of <math>P_m</math> distorts the working of the price mechanism and leads to a <b>surplus</b> of <math>Q_s - Q_d</math> of solar panels, hence the market is in <b>disequilibrium</b>. Unlike for agricultural products where the government will usually buy up the surplus to protect the income of the farmers, it is unlikely that the EU government will buy up the surplus of solar panels. Hence, the surplus will create a downward pressure on price and possibly create a black market. Thus, the minimum price is unlikely to be sustainable.</p>	

However, the minimum price could be **sustainable** if demand or supply condition changes over time. For instance, due to expectation that the EU government will not remove the minimum price and should the producers continue with the current supply, there will always be a surplus, the producers might reduce the supply of solar panels to EU in future, causing a fall in supply. If the new supply meets original demand at the minimum price, the new market equilibrium will be sustainable. Alternatively, should demand increase due to rapid adoption of solar technology, and the new demand meets original supply at the minimum price, the new market equilibrium will be sustainable too.

**Figure 2 - Market for solar panels in EU**



(e) **Assess whether a tariff or a weaker exchange rate is the better method for a country to deal with a loss in competitiveness.**

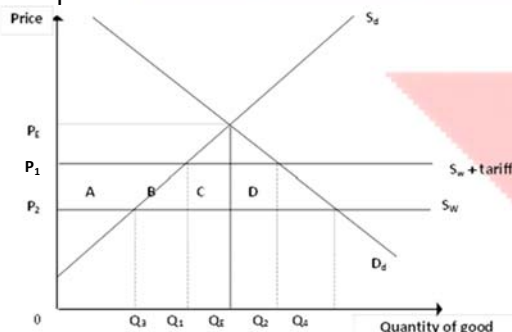
[8]

Define "loss in competitiveness" – refers to a loss in X competitiveness in terms of price and/or quality, resulting in trade deficit. Evidence: Extract 7 mentions that emerging countries that have lost competitiveness have big current account deficits.

**Thesis - A country can use "tariff" to deal with a loss in competitiveness.**

Explain **HOW** tariff can help a country deal with loss in competitiveness.

The imposition of specific tariffs will cause price to increase from  $P_2$  to  $P_1$ . At  $P_1$ , amount of imports has fallen from  $Q_3Q_4$  to  $Q_1Q_2$ , hence reducing import expenditure. Assuming ceteris paribus, balance of trade will improve as trade deficit decreases.



Evidence: Brazil raised tariffs on 100 sectors to defend its declining industrial base (Extract 7). EU levied heavy tariffs of 48% on subsidised Chinese made solar panels (Extract 5).

**Anti-thesis - A "weaker exchange rate" is a better method to deal with a loss in competitiveness**

Explain **HOW** weaker exchange rate can help a country when BOT is deteriorating.

A fall in exchange rate will cause  $P_x$  (in foreign currency) to fall and  $P_m$  (in local currency) to rise. Assuming  $PED_x > 1$ , quantity demanded will increase more than proportionately, resulting in an increase in export revenue measured in foreign currencies. Given that prices of the country's exports remain unchanged in domestic currency, there will be an increase in demand for exports in local currencies and export revenue will rise. At the same time, assuming  $PED_m > 1$ , the rise in import price will cause quantity demanded to fall more than proportionate causing import expenditure to fall. As a result balance of trade will improve

Evidence: "Exchange rate depreciations in emerging markets might help restore lost competitiveness for those with big current account deficits" (Extract 7)

	<p><b><u>Limitations</u></b></p> <p>Tariff does not help to deal with a loss in export competitiveness in terms of price and quality. It only makes imports more expensive to improve BOT.</p> <p>Such protectionist measures will undoubtedly harm the trade position of her major trading partners as their exports will fall. It is deemed to be a 'beggars-thy-neighbour' measure. Hence, if these trading partners <b>retaliate</b> with their own set of protectionist measures, the country that initiated the tariff, will also experience a fall in exports and this might offset any prior improvement in her trade deficit.</p> <p>Evidence: As a response to EU's levy of heavy tariffs on Chinese-made solar panels, China in turn announced it was considering retaliation by levying a similar "anti-dumping" duty on wines made in EU.</p>	<p><b><u>Limitations</u></b></p> <p>Trading partners may retaliate by weakening their currencies and there may be a currency war, which would cancel out all the advantages enjoyed initially by the country which devalues her currency.</p>	
	<p><b><u>Conclusion ( evaluative judgement)</u></b></p> <p>Any persistent negative trade imbalance or deficit points to fundamental weakness in a country's ability to export. Resorting to tariff or even weakening exchange rate are at best short-term measures, which does not address the root problem.</p> <p>Nonetheless, which is "better" largely depends on the situation or context. For instance, in the event when there is proven case of dumping like for EU's case, tariff may be better than a currency depreciation. It is a more targeted approach, whereas a currency depreciation is more blunt and may lead to unintended consequences such as falling interest rates due to capital outflow.</p> <p>In the long run, however, the country should look at the root causes such as the loss of comparative advantage and rectify them. To regain competitiveness the country may need to restructure its export industry, re-train its workforce and move on to produce higher value-added products for exports.</p>		
(f)	<p><b>In view of the possible impact of escalating trade wars upon consumers, employees and producers, assess whether, on balance, protectionism can ever be justified.</b></p>		<b>[10]</b>
	<p><b>Trade wars</b> refer to two or more countries imposing tariff or non-tariff barriers on each other in retaliation for other trade barriers.</p> <p><b>A. Negative impact of escalating trade wars upon consumers, employees and producers</b></p> <p>An escalating trade war represents a reversion back to self-sufficiency (autarchy) &amp; hence impoverishes a country. For instance, without trade a country's consumption possibility is bounded by its PPC and its economic growth is limited by domestic resources.</p> <p>(1) <b>Welfare effect for Consumers</b> – Escalating trade wars are harmful to consumer welfare because tariffs increase the price of imports leading to DWL while quotas and anti-trade regulations deny consumers access to better and wider variety of goods via imports.</p>		

- (2) **Unemployment** – Escalating trade wars hit a country's exports and therefore jeopardises the jobs of workers employed in the export sector directly and others indirectly. For instance, workers in the export sector might lose their jobs because of trade war. The impact is not limited to export. It could spread to other sectors via the multiplier effect as affected workers scale down their consumption on food, clothing, entertainment etc. Thus employees are potential victims of protectionism. If a trade war breaks up between China and EU, workers employed in the solar panels industry and wine industry in both countries respectively faced the prospect of retrenchment.
- (3) **Losses for Producers** – Escalating trade wars also hits producers of exports. Exporters might experience unforeseen losses because of tariff or non-tariff barriers slapped on their exports due to trade wars. E.g. If China were to slap a punitive tariff on EU wines, it could lead to collapse of wine producers.

#### **B. Justification for protectionism:**

- (1) **Infant industry** – An infant industry is one that has potential comparative advantage but is too young or undeveloped to realise this potential, especially in the face of more established foreign competitors with the trend towards globalization. Infant industries face high start-up cost at their initial stage of production. Subsidies given to these producers, help to lower cost of production and hence price. This will make them more competitive against the more efficient foreign producers. With reference to the data, it could be argued that manufacturing of solar panel is an infant industry in which China may have a potential comparative advantage, and therefore subsidising its production is to protect this infant industry in the short term so that it is able to expand its output sufficiently to reap economies of scale and establish market share so that it is able to compete with the foreign firms. Hence, protectionism is necessary in the short-run to provide a level playing field.
- (2) **Anti-dumping** – Necessary if the loss in competitiveness is a result of unfair trade practices by trading partners. One example is the alleged dumping of Chinese-made solar panels in EU (Extract 5). In the short run, consumers gain from the lower prices. However, domestic producers lose out as consumers purchase less domestic goods. As less goods are being produced, less factors of production are required and hence employees may be laid off. In the long run, if the domestic producers are unable to match the lower price and survive the competition, they will leave the market, resulting in higher unemployment. Consumers will also lose out if the foreign (Chinese) monopolist now charges a higher price.
- (3) **Sunset Industry** – Countries may temporarily protect industries which are no longer competitive in order to prevent sudden massive structural unemployment in those industries which employ a substantial proportion of the workforce. After a country decides to specialise and trade, the workers previously employed in the contracting sunset industry (which has lost its comparative advantage), will be unemployed. The transitional period of readjustment and reallocation of resources within each country could be painful and costly. As evident in Extract 7, "Brazil raised tariffs on 100 sectors... to defend its declining industrial base".

#### **Conclusion:**

In the SR, protectionism may be justified on the grounds of protecting infant industry, prevention of dumping and protection of sunset industry to prevent unemployment and worsening trade balance. However, in the LR, it leads to a no win outcome for every country because protectionism breeds more protectionism (i.e. retaliation), as seen from the data where there are escalating trade wars, and this pose "a significant threat to global growth and prosperity" (Extract 7). Hence, in the LR, free and fair trade is best as according to the law of comparative advantage, a country gains from the ability to consume beyond its PPC and trade is an engine of growth that can generate income and employment for the economy via exports.

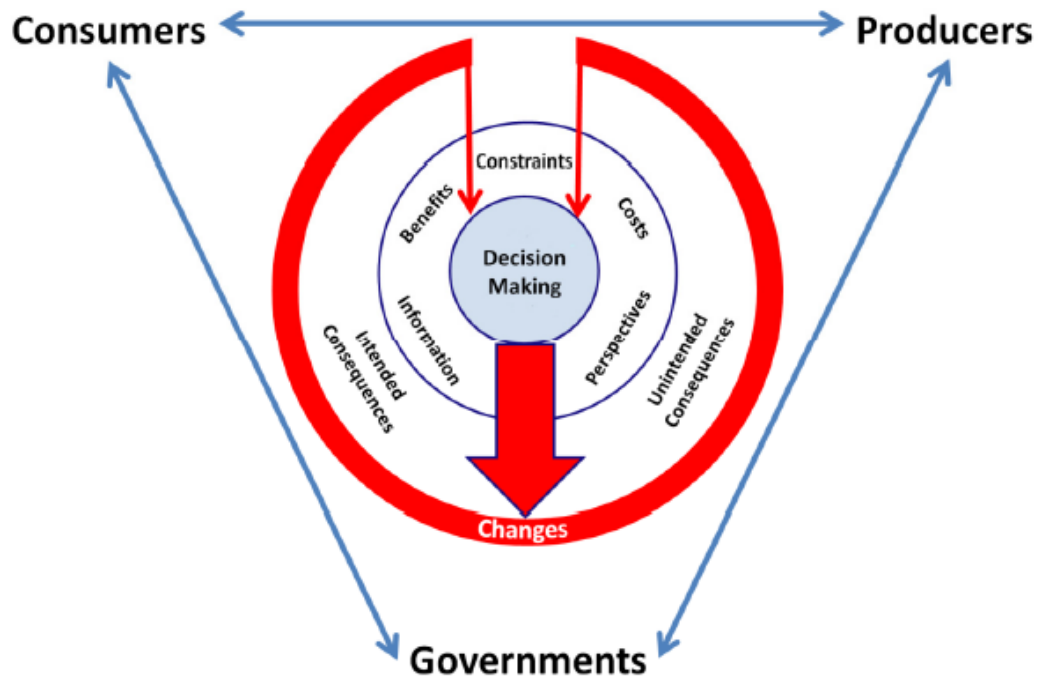
## TYS 2015 ESSAYS SUGGESTED ANSWERS

### TYS N2015 Q1

Prospective students and governments each make decisions that affect the scarce resources that are devoted to university education.

- (a) Explain the determinants of a rational prospective student's decision on whether to participate in university education. [10]
- (b) Discuss the factors that governments should consider in allocating resources to university education. [15]

### A Framework for Disciplinary Thinking in A Level Economics



In light of the central economic problem of scarcity, decision-making is fundamental. Scarcity leads to the inevitability of choices and trade-offs. In the context of the Economics syllabus, decision-making is framed as a process where candidates analyse how decisions are made from the perspectives of different economic agents (consumers, producers and governments), adjusting for dynamic changes where appropriate.

Candidates will have to take account of the benefits, constraints, costs, perspectives and other necessary information, while recognising the impact of the intended and unintended consequences arising from the decisions made and the corresponding trade-offs. Candidates will also recognise that decision-making by economic agents can have multifaceted implications, where decisions made by an economic agent can have an impact on other economic agents.



**(a) Explain the determinants of a rational prospective student's decision on whether to participate in university education. [10]**

**Introduction**

A rationale student seeks to maximise his utility given the limited resources he has such as finances and time. In deciding whether to participate in university education, a student would have to adopt a marginalist approach and weigh the expected marginal costs and benefits of university education.

**Body**

- The **expected private marginal costs (PMC)** of university education would include the undergraduate tuition (school) fees, transport costs, the potential costs of accommodation especially for university education overseas, the costs of materials and equipment such as textbooks and laptop.
- The full economic costs would also include the **opportunity costs** of the time spent in university education such as the earnings one could have earning from holding a job instead of spending the time on university education. It could also include the additional mental stresses from such further studies or the pain of leaving existing social networks and support for those pursuing university education overseas.
- The **expected private marginal benefits (PMB)** of university education are the higher salary and better job prospects a graduate would command compared to non-graduates, the social recognition from such higher achievements, the valuable social network gained throughout the course of the studies.
- It could also include the utility gained from acquiring knowledge as well as the joy from immersing one in another culture and landscape for those pursuing university education overseas.

Figure 1a

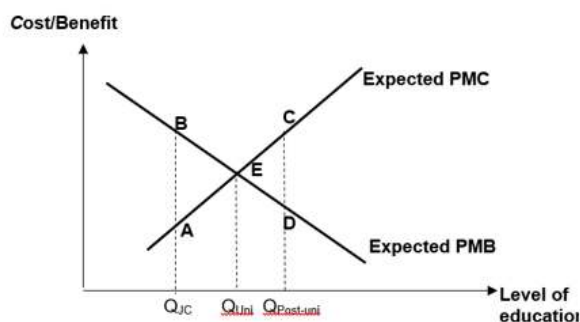
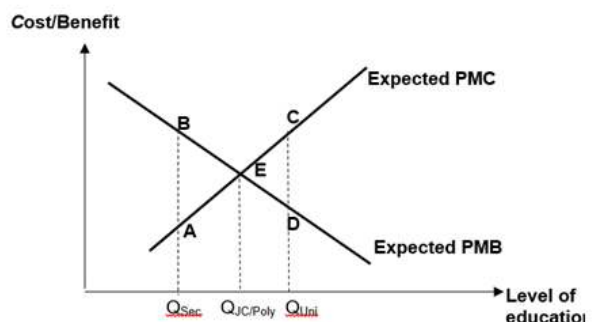


Figure 1b



Referring to Figure 1a, when expected  $PMC = PMB$ , this student will decide to participate in university education. This student will not stop his education at JC as  $PMB > PMC$  and there will be welfare loss of EAB. So it is optimal to opt for university education. However, it is not optimal to go for post graduate as expected  $PMC > PMB$  and there will be a net welfare loss of area ECD. On the other hand, referring to Figure 1b, such a student will not opt for university education as it will mean  $PMC > PMB$  and it is better to stop at JC or polytechnic where expected  $PMC = PMB$ .

*Note: Under exams condition and time constraint, there is no need to draw Figure 1b. It is drawn here to help you to understanding decision-making by individuals can have different outcomes.*

**Conclusion**

In conclusion, it is only rationale to participate in university education only if one's PMB is equal to the PMC. The PMC and PMB discussed earlier would vary from student to student as they would in turn be affected by factors such as the jobs prospects associated with the degree each student is considering or the social economic background of each student. Hence while it might be rationale for some to pursue university education, it can also be rationale for some not to participate in it.

**(b) Discuss the factors that governments should consider in allocating resources to university education. [15]**

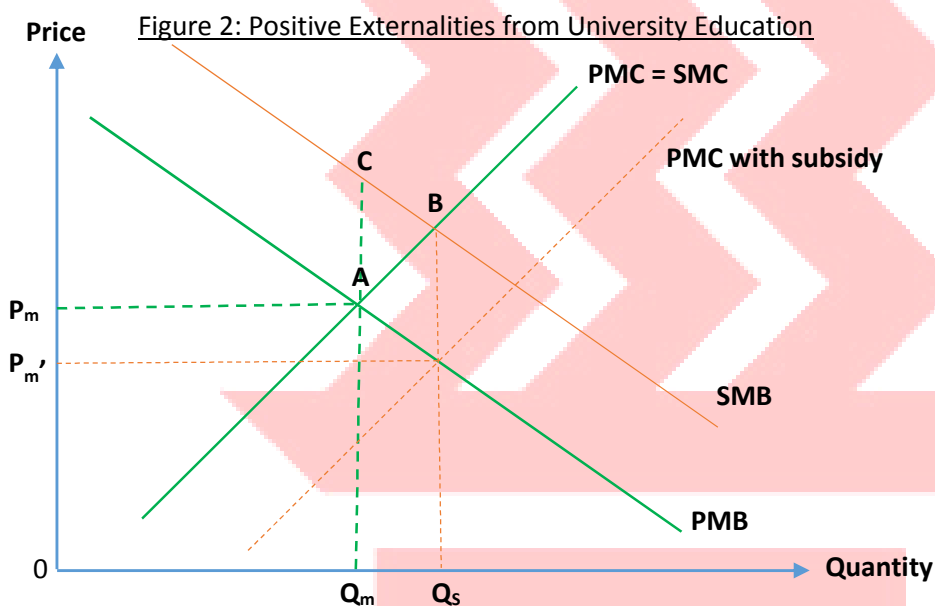
**Introduction**

When governments allocate resources to university education, they are essentially intervening in the market for university education. This points towards some degree of market failure and allocative inefficiency in university education that governments are trying to resolve, or their intervention might be based on the desire to provide more equitable access to university education. The governments are likely viewing university education as a merit good, which is a good deemed socially desirable by the government and is under-consumed and overpriced when left to the free market.

**Body**

**Positive Externalities**

One factor that might call for intervention by the government is the positive externalities generated from the consumption of university education. When one pursues university education, s/he only considers the PMC and PMB of doing so as examined in part (a) above, ignoring the external benefits to third parties who are neither the producers or consumers of university education. An example of such marginal external benefit (EMB) would be the spillover jobs created by graduates when a skilled labour force brings in Multinational companies that hire workers who are not graduate.



- As seen in Figure 2 above, the presence of external benefits causes a divergence between private and social benefits, with SMB above PMB as  $SMB = PMB + EMB$ .
- Assuming that undergoing university education yields no negative externality,  $EMC = 0$ . Thus,  $PMC = SMC$ . Assuming perfect competition, market equilibrium quantity of graduates is  $Q_m$ , where  $PMB = PMC$ , as prospective students only consider their own benefits and costs.
- However, the socially efficient quantity of graduates should be at  $Q_s$  where  $SMB = SMC$ , where the full costs and benefits and costs to society are considered.  $Q_s$  is more than the market equilibrium quantity,  $Q_m$ , where  $PMB = PMC$ . Thus there is underconsumption of university education by the quantity  $Q_s - Q_m$ .
- Area  $ABQ_sQ_m$  is the total social cost that will be incurred while Area  $CBQ_sQ_m$  is the total social benefit forgone for the underconsumption  $Q_s - Q_m$ . Since total social costs incurred exceed the total social benefits forgone, area ABC represents the deadweight welfare loss due to underconsumption.
- To address this issue, the government will need to subsidise university education with a per unit subsidy that corresponds to the size of the EMB to lower PMC to  $PMC - \text{subsidy}$  such that the new market outcome where  $PMC - \text{subsidy} = PMB$  would coincide with the socially efficient outcome quantity of  $Q_s$ .
- The total cost of the subsidy would be equal to  $EMB \times Q_s$ .
- **Hence governments would need to consider the size of EMB and  $Q_s$  in deciding how much resources to allocate. This can vary between countries, with countries pursuing economic growth through the creation of jobs that require highly skilled labour arguably enjoying more external benefits and having a higher  $Q_s$  than countries who focus on agricultural or low-end manufacturing enjoying less EMB and having a lower  $Q_s$ . Thus governments of the former would need to consider allocating more resources towards university education than the latter.**



### **Imperfect Information**

- Another factor for intervention by the government could be due to **imperfect information** by prospective students.
- Students might underestimate the benefits of university education and under-consume it. For example, they might only be aware of the higher starting salaries of graduates but underestimate the value of creating social networks with other future graduates and the job and business opportunities these networks could bring.
- However, such information failure problem is probably limited given today's global awareness of the benefits of university education, especially in nations such as Singapore where the literacy rate is high and information about the benefits of university education are widely available.

### **Equity reason**

- Governments might also consider allocating more resources to university education due to **income inequality** and the desire to provide a more equitable access to university education for all regardless of their purchasing power.
- Education is often a necessary step to break out of the poverty cycle and in countries where the income gap is large, it might be necessary for the government to provide more resources to support those who have the required aptitude for university education but are otherwise unable to afford it.

### **Opportunity costs**

- Allocating more resources to university education would inevitably entail opportunity costs for governments in the form of the next best alternatives forgone. For example, the resources allocated to university education could have been allocated to developing the infrastructure of the country or to provide better healthcare facilities for its citizens.
- Such opportunity costs might be particularly high for governments in countries with low tax revenues relative to their various pressing developmental and social needs. For example, Nigeria expects a \$11 billion budget deficit in 2016 but has pressing healthcare needs as seen from it being the country with the highest numbers of AIDS-related deaths in Sub-Saharan Africa.

### **Conclusion**

In conclusion, there are various factors that governments will have to consider in allocating resources to education. These factors would influence the amount of resources the government should or are able to allocate to improve efficiency and equity in the allocation and accessibility of university education resources to its citizens.

## **TYS N2015 Q2**

Recent years have seen a dramatic rise in the output of computer-based products such as smartphones, laptops and tablets.

Discuss the demand and supply factors that determine the output of computer-based products and evaluate which is the most important factor. [25]

### **Introduction**

**Clarify key issues:** The decisions of both buyers and sellers in the market for computer-based products affect both demand and supply thus impacting the output of computer-based products. Computer-based products are defined as electronic products with computer processing capabilities to satisfy consumers' need in internet browsing, phone calls, messaging, music, videos, games and work-based functions such as word documents.

**Relate to Context:** Recent years have seen a rise in the output of computer-based products. Some signs include the increase in the number of brands of computer-based products as well as firms' statistics of rising sales volume of their products over the years.

**Approach:** This essay seeks to explain, using the demand and supply framework, how different factors affect the output of computer-based products. Assuming that prices of computer-based products are set by the free market, the recent rising trend in output could be caused by either a rightward shift in the demand curve due to a rise in income, a fall in price of complement and a positive change in taste and preferences, and/or a rightward shift in supply curve due to technological advancement and increase in the number of producers.

### **Body**

First I shall focus my analysis on the demand side of the market for computer-based products. Demand for computer-based products refers to the different quantities of computer-based products that consumers are willing and able to buy at various prices over a given period of time, *ceteris paribus*.

### **Demand Factors**

#### **Taste and Preference**

<b>State</b>	A demand factor that affects the output of computer-based products is taste and preference.
<b>Elaborate And Exemplify</b>	The huge increase in their demand is attributed by a positive taste and preference towards the consumption of computer based products in recent years. The improved functionalities of computer-based products have led people to switch away from obsolete models towards these relatively high-technology computer-based products. For instance, smartphones nowadays have synchronization functions with computers or laptops, allowing users to easily transfer photos, music and videos to and fro computers. The convenience brought about by these synchronization functions with computers have caused consumers to switch away from obsolete models of non-computer-compatible mobile phones. At the same time, the Singapore government's "Future School" initiative has also increase the local schools' demand for computer-based products such as tablets to aid in teaching curriculum. Hence, the demand for computer-based products increases as consumers are willing and able to purchase more of these higher functionality computer-based products at all prices, <i>ceteris paribus</i> .
<b>Evaluate</b>	This positive taste and preference towards computer-based products is likely to be a very important factor contributing to the increase in demand and hence output of computer-based products. Due to successful advertisement by firms that try to picture these products as necessity and fashionable goods, consumers are always demanding for the latest computer-based products to keep up with trend and functionalities. It is not unusual for smartphones users for instance to upgrade their smartphones every few years although their gadget might still be in full working conditions, hence resulting in a dramatic rise in demand and equilibrium output of computer-based products.

#### **Rise in income**

<b>State</b>	Another demand factor that affects the output of computer-based products is the rise in world income.
<b>Elaborate And Exemplify</b>	In recent years, many economies have been gradually recovering from the global financial crisis in 2008. Countries such as the United States of America and Singapore have been experiencing annual GDP growth of 1% to 4%. In times of economic recovery, the income of consumers and hence their purchasing power increases. This leads to willingness and ability of consumers to buy more computer-based

	products at various prices, ceteris paribus. Given that computer-based product is likely to be normal good given their high degree of necessity in today's digitalised world, its income elasticity of demand is likely to be positive ( $YED > 0$ ), meaning that its demand will increase when income rises.
<b>Evaluate</b>	Although the rise in income plays a part in boosting demand and hence equilibrium quantity, its impact is limited if we consider the income elasticity of demand (YED). Demand for computer-based products is likely to be income inelastic as they are likely to be deemed as necessity goods rather than luxury goods in today's highly digitalised world and as societies become more affluent. In more developed countries like USA and Singapore, computer-based products such as smartphones and tablets have become indispensable tools for learning and work in schools and workplace due to the convenience they bring. Hence, YED of computer-based products is likely to be positive but of a small magnitude ( $0 < YED < 1$ ), which implies that the demand for computer based products only increase by less than proportionate when income rises. Therefore, the impact of rising income on demand for computer-based products is not likely to be big.

### Fall in price of related goods

<b>State</b>	The fall in price of complement such as Wifi and data plan is also a critical demand factor that affects the output of computer-based products.
<b>Elaborate And Exemplify</b>	In today's highly digitalised world, Wifi or data plan are indispensable complementary services that are used hand in hand with computer-based products such as smartphones and tablets. The use of Wifi or data plan is important and is tied to many features and application of these computer-based products. The price of Wifi and data plan has witnessed a drastic fall ever in recent years. In Singapore for instance, the entry of a forth telecommunication companies (Telco), MyRepublic has led to a price war among the other incumbent telcos to stay competitive. For example, the telcos have come up with more affordable data plans that offer higher data limits, lowering the price of data plans or wifi drastically. Since Wifi or data plan and computer-based products are complements, the cross elasticity of demand (CED) of computer-based products for data plan is negative ( $CED < 0$ ). This implies that the demand for computer based products will increase when the price of data plans falls, ceteris paribus.
<b>Evaluate</b>	The fall in price of data plan and wifi in recent years is likely to be an important factor that increase the equilibrium output of computer-based products. Since Wifi or data plan and computer-based products are close complements, the cross elasticity of demand (CED) of computer-based products for data plan is likely to have a high magnitude. Hence when the price of data plan falls ceteris paribus, the demand for computer based products will increase by more than proportionate and equilibrium output will increase dramatically.

Next, I shall focus my analysis on the supply side of the market for computer-based products. Supply of computer-based products refers to the different quantities of computer-based products that producers are willing and able to put up on sale at various prices over a given period of time, ceteris paribus.

### Supply Factors

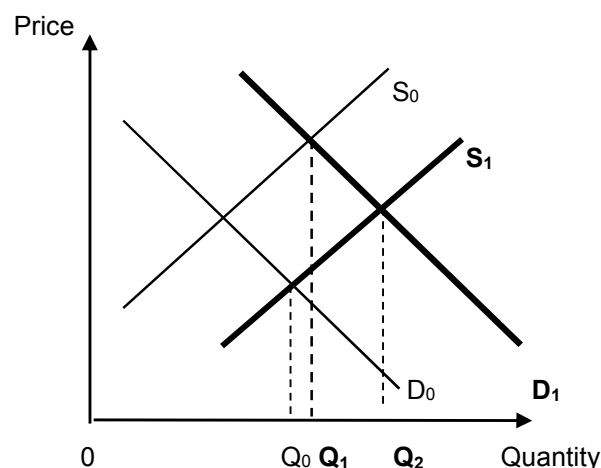
#### Technological advancement

<b>State</b>	One supply factor that affects the output of computer-based products is the technological advancement in computer-based products production.
<b>Elaborate And Exemplify</b>	Rapid technological advancement in recent years has lowered the cost of production of computer-based products, causing their supply to increase as producers are more willing and able to offer them for sale at various price levels. For instance, the prices of computer chips and batteries, important factor inputs in production of computer-based products, have fallen drastically over the years due to successful innovations by companies who invest heavily in research and development in their bid to develop a competitive edge over their rival firms. In China especially, firms are able to produce computer chips at extremely low prices. For instance, Next Thing, a company based in Oakland, California, and Shenzhen, China, has recently built a computer that costs only \$9, in conjunction with Chinese chip manufacturer Allwinner Technology, which specializes in chips for tablets. As cost of production falls ceteris paribus, the supply of computer-based products rises as producers are willing and able to offer more of their products for sale at all prices.
<b>Evaluate</b>	While cost of production may have fallen due to technological advancement, this do not necessarily translate to huge increase in supply due to profit considerations. Moreover, some firms are also venturing into niche markets that offer higher performance and higher priced computer-based products such as tablets and smartphones. Therefore, the cost saving may not be that substantial.

### Number of producers

State	Another supply factor that affects the output of computer-based products is the rise in the number of producers who venture into the computer-based products industry.
Elaborate And Exemplify	As the cost of production continues to fall due to technological advancement and consumers become more wealthy and receptive towards the use of computer-based products, selling computer-based products becomes increasingly deemed by producers as a lucrative business that ensures huge profits. This has prompted many new firms to enter the market for computer-based products as they try to enjoy a part of the profit pie too. For instance, within the smartphones and tablets market itself, there has been a drastic increase in the number of new brands in recent years such as China's Xiaomi and Huawei that promise more affordable prices for their similar specification products. At the same time, we have well established software companies like Microsoft who have ventured into producing tablets and tablet-laptop hybrid products to increase their market presence. Since market supply is the total amount supplied by all producers, a surge in the number of producers will directly cause the supply of computer-based products to increase, <i>ceteris paribus</i> .
Evaluate	Nevertheless, the entry of new firms is often accompanied by the exit of firms who are cannot keep up with competition in the highly competitive computer-based products market. An example includes the exit of Nokia, a previously hugely successful Finnish mobile phone company that could not catch up with innovations and cost-cutting in the smartphone industry. Therefore, the number of producers may not be a major factor contributing to the rise in supply and hence output of computer-based products in recent years.

Figure 1: Market for computer-based products



As previously mentioned, a positive taste and preference towards computer-based products, the rise in income and a fall in price of data plan, will increase its demand, as illustrated by the rightward shift of the demand curve from  $D_0$  to  $D_1$ . *Ceteris paribus*, equilibrium quantity increases from  $Q_0$  to  $Q_1$ . At the same time, technological advancement and rise in the number of producers will increase the supply of computer-based products, as illustrated by the rightward shift of the supply curve from  $S_0$  to  $S_1$  and this reinforces with the rise in demand to cause the equilibrium quantity to increase to  $Q_2$ .

### EVALUATION+CONCLUSION

- Having explained and evaluated the various demand and supply factors that all act to increase the equilibrium quantity of computer based products, I am inclined to argue that the fall in price of data plan and positive taste and preference towards computer-based products are likely to be the two most important factors affecting their output.
- On the demand side, while the rise in income do play a part too in boosting demand and hence equilibrium quantity, demand for computer-based products is likely to be income inelastic ( $0 < YED < 1$ ). Moreover, with the European Union facing financial crisis in recent years, world economic recovery has been taking place at a slow pace. Hence, income may have risen but only by a small extent. In fact, the quarterly GDP growth of Singapore has been revised

downwards recently due to pessimism. Therefore, the impact of rising income on demand and hence output of computer-based products is likely to be small.

- Ultimately, I feel that the positive taste and preference towards computer-based products and fall in price of data plans are likely to be the most important factors that have increased the demand and hence output of computer-based products.
- In recent years, the immense popularity of computer-based products have resulted in their ever-increasing demand as both teenagers and working adults crave for the latest computer-based products to keep up with trend and functionalities. Moreover, with the fall in price of data plan in recent years, usage of computer-based products has become much more affordable, hence increasing both the willingness and ability of consumers to buy computer-based products.
- Given that the **supply of computer-based products is likely to be price elastic ( $PES > 1$ )** due to short production period in factories, when demand for computer-based products increases, quantity supplied is going to increase by more than proportionate, ceteris paribus. This contributes to the dramatic rise in output of computer-based products in recent years.
- Conversely, **demand of computer-based products is likely to be price inelastic ( $PED < 1$ )** due to its high degree of necessity in today's digitalised world. Therefore, any rightward shift of the supply curve is only going to cause quantity demanded to increase by less than proportionate, ceteris paribus, hence limiting the impact of the supply factors on equilibrium output of computer-based products.
- In conclusion, while there may be many demand and supply factors contributing to the increase in output of computer-based products, the **positive taste and preference and fall in price of data plan are likely to be the most important factors, taking into consideration concepts of YED, CED, PED and PES.**

#### **GUIDE ON ALTERNATIVE EVALUATIONS AND CONCLUSIONS**

As this question is very open-ended, students may come up with various different conclusions on the most important factor that increases the equilibrium output of computer-based products in recent years. However, good justifications /evaluations should be based on analytical use of elasticity concepts of YED, CED, PED and PES. The YED value of computer-based products for instance is debatable and can be argued to be  $YED > 1$  too depending on the country's context (in less developed countries like Vietnam, computer-based products could be deemed as luxury good). For less developed countries as a result, students may argue that the rise in income could be a major factor since demand increases by more than proportionately, causing equilibrium output to rise dramatically. Similarly, the PED value of computer-based products is debatable too and can be argued to be  $PED > 1$  too depending on the country's context (in less developed countries like Vietnam, degree of necessity of computer-based products could be low and the price could constitute a high proportion of consumers' income). The PED and PES values of computer-based products will affect the importance of the demand and supply factors in general.  $PED > 1$  will mean that the supply factors will contribute greatly to a rise in equilibrium output since quantity demanded will increase by more than proportionately when supply curves shift right. Again, it is up to the students to argue which factors are likely to be more important in determining the output level of computer-based products. The key is the analytical use of elasticity concepts of YED, CED, PED and PES to justify their stands.



### **TYS N2015 Q3**

**'Market dominance is the main factor determining the profitability of firms.'**

**(a) Explain how market dominance can influence a firm's price and output decisions. [10]**

**(b) Discuss whether government intervention is always needed when a firm dominates the market. [15]**

#### **INTRODUCTION**

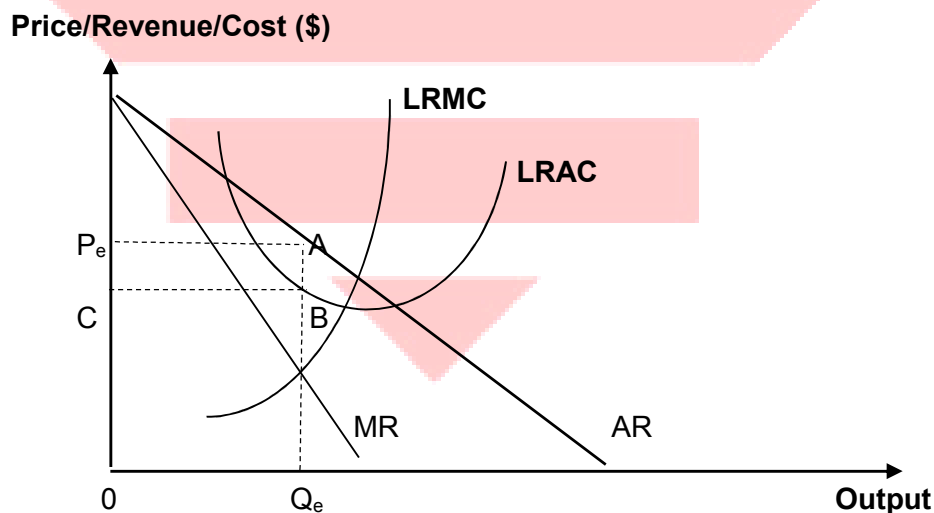
- Market dominance occurs when there are strong barriers to entry in which the firms set their own price or output and have the market power to influence market price or output and earn supernormal profits in the long run.
- Market dominance is seen in a monopoly where it is the sole producer of the product with no close substitutes or in an oligopoly where there is a price leader amongst the few big firms.
- In contrast, a firm in a perfectly competitive market has no market power because it is merely one of the many firms selling homogenous good and within a market where perfect knowledge prevails. So it is a price-taker and can earn only normal profits in the long run. Or in a monopolistic competitive market, due to low barriers to entry, each firm while able to set its own price, is unable to influence market price or output and can only earn normal profits in the long run.

#### **BODY**

**Explain how a monopoly can set price and earn supernormal profits in the long run**

- A firm decides on its profit maximizing output by matching its  $MC = MR$  and setting the price obtained from its own demand curve which will indicate the highest price that consumers are willing and able to pay for that quantity of output.
- The existence of high barriers to entry protects a monopoly from potential competitors, limiting the market to one sole seller with strong market dominance and power to set prices and output. A firm with market dominance shall face with a downwards sloping demand curve.
- Given the firm's downwards sloping demand as in Figure 1, the monopolist can lower prices in order to sell more output or restrict its output and sell at higher price, thus showing its ability to influence its own price, unlike a perfectly competitive firm which has to be a price taker.

Figure 1: A monopoly's price and output equilibrium



Referring to Fig 1, the monopoly sets the profit-maximizing price and output at  $P_e$  and  $Q_e$  respectively where its MC matches with MR.

Explain why  $MC=MR$  condition is necessary:

- At output below  $Q$ ,  $MR > MC$ . This means the addition to total revenue is more than the addition to total cost when one more unit is produced. The producer will increase total profit by producing more.
- At output above  $Q$ ,  $MR < MC$ . This means the addition to total cost is more than the addition to total revenue when one more unit is produced. The firm's total profit is reduced by producing the additional unit. Hence the profit maximizing equilibrium is at  $Q$  where  $MC=MR$ .
- The price set will be obtained from the demand curve at the output level where  $MC=MR$ .
- At equilibrium output  $Q_e$ , total revenue ( $P \times Q$ ) earned is  $0P_eAQ_e$  and the total cost ( $AC \times Q_e$ ) incurred is  $0CBQ_e$  and profit which is total revenue minus total cost which is  $P_eCBA$ .

- With market dominance, the monopolist is able to earn supernormal profits not only in the short-run but retain it in the long-run.

### Market Dominance in an oligopoly

- In an oligopoly, firms are mutual interdependence and pricing and output decisions are dependent on rivals' actions and reactions.
- Firms within an oligopolistic industry might decide to collude by avoiding price competition. Collusion is tacit where the behaviour of each firm is the result of an unwritten rather than formal agreement. They could do this tacitly by following the pricing policy of a recognised leader. The leader could be the dominant firm. Price will only change if a rise in costs affects the profit margin. The principle is the same: each firm will act in the same way in the interests of the group as a whole.
- ComfortDelgro- the dominant taxi company in Singapore of almost 60% market share is always the one that initiates a fare hike while the rest will follow suit.

### Compare to a firm with no market dominance

In contrast for a firm with no market dominance (low barriers to entry), though it can charge a price at profit maximising level, it can earn only normal profits in the long-run as any supernormal profits earned will attract new firms into the market and compete it away. In a perfect competitive market, entry of more firms will cause the market supply to rise which lead to a fall in price till a firm as a price-taker only earn normal profits in the long-run.

OR

In a monopolistic competitive market, entry of more firms will cause the demand for the existing firms to fall as some of their consumers turn to alternatives till they only earn normal profits in the long-run.

### CONCLUSION

From the above analysis it is clear that market dominance plays a key role in pricing and output decisions of firms in a market. In general, firms will have greater pricing and output power if they have stronger market dominance and could continue to earn supernormal profit even in the long run due to higher barriers to entry.

(b)

### INTRODUCTION

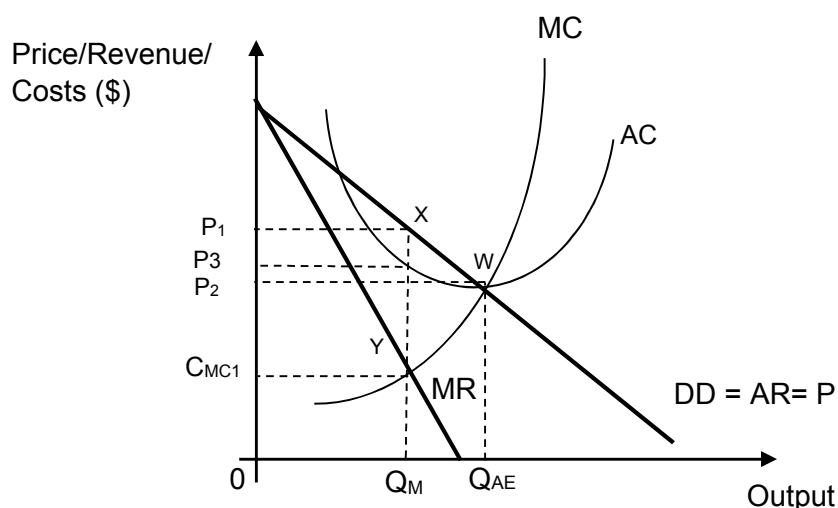
- Market dominance can lead to allocative inefficiency in resource allocation that calls for government to intervene in the markets for goods and services to achieve efficiency.
- To examine the reasons why government intervenes when market dominance occurs and also consider whether there is justification for not intervening because of the possibility of some positive impact from market dominance.

### BODY

#### Justification for intervention

When a profit maximising firm dominates the market, it may choose to restrict output and charge a higher price than if it were in a market where there is more competition. Thus, price is greater than marginal cost and this leads to allocative inefficiency (see figure 2), where at the profit maximising output, price charged,  $P_1$  is higher than its MC. Hence  $P > MC$ .

Figure 2: Market Dominance leading to Allocative Inefficiency





- With reference to Figure 2, at the equilibrium output is at  $Q_M$  when  $MR=MC$ ,  $P_1 > MC=C_{MC1}$ , this means the consumers place a higher value of additional units of the good produced than what it costs the firm to produce it. It is still possible to allocate resources in such a manner as to make someone (the consumer) better off without making someone else (the firm) worse off till the socially optimum output  $Q_{AE}$  where  $P = MC$  at point W.
- Hence there is underproduction  $Q_{AE}-Q_M$
- For the amount of goods  $Q_{AE}-Q_M$ , the welfare gain is represented by the area  $Q_MXWQ_{AE}$  while the cost is  $Q_MYWQ_{AE}$ .
- Since benefits outweigh costs, the society suffers from a welfare loss of  $YXW$  from  $Q_{AE}-Q_M$  of goods not being produced.

### Impact of Market Dominance

- The larger the firm, the more able it can dominate the market, and the **steeper and hence relatively more price inelastic its demand curve and the greater would be the disparity between P and MC. Hence the greater exploitation of the consumers by the producer and the greater the inefficiency in resource allocation.**
- As the firm has greater market power to control quantity produced for the market, **consumers would be unable to enjoy few quantities of the good** compared to a situation where there is greater competition.
- There is also a **potential inequity** when the firm produces an essential good (such as insulin for diabetes patients) and reaps a larger income at the expense of the consumers who have no choice but to buy the necessity.
- To secure market dominance, the firm may need to spend resources on advertisements which could **distort demand, misleading consumers** into buying things that they may not necessarily require and hence wasting resources leading to further inefficiency in resource allocation.
- In addition, the firm with market dominance, insulated from the rigours of competition in the market, might become **more complacent and lax in cost control** as supernormal profits could still be earned even if output is not produced at least possible cost and hence waste resources. Hence with market dominant firms suffer from **X-inefficiency**.

From the above reasons, it is seen that government intervention is necessary.

### Justification for not intervening

- However, though it is good for government to breakdown a firm's dominance and promote competition, there are also benefits arising from large scale production such as R&D, internal economies of scale and innovation. This is more pertinent for firms in Singapore, where with intense competition from foreign competition, there is a need to allow local firms to grow larger in order to compete successfully with foreign firms like the local banks are encouraged to merge.
- Another instance when a firm is a natural monopoly such as the local public utilities PUB where one firm alone can serve the entire needs of market and there is no need for another firm. In fact another producer would lead to negative profits as the market could not support two producers. In this circumstance, it is often suggested that a MC pricing policy be stipulated for implementation by the firm as essential good is being produced.
- **However**, with MC pricing, the government still needs to provide subsidies to the producer so that it could remain in business. Thus, the method of intervention is not necessarily to deregulate the market to increase competition in the market, government subsidy is required for a natural monopoly which provides essential good. And at time, AC-pricing or a 2-part tariff may be used instead if the government chooses not to subsidise so as not to strain its budget.

### CONCLUSION

- Market dominance is one of the reasons for government intervention. However, it is not all the time that the government must always intervene when a firm dominates the market.
- In the context of Singapore, we see the setting up of the Competition Commission of Singapore to promote competition in telecommunications and transportation sectors with deregulation and liberalisation. However, there are also instances where there is no need for intervention as it promotes benefits to consumers subsequently like through R&D, EOS and innovation.
- Government's intervention should therefore be on a case by case basis depending on the motive of the firm.

### TYS N2015 Q5

In its September 2013 Recent Economic Developments Statement, the Monetary Authority of Singapore noted that inflation was expected to rise moderately. Strong GDP growth in Q2 2013 was mainly due to increased output in the manufacturing and trade-related service sectors with a slowing of growth in private consumption. There was expected to be continued strong wage pressure from persistent tightness in the labour market caused by shortages in labour supply, accompanied by steady expansion in demand for goods and services from the US, Japan and the Eurozone.

Source: Recent Economic Developments in Singapore, MAS, 5 Sep 2013

- (a) Explain how the above-mentioned factors might have caused the rate of inflation to rise in Singapore. [10]  
(b) Discuss whether exchange rate appreciation should remain the most important policy instrument in controlling the rate of inflation in the Singapore economy. [15]

### INTRODUCTION

**Key words/concepts:** Inflation refers to a sustained increase in the general price level (GPL) of goods and services in a country over a given period of time, usually a year. The rate of inflation is affected by changes in the aggregate demand (AD) and supply (AS) of an economy.

**Issues/context:** In 2013, Singapore faced both an “expansion of demand for goods and services from the US, Japan and the Eurozone” and “shortages in labour supply”.

**Approach:** This essay will examine the above-mentioned factors and analyse their impact on the rate of inflation in Singapore.

### BODY

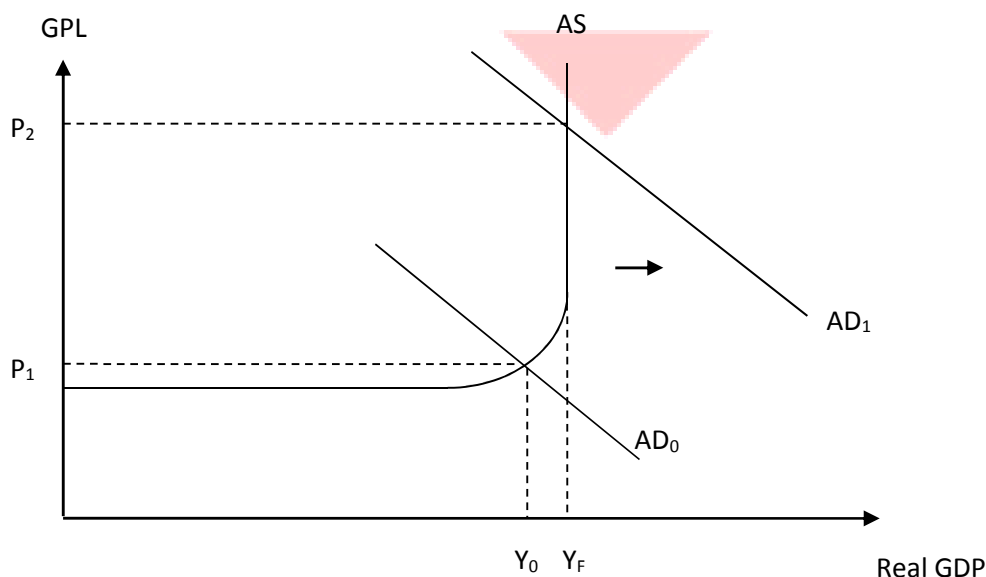
#### Demand-pull inflation due to increase in external demand

**State:** An increase in external demand may have led to demand-pull inflation, causing the rate of inflation in Singapore to rise.

**Explain & Exemplify:** An “expansion in demand for goods and services from the US, Japan and the Eurozone”, as stated in the stimulus, implies an **increase in exports (X)**, a key component of AD. Thus there would have been an **overall increase in AD** as a result of significant rise in external demand.

The increase in AD results in rapid growth, which may subsequently lead to **demand-pull inflation**, i.e. when actual growth outpaces potential growth. Actual growth refers to annual increase in national output, whereas potential growth is the annual increase in the economy’s productive capacity. In an economy operating close to full capacity, the increase in AD exerts upward pressure on prices, leading to overheating of the economy.

Figure 1: Demand-pull inflation in the Singapore economy

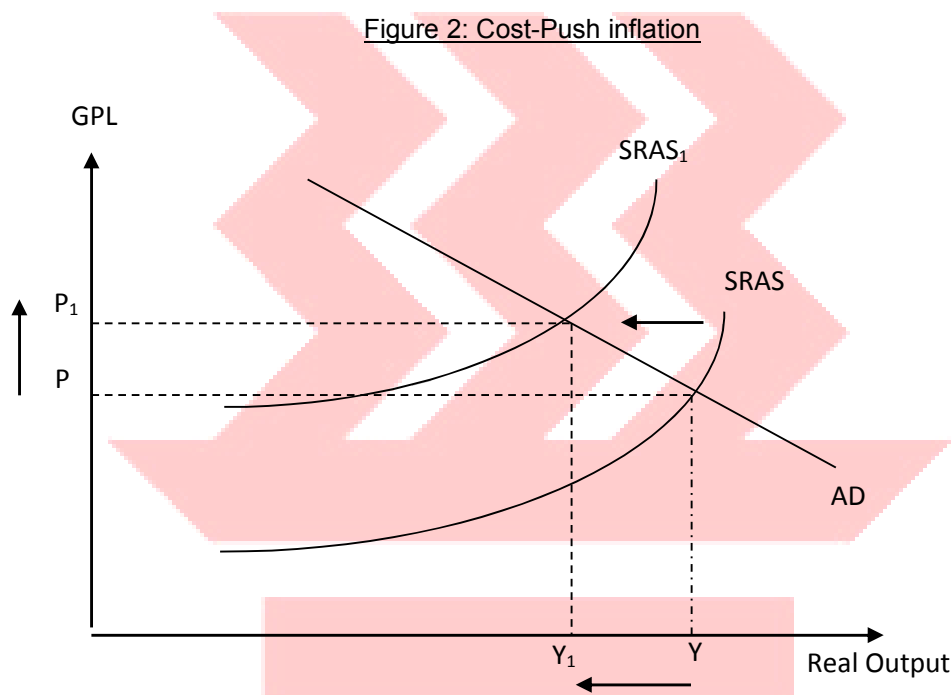


- With reference to Figure 1, an excessive/rapid rise in AD from  $AD_0$  to  $AD_1$  will raise the real output marginally from  $Y_0$  to  $Y_F$ . This represents an increase in actual output or actual growth, with **little or no increase in productive capacity**, i.e. without corresponding increase in AS. The economy is likely to be operating near or at full-capacity.
- Rising AD leads to **increased competition for resources** such as labour. This **drives up business costs** – e.g. wages, rentals – and results in inflationary pressures. There is a sustained **rise in the GPL** of the Singapore economy **from  $P_1$  to  $P_2$** .

### Cost-push inflation due to labour market tightness

**State:** Moreover, persistent tightness in the labour market may have resulted in cost-push inflation, causing the rate of inflation in Singapore to rise.

**Explain & Exemplify:** In the years leading up to 2013, the Singapore Government had begun tightening the influx of foreign workers. This is likely to have contributed to the “labour shortages” mentioned in the stimulus. The unavailability of cheap foreign labour exerted upward pressure on wages, especially for domestic lower-income unskilled workers. As **wages are a cost of production**, business costs are expected to rise in the short run, thus contributing to the increase in the rate of inflation.



With reference to Figure 2, an increase in the costs of production due to a rise in labour costs at all levels of output will result in an **upward shift of the SRAS curve** to  $SRAS_1$ . This results in a **higher price level at  $P_1$**  and a lower equilibrium output at  $Y_1$ . The rate of inflation thus rises.

### CONCLUSION

Thus, the rate of inflation in Singapore likely increased due to a combination of both demand-pull inflation and cost-push inflation, brought about by an increase in AD and a fall in SRAS respectively.

(b)

### INTRODUCTION

**Key words/concepts:** To control inflation, Singapore mainly adopts an exchange rate policy of a gradual and modest appreciation of the S\$.

**Issue/context:** From Part (a), inflation in Singapore is likely a combination of both demand-pull inflation and cost-push inflation. **Whether exchange rate appreciation should remain the most important policy instrument in controlling inflation rates depends on the main causes of inflation faced in Singapore.**

**Approach:** This essay seeks to evaluate the importance of exchange rate appreciation by considering its effectiveness in tackling the main causes of inflation.

## BODY

### THESIS: Exchange rate appreciation is very important policy instrument in controlling inflation in Singapore

#### Exchange rate appreciation to tackle demand-pull inflation

**State:** Exchange rate appreciation reduces demand-pull inflation.

**Explain:** A strong S\$ implies that our exports will be less price competitive, ceteris paribus, as exports now become more expensive in terms of foreign currencies and imports are becoming cheaper in S\$ as less S\$ is needed to buy the same amount of foreign currencies. Assuming that the Marshall-Lerner condition in which the sum of price elasticity of demand for exports and imports is more than 1 holds, Singapore's balance of trade will worsen, resulting in slower economic growth. With a fall in net exports, AD will fall from  $AD_1$  to  $AD_0$  (refer to Figure 1). GPL falls from  $P_1$  to  $P_0$ , relieving demand-pull inflationary pressures. This occurs even though the level of national income remains at the full employment of national income,  $Y_F$ .

**Evaluate:** As a small and open economy, much of Singapore's growth depends on external demand for Singapore's goods and services. Given that the rise in AD stems mainly from external demand in 2013, exchange rate appreciation would be very appropriate in reducing inflation.

#### Exchange rate appreciation to tackle import-price-push inflation

**State:** Exchange rate appreciation reduces import-price-push inflation.

**Explain:** Appreciation of S\$ will make imports relatively cheaper in terms of domestic currency. Cheaper import prices will lower the cost of production for firms in general. This has the effect of shifting the SRAS to the right (refer to Figure 2), leading to a reduction in price levels from  $P_1$  to  $P_0$  and thus reducing inflationary pressures.

**Evaluate:** Being a small and open economy, Singapore is particularly susceptible to import-price-push inflation. This is because Singapore has limited natural resources and is heavily reliant on imports of necessities, raw materials and semi-finished goods for consumption and production of goods for export. Imported inflation thus accounts for a significant portion of the overall inflation observed. As such, exchange rate appreciation is arguably the most important and effective policy instrument in managing inflation in Singapore. **However in the preamble, in 2013, import-price push inflation did not seem to be the culprit of inflation. Nonetheless, it does not mean Singapore is not susceptible to this threat in the near future. Thus, appreciation remains an important policy to combat inflation.**

### ANTI-THESIS: Limitations of exchange rate limitations and other policies are needed to control inflation in Singapore

#### Limitations of exchange rate appreciation in the long run

**State:** Exchange rate appreciation is a short-term solution to managing inflation.

**Explain & exemplify:** In this case, while exchange rate appreciation is effective in managing demand-pull due to a rise in X, it is ultimately a short-term solution. It does not, for instance, solve the root causes of tight capacity and high prices of imported raw materials. As such, exchange rate appreciation may not be the important policy instrument in controlling inflation in the long term.

#### Limitations of exchange rate appreciation in tackling wage pressures

**State:** Exchange rate appreciation fails to tackle cost-push inflation due to labour market tightness.

**Explain & exemplify:** In recent years, growing unavailability of cheap foreign labour has resulted in upwards pressure on wages as firms turn to a limited pool of domestic labour. This increases cost of production in general, resulting in cost-push inflation (refer to Figure 2).

**Evaluate:** Cost-push inflation due to labour market tightness has become increasingly responsible for increases in the rate of inflation in Singapore. Given that this is a domestic issue, exchange rate appreciation will not be effective in managing such inflation.

#### Use Supply-side policies

A more appropriate approach would be the implementation of **supply-side policies, which aim to raise the productive capacity of the economy in the long term. This may involve raising the level of labour productivity** to overcome the lack of manpower via retraining and education.

E.g. The SkillsFuture movement was introduced by the Singapore government in 2014 to encourage lifelong learning and training. Programmes and initiatives include the issuance of SkillsFuture Credit to Singaporean workers, which may be used to offset further education costs, mid-career study awards and subsidised training courses.

It may also include promoting R&D to bring about technological advances which could reduce the demand for labour. E.g. In 2011, the government introduced the Productivity and Innovation Credit (PIC) scheme. Under this scheme, Singapore firms enjoy tax deductions and/or cash payouts for investment in innovation and productivity improvements such as employee training, purchase of automation equipment and R&D.

**Diagram:**

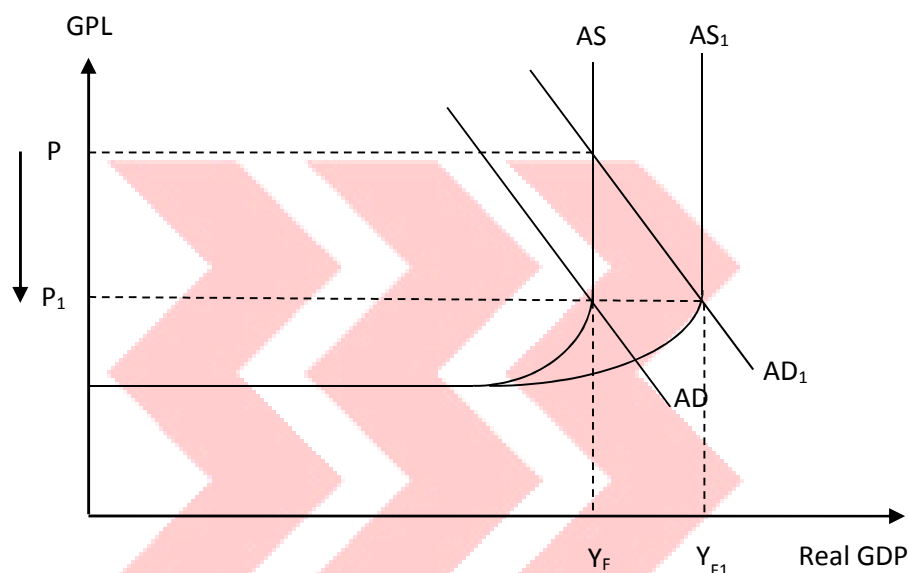


Figure 3: Impact of supply-side policies on GPL

In doing so, wage pressures are reduced as unit costs of production decrease. Hence the SRAS curve as well as the LRAS will shift rightwards, lowering the rate of inflation (*refer to Figure 3*). This approach is hence also a strategic long-term approach in managing demand-pull inflation by ensuring that AS grows in tandem with AD, thus allowing Singapore to achieve sustained non-inflationary economic growth.

#### **Alternative policy instruments – contractionary fiscal policy**

**State:** Fiscal policy may also be used to control inflation in Singapore.

**Explain & exemplify:** Contractionary fiscal policy and/or monetary policy are possible alternative instruments to be used in relieving demand-pull inflationary pressures. In the case of fiscal policy, for example, AD may be reduced by decreasing government spending (**G**), which would result in a fall in GPL and hence a reduction in demand-pull inflation.

**Evaluate:** However, the use of contractionary fiscal policy faces many limitations in the context of Singapore. Given the lack of natural resources, Singapore imports most basic necessities, raw materials and intermediate goods to produce our exports. As such, Singapore is a small and very open economy with a large import leakage. Hence, the size of our multiplier is small due to the high marginal propensity to withdraw. This reduces the effectiveness of fiscal policy in reducing AD and hence demand-pull inflation. **Besides, the preamble mentioned there was a slowing down in consumption and thus it is unnecessary to bring it down further.**

#### **CONCLUSION**

The importance of a policy instrument in controlling inflation rates lies in its effectiveness when applied within the Singapore context. As the main causes of inflation in Singapore are most due to external factors, it can be argued that exchange rate appreciation remains the most important instrument, particularly in the short term. Nonetheless, its use should be complemented by other policies, e.g. supply-side policies, which are necessary in controlling inflation rates in the long term.

### TYS N2015 Q5

During the recent world-wide recession many European countries chose low interest rates as the monetary policy rather than adopting demand-led fiscal policy stimulation. At the same time, with most of these countries' governments introducing large cuts in government expenditure in order to reduce their budget deficits, a fiscal contraction actually resulted.

Discuss which policy approach is appropriate for a country during a world-wide recession. [25]

#### Schematic Plan:

<b>Introduction</b>
Impact of world-wide recession on countries: Falling AD, falling or negative growth, demand-deficient unemployment Demand-management policies to address the negative effects of the recession.
<b>Body</b>
<b>Choice 1: Use interest-rate monetary policy <u>over</u> fiscal stimulus to counter the world-wide recession</b> <ul style="list-style-type: none"><li>• Explain how interest-rate policy works (AD-AS analysis + diagram)</li><li>• ↓interest rates → direct impact - ↓low cost of borrowing (↑C + I), indirect impact of depreciation of currency (↑NX) → ↑AD → ↑NY via multiplier effect.</li><li>• Explain why this is preferred over expansionary fiscal policy – briefly explain how it works and how large budget deficit and thus crowding-out effect will limit its effectiveness.</li><li>• Nonetheless, interest-rate policy has its limitations: Consumer and Investor pessimism + interest rate already close to zero</li></ul> <b>Choice 2: Use of austerity measures to counter the world-wide recession</b> <ul style="list-style-type: none"><li>• Explain how the policy works – cut budget deficit to raise confidence to increase C and I</li><li>• But temporary contraction of the economy</li><li>• Governments have to be mindful of what to cut back spending and who to raise tax</li></ul>
<b>Synthesis</b>
Criterion to decide which policy is more appropriate: <ul style="list-style-type: none"><li>• Size of government budget deficit (e.g. EU economies) and the need to use austerity measures to reduce the budget deficit</li><li>• Openness of the economy (e.g. Singapore versus USA/ China)</li><li>• Consider the need for supply-side policies to be used together with demand-management policies.</li></ul>
<b>Conclusion</b>

#### Suggested answers

##### Introduction:

Key Concept & Issue	<ul style="list-style-type: none"><li>• With the recent world-wide recession, countries face falling aggregate demand (AD) and falling national income resulting in negative growth as well as demand deficient unemployment as consumption and production of goods and services are reduced.</li><li>• Therefore, governments need to decide on appropriate demand-management expansionary policies that help to counter the negative effects of the recession and provide a boost for the economy.</li></ul>
Approach	Appropriateness of <b>interest rates monetary policy over fiscal policy stimulation and austerity measures</b> during a world-wide recession using the AD-AS framework will be discussed and provide a recommendation based on the extent of the budget deficits, and the size and openness of the country.

##### Body:

##### Choice 1: Use interest-rate monetary policy over fiscal stimulus to counter the world-wide recession

##### Explain how interest-rates monetary policy works:

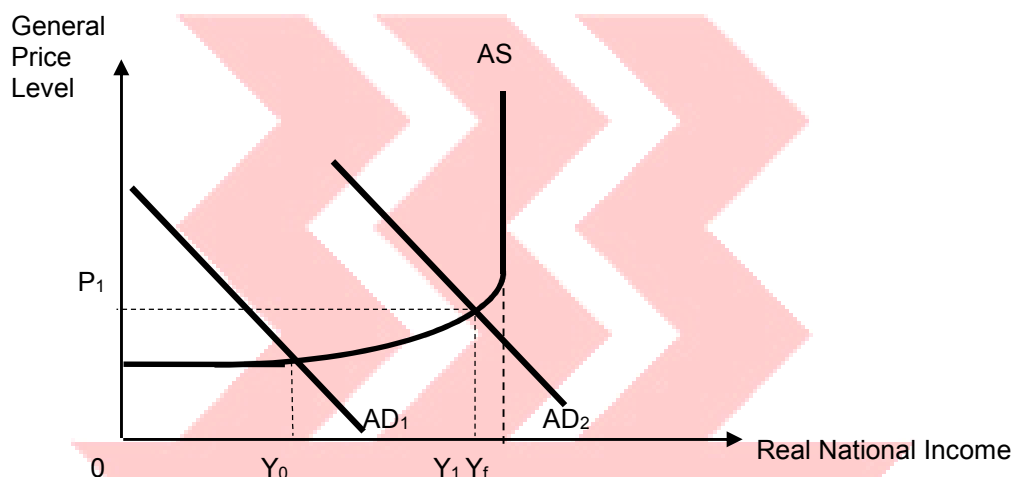
- Low interest rates help keep cost of borrowing low for consumers who purchase durable goods / big-ticketed items, encouraging consumption.
- At the same time, low cost borrowing also increases the expected rate of returns from private investment ( $MEI > r$ ) and encourages investment by firms.
- Besides, if interest rates set by the Central Bank are relatively lower than that of other countries, short-term capital outflow results even as investors search for higher interest rates elsewhere. The increase in supply of currency in



the foreign exchange will result in depreciation. Assuming the Marshall Lerner condition holds ( $|PED_x + PED_m| > 1$ ), net exports will rise.

- Together consumption, investment and net exports boost AD from  $AD_0$  to  $AD_1$  (as shown in Figure 1). This results in unplanned fall in stocks, encouraging production levels to increase as firms employ more factor inputs.
- Briefly explain the multiplier process:
- An autonomous increase in investment and consumption (e.g. investment or government expenditure) will generate income for individuals employed by firms in the capital goods industry. These individuals will spend a proportion of the additional income on consumption, depending on their marginal propensity to consume (MPC). This further creates income for individuals employed in the consumer goods industry who will further spend their additional income on consumption. This cycle of spending and re-spending on consumption will continue until the increase in income becomes negligible. The eventual increase in national income is several times the initial increase in expenditure. The multiplier,  $k$ , represents how many times the national income increases with respect to the initial change in expenditure.
- Through the multiplier effect, national income increases from  $Y_0$  to  $Y_1$ , resulting in actual growth and a fall in demand deficient unemployment.

Figure 1: Effect of Expansionary demand management policy



### Limitations

- **Consumer & Investor Pessimism:** Given the recession is widespread across many economies, it is likely that consumer and investor pessimism will persist. This implies that despite the low interest rates by countries adopting expansionary interest rate monetary policy, consumers and investors will be reluctant to borrow. Instead due to the uncertain economic environment, firms and consumers may reduce investments and spending respectively.
- **Interest-rate is at or close to zero:** Moreover, if existing interest-rates are already close to or at zero, it will pose a challenge for the Central Bank to lower it further to stimulate consumption and investment e.g. the UK and the US.
- Thus, some countries have resorted to quantitative easing (QE) which involves printing money to pay for bonds purchased by the central bank, aiming to inject more cash to boost liquidity in the financial system.

### Explain why interest-rates monetary policy is preferred over fiscal stimulus:

#### Explain how fiscal policy stimulation works:

- Fiscal policy stimulation through a rise in government spending and / or cut in taxes is aimed at increasing AD.
- A cut in personal income taxes raises disposal income and encourages consumption.
- Similarly, a reduction in corporate taxes increases firms' profit and boosts investment.
- Together consumption, investment and government expenditure increases AD and through the multiplier, national income increases

### Limitations

- **High budget deficit in many of the EU countries - crowding-out effect:** If the government finances the fiscal stimulus through borrowing from the banks, it competes with firms and consumers for existing loanable funds which crowds out investment and consumption.
- For others like Singapore - **proportion of government spending:** Size of  $G$  needs to be significant for fiscal policy to be successful. This means that countries are driven by other components for growth (e.g. exports) may not be as successful with using fiscal spending to improve the economy.

### Choice 2: Use austerity measures to counter the world-wide recession

- From the question stimulus, many governments who face budget deficits (where government spending exceeds revenue earned) are implementing austerity measures via large cuts in government expenditure. The problem of



government debt is an urgent one as evading the issue may result in a loss of confidence and capital flight (both hot money and FDI) from these debt-ridden countries, and lower living standards in the future.

- While this policy seeks to reduce the budget deficit, the **unintended consequence is that AD falls when G falls.**
- **Evaluation:**
- Given the large budget debt, these governments have prioritized reducing the budget deficit over reviving the economy even if it means pushing the economy into a deeper recession in the short run. But this does not mean they have to cut back spending and raise tax indiscriminately. They can choose to reduce spending on things like military or space exploration that do not impact the lives of the people directly and to raise tax on luxurious goods and income tax of the top few percent of the superrich so as not to discourage the middle-income people from work.
- Overall, interest-rate monetary policy is probably still more appropriate as fiscal stimulus directly opposes the austerity measures.
- However, to ensure the success of monetary policy, the government must ensure the increase in AD from monetary policy outweighs the fall in AD due to fall in government expenditure.

**Synthesis: Appropriateness of policy depends on the size of government budget deficits and size and openness of the economy:**

- A large and not-so-open economy e.g. USA and India driven by consumption-led growth is likely to have a large multiplier size (due to their relatively larger MPC). This increases the effectiveness of demand-management policies, especially fiscal policy as there is a definite increase in AD via increase in G and national income increases by a larger multiple of the initial injection. This is as opposed to monetary policy where the increase in C and I is not definite, depending on the optimism in the economy. Nonetheless, if the budget deficit is huge, fiscal stimulus may not be effective due to crowding-out effect and it is at best to jumpstart the economy. And those with enormous debt that confidence is shaken, austerity measures are used.
- This is in contrast to smaller, more open economies e.g. Singapore which do not have as much resources and are import dependent resulting in a larger MPM or countries which have a culture of saving e.g. Asian economies where MPS is higher. These attributes result in a larger MPW and hence smaller multiplier which reduces the effectiveness of demand management policies to boost the economy. But Singapore has budget surplus and strong reserves so government can spend and lead to 'crowding-in' effect.
- More open economies which depend on export-led growth are better off with interest-rate policy assuming they have a flexible exchange rate system – the depreciation of currency can trigger an increase in net exports (as explained earlier) and increase AD. **Evaluation:** However, one needs to be aware that though Singapore is a small, open economy with a small multiplier and export-led growth, interest-rate policy does not work for her as she is an interest-rate-taker. Instead exchange rate monetary policy is applied, where SGD is allowed to depreciate slightly during recession to boost exports.

**Conclusion:**

The appropriateness of the policy for a country depends on the nature, openness of the economy as well as the size of budget deficit of a country. Some economies may choose to choose interest rate policy if they have an open economy, while less open economies may decide on fiscal stimulus. Countries with large budget deficits may opt for monetary policy instead of fiscal policy. Ultimately, these short-run policies need to be complemented with long-run supply side policy to achieve sustained growth.

## TYS 2015 Q6

“We are restructuring to become more competitive, not less.” Mr Lim Hng Kiang, Minister for Trade and Industry, The MTI Times, Committee of Supply 2013.

(a) Explain why an economy's comparative advantage might change over time. [10]

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

### Schematic Plan

<b>Introduction:</b> Define Comparative Advantage & state key issues of essay
<b>Development:</b> Concept of CA in terms of OC. Exemplify using Table (till diff in OC) or PPC. Explain 3 factors that cause CA to change over time
<b>Conclusion</b>

### Introduction

A country is said to have comparative advantage in the production of a good when she can produce the good at a **lower opportunity cost** than another country. Ricardo's theory assumes comparative advantage is static. The theory overlooks the fact that additional resources can be made available to the trading nation because they can be created or imported. Hence, there could be changes in the comparative advantage over time. This essay seeks to explain why an economy's comparative advantage **might change** over time

### Development

The illustration of the Law of Comparative Advantage is based on the following assumptions:

- Only **2 countries** are involved in the production and exchange of **2 commodities**.
- There is **constant opportunity costs of production** of the goods, **no transport costs**, which might outweigh the benefits of specialisation and trade, **no restrictions to trade**, there is **perfect factor mobility within each country** and **factor immobility between countries**.

Illustration on Specialisation & Trade

	Production for textiles and cars before specialization and trade		Opportunity Cost of producing 1 unit of	
Countries	Textiles	Computers	Textiles	Computers
Singapore	20	30	3/2 C	2/3 T
Vietnam	15	10	2/3 C	3/2 T
World	35	40		

- Singapore has absolute advantage in production of both textiles and computers since with the same amount of resources, she is able to produce more than Vietnam for both.
- However, countries still can gain from trade if they specialize according to their comparative advantage which is determined by their opportunity cost in production or relative efficiency in producing the good.
- Before specialization, Singapore produces 20 units of textiles and 40 units of computers which means it has to give up 2/3 unit of computers for 1 unit of textile or 3/2 unit of textiles for 1 car.
- On the other hand, Vietnam produces 15 units of textiles and 10 units of cars which means it has to give up 3/2 unit of cars for 1 unit of textiles or 2/3 unit of textiles for 1 unit of car.
- This implies that Singapore and Vietnam has a lower opportunity cost in producing cars and textiles respectively.

Economists use the term comparative advantage when describing the opportunity cost of two countries. **In the above example, Singapore gives up fewer units of Textiles to produce Computers. She incurs a smaller opportunity cost of producing computers and is said to have a comparative advantage in producing it.** Unless the two economies have exactly the same opportunity cost, usually one economy will have a comparative advantage in one good, and the other economy will have the comparative advantage in the other good. The law of comparative advantage states that trade can benefit all countries if they specialise in the goods in which they have a comparative advantage in the production of a good, that is, she can produce the good at a lower opportunity cost than another country. This would enable an economy to consume beyond its PPC curve.

## **Dynamic Comparative Advantage**

Dynamic comparative advantage refers to a changing pattern in comparative advantage; governments can establish policies such as training and investment in R&D to promote opportunities for changes in comparative advantage over time. For instance, the Japanese were among the first to recognize that comparative advantage in a particular industry can be created through the mobilization of skilled labour, technology and capital. Their energy efficient cars were able to capture a large share of the car market globally even though the CA in car manufacturing was first enjoyed by the US.

### **Factors that cause comparative advantage to change over time: Must link to opportunity costs**

#### **Changes in in Factor Endowments**

- Climate and resource endowments (e.g. skilled and unskilled labour, capital stock and amount of arable land) among countries may change over time. Factor endowment stresses the importance of the quantity and quality of the factors of production. Countries that possess relatively abundant natural resources such as oil, natural gas, gold or diamonds would have a comparative advantage in its production. However, the depletion of such natural resources over time would result in such countries having comparative disadvantage instead.
- Due to globalization and international mobility of resources, a country's CA may be eroded if it does not keep improving. This is in contrast to the assumptions made in the 2 countries, 2 goods example in the illustration of the Law of Comparative Advantage above where there is perfect factor mobility within each country and factor immobility between countries.
- For instance, Singapore may have CA in providing port and airport services due to her geographical location and efficiency. However, many economies such as Malaysia, HK and Middle Eastern countries have made improvement to their port and airport services via free interchange of technology and intellectual capital across national boundaries. This would pose a threat to Singapore and she may lose her CA in this area unless she makes improvement constantly.
- Factor endowments may change over time as savings lead to accumulation of more capital and education raises the skill level of the labour force of certain economies resulting in changes in CA. For instance, international financial inflow of funds into the IT sector of India from the US has contributed to India gaining CA in IT related services.

#### **Improvement in Technology**

CA might change when countries develop capabilities in cutting edge technologies in their chosen fields. The ability to continually keep ahead in the technological race gives a country comparative advantage while those that are complacent will lose their CA. In order to compete globally, a country has to innovate to find ways of cutting production costs and improve the quality and reliability of her goods. The emergence of low cost developing countries like China in the past has resulted in Singapore losing her comparative advantage in labour intensive manufacturing goods such as textile. As Singapore lose CA in one area, improvement in technology and innovation have resulted the gaining of CA in capital intensive goods such as in pharmaceutical industry and oil refinery.

#### **Government Policies**

Finally, the government can establish policies to promote opportunities to develop comparative advantage in certain areas over time. For instance, in line with the vision of building a Smart Nation, Singapore's conducive ecosystem and infrastructure tend to attract industries and talents which may result in gaining CA in high value added capital intensive areas such as R&D. Some of the measures used by the Singapore government to develop comparative advantage in certain areas include specific subsidies, training grants, tax concessions or even the creation of state enterprises.

#### **Conclusion**

An economy's comparative advantage might change over time due to changes in the opportunity costs in the production of various goods and services. The factors that determine whether a country can continue to have comparative advantage or lose it include changes in factor endowments, improvement in technology and government policies.

**6(b) Assess the measures adopted by the Singapore government to improve its global competitiveness. [15]**

**Schematic Plan:**

<b>Introduction</b>	Explain what measures of global competitiveness help to address and what is required for a country to be globally competitive. Provide the approach for the essay.
<b>Development</b>	In the context of Singapore, discuss with evaluation & critical comments: <b>SS side policies</b> – reducing cost (thus price of exports) and improving quality of exports <b>Exchange rate policy</b> <b>Trade Policies</b> to gain access to global market
<b>Conclusion</b>	Pertinence of policies that enhance her export competitiveness: supply side and income policies as well as exchange rate and trade policies

**Introduction**

- Enhancing global competitiveness requires **strong institutions that ensure the lowering of cost, improvement of quality, ability to adapt, and a high capacity to innovate and seek out new markets**. This essay seeks to discuss measures adopted by Singapore government to improve its global competitiveness by making Singapore **more resilient to economic uncertainties** and better equipped to **adapt to a rapidly changing environment**.
- In Singapore, given the inherent constraints of the nature of our economy, demand management policies such as fiscal policy are of limited effectiveness. The Singapore government relies mainly on supply-side policies to stimulate economic growth especially in the long run. Supply-side policies are policies designed to improve the supply-side potential of an economy and thereby contribute to a faster rate of growth of real national output.
- Being a trade reliant economy, it is important for Singapore to improve its global competitiveness by making our exports more price competitive. This is achieved mainly by **supply side policies**.

**Supply-side policies to lower cost of production so as to ↓Px**

- Long-run supply-side policies are used to improve the productivity of the Singapore economy and thereby lowering the cost of production and thus price of exports making our exports more attractive in the global arena. And assuming demand for our exports is price elastic, quantity will increase more than proportionate and export revenue will rise.
- There are various policies which focus on labour and capital productivity as well as supporting **restructuring** in Singapore: National Productivity Fund (NPF) provides grants to help enterprises in all sectors, with special emphasis initially on sectors where there is potential for **large gains in productivity**. Transition Support Package (\$7.3 billion) was implemented in 2013. This includes a Wage Credit Scheme (WCS) to encourage companies to **share productivity gains** with their workers through higher wages, **Productivity and Innovation Credit (PIC) bonus** that encourages firms to **invest in productivity** such as **retraining** of workers with a dollar-to-dollar matching cash bonus and the Corporate Income Tax (CIT) rebate. ICT for Productivity and Growth (IPG) Programme seeks to accelerate the adoption of ICT solutions among SMEs and boost their productivity by providing subsidies for ICT-based productivity solutions.
- Generally, the **main criticism** to these policies is the **long gestation period**. Thus such policies are not meant to be implemented only when there is crisis but they have to be put in place as part of Singapore's commitment to remain globally competitive. The other concern with such policies lies in the attitude, aptitude and age of the workers who were sent for such courses. Without a good attitude towards learning, an aptitude and flair for learning new skills, and the ability to internalise the skills, the level of productivity may not have increased as desired and hence render the policy less effective.

**Exchange Rate policy**

- During times when import-price push inflation is less of a threat to the cost of living in Singapore, the Monetary of Authority of Singapore allows the Singapore dollar to depreciate against major exports destinations like the US, making our exports more price attractive. Assuming Marshall-Lerner condition is satisfied, our net exports will improve.
- Nonetheless**, in order not to compromise price stability in Singapore, Singapore dollar continues to strength against others like the Malaysian Ringgit.
- Overall, MAS may choose to reduce the slope of the Singapore dollar nominal effective exchange rate (S\$NEER) policy band, with no change to its width and the level at which it is centred. Such adjustment to the policy stance, which keeps the S\$NEER band on a modest and gradual appreciation path, is **assessed to be appropriate in view of the more benign inflation outlook**.

*Note: Appreciation though makes imports cheaper in terms of raw materials and thus lower cost of production, will not make exports more price competitive –  $P_x$  will still rise due to appreciation.*

#### **Supply-side policies - Improving Quality of Exports**

- Other than lowering the cost of production, supply side policies are used to enhance Singapore's global competitiveness by improving the **quality of exports**.
- Policies aimed at improving quality of exports involved encouraging technological advancements through research and development (R&D) as well as improving productivity.
- **However**, in all R&D, there is **no guarantee of success** and this requires a **long gestation period**.
- As Singapore progresses in towards a knowledge economy, her global competitiveness does not only lie on the exports of goods but the **exports of services as well**. For example, local firms and professionals were engaged in many projects in China. The Sino-Singapore Tianjin Eco-city is the result of a collaborative agreement between the governments of China and Singapore to jointly develop a socially harmonious, environmentally friendly and resource-conserving city in China.

#### **Trade Policies to gain access to global market**

- Singapore has undertaken trade efforts in this region such as APEC, ASEM and ASEAN, as well as under bilateral Free Trade Agreements (FTAs) so as to accelerate the momentum of trade liberalisation and strengthen the multilateral trading system. Such FTAs **provide preferential trading arrangement** which give special preference or trade concessions to member states.
- As legally binding arrangements between willing member countries, FTAs enhances trade and investment flows by providing **lower tariffs for exports of goods**, hassle-free custom procedures, improved market access for various commercial and professional services, **easier entry for businessmen into other countries**, better terms for investment in foreign countries etc. FTAs will set a framework for businesses in a small country like Singapore to **grow and expand globally**, which in turn will generate more employment opportunities for Singaporeans.
- Since the signing of her first FTA under the ASEAN Free Trade Area (AFTA) in 1993, Singapore's network of FTAs has expanded to cover 18 regional and bilateral FTAs with 24 trading partners. Not only do such FTAs contribute to **more sources of imports for her raw materials, they also open up export markets** which further sharpen Singapore's global competitiveness.
- **Evaluation:** Although these FTAs provide opportunities for trade which widen Singapore export markets, they also make **Singapore susceptible to uncertainties** faced by member countries. In other words, FTAs expose Singapore to **many risks via the contagion effect** – when demand and price of her exports can fall suddenly and supplies of important raw material can be cut when major trading partners face recession or supply shock respectively.

#### **Conclusion:**

As a small and open economy, Singapore focuses on policies that enhance her export competitiveness using supply side as well as exchange rate and trade policies. In the implementation of any economic policies to enhance Singapore's **global competitiveness**, due considerations are given to the strengths and limitations of the economy so stakeholders can work together to shape economic agendas that **address challenges and enhance opportunities**.



## 2016 A level Case Study Suggested Answers to Question 1

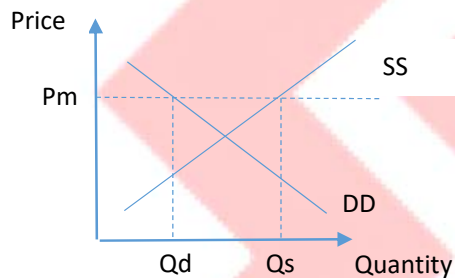
- (a) Estimate and compare the value of India's total imports of agricultural products in 2013 and 2005. [2]

Value of India's total imports of agricultural products can be estimated by taking the difference between total exports and net exports of agricultural products. The value of India's total imports of agriculture products was about **US\$20bn in 2013**. This is about **4 times higher** than that of **2005's US\$5bn** (approximately).

1m – Estimation of value in 2013 and 2005

1m – Comparison (2013 is higher)

- (b) Using a supply and demand diagram, explain how the Indian government's purchase of grains at artificially high minimum support prices has contributed to the changes shown in Figure 2. [4]



With the implementation of minimum price at  $P_m$ , the Indian government buys up the surplus of  $Q_s - Q_d$  which explains the increase in wheat and rice stocks observed in Fig 2. In Extract 2, it is said that some of these stocks are exported and hence we also observe a rising trend of wheat and rice exports in Fig 2.

1m – Diagram

1m – Identification of surplus ( $Q_s - Q_d$ )

1m – Link to increase in wheat and rice stocks (Fig 2)

1m – Link to increase in wheat and rice exports (Fig 2)

- (c) (i) Suggest two ways in which changes in the prices of exports and imports might lead to the change in India's terms of trade in 2013 compared to 2005. [2]

Given that index of TOT is  $\text{index of } P_x / \text{index of } P_m \times 100$  and the **TOT index for India increased**, it would mean that the **price index of exports must be rising faster than price index of imports** [1m] or **price index of exports is rising but price index of imports is falling** [1m].

- (ii) Explain how a rise in the terms of trade can be consistent with a strong rise in the value of India's net exports of agricultural products. [4]

Demand for agricultural products is price inelastic. As price increases, the quantity demanded falls less than proportionately and hence the total revenue will increase. [2m]

This explains why with the rise in TOT (perhaps due to price index of exports rising faster than price index of imports), X revenue increases more than M expenditure, hence, India's net exports rises as well. [2m]

**(d) Discuss how far the concept of comparative advantage explains whether India should specialize in agricultural products or other goods. [8]**

India should specialize in agricultural products	India should not specialize in agricultural products									
<p><b>Thesis: CA concept application</b></p> <ul style="list-style-type: none"><li>State Law of CA: trade can benefit all countries if they specialize in the goods in which they have a CA in production, ie. she can produce the good at a lower opportunity cost than another country.</li><li>Evidence - India has CA in agricultural products:<ul style="list-style-type: none"><li>Extract 1: 'world's sixth-largest net exporter' in 2013 and export growth rate is 'the highest of any country' of more than 21% annually.</li><li>Fig 1: Net exports for India generally show an increasing trend except for 2009.</li></ul></li><li>Illustrate with a table:<table><tr><th>Countries</th><th>Agricultural products</th><th>Cars</th></tr><tr><td>USA</td><td>20</td><td>30</td></tr><tr><td>India</td><td>15</td><td>10</td></tr></table><ul style="list-style-type: none"><li>USA has to give up 3/2 unit of cars for 1 unit of agricultural products or 2/3 unit of agricultural products for 1 car. Hence USA has a lower opportunity cost of producing cars</li><li>India has to give up 2/3 unit of cars for 1 unit of agricultural products or 3/2 unit of agricultural products for 1 unit of car. She has a lower opportunity cost of producing agriculture produce and should specialize in it.</li></ul></li></ul>	Countries	Agricultural products	Cars	USA	20	30	India	15	10	<p><b>Anti-Thesis 1: Use of CA concept to explain why India should not specialise</b></p> <ul style="list-style-type: none"><li>Artificially low export price agricultural products due to Indian government intervention resulted in 79% of India's exports moving to developing countries (Extract 2).</li><li>Without India's unfair trade practices (the subsidies and MSP schemes) which promote trade distortion, these countries (LDCs) may be able to develop their CA in agricultural products. This means that world resources could have been better allocated if India did not engage in such practices.</li></ul> <p><b>Anti-Thesis 2: Government Support to attain equity might help explain</b> <i>(India's growth in becoming the world's major player in the agricultural products may not be due to India having CA)</i></p> <ol style="list-style-type: none"><li>Farm subsidies artificially reduce the cost of agricultural products, lowering the price of export crops – thus 'boosting production' and exports of these crops.</li><li>Minimum support prices (MSPs) artificially raises the price of these basic crops, thus encouraging farmers to produce more. The government buys up the surplus (as analysed in part b) and sells the wheat from its stocks at prices below acquisition and transport costs. This increases the export of wheat (as shown in Fig 2 - rising trend in exports of wheat and rice from 2011).</li></ol> <p>Hence these policies are effective in boosting India's exports of agricultural products</p> <p><i>Evaluative comment:</i> However, both government support schemes are dependent on funding by the government. There might be high opportunity cost incurred when the government needs to forego spending on other areas to maintain these schemes. It may not be sustainable in the longer term.</p>
Countries	Agricultural products	Cars								
USA	20	30								
India	15	10								
<p><b>Judgment + Justification</b></p> <p>Hence, India should specialize in agricultural products only if she truly has CA in it, especially as the agricultural support is costing the government a lot of money and due to corruption and inadequate storage and transport, many of the agricultural products were lost/ wasted. Even then, CA can change and given that majority of India's export goes to developing countries, India should seek to develop new areas of CA to continue benefiting from trade.</p>										



**(e) Discuss whether the Indian government's policy towards agriculture can be justified. [10]**

**1. Farm subsidies**

How it works? – reduces COP hence increases supply

Benefits	Costs
<ul style="list-style-type: none"><li>Price of subsidized agricultural products is reduced and consumers benefit with higher consumer surplus.</li></ul>	<ul style="list-style-type: none"><li>Distortion of market – Extract 3 states that resources are devoted to subsidized crops at the expense of other crops which are equally in demand, resulting in higher prices for fruits and vegetables (<b>inefficiency issues</b>)</li></ul>

**2. MSP**

How it works? – minimum price, government buys up surplus

Benefits	Costs
<ul style="list-style-type: none"><li>Farmers earned higher income</li><li>800 million poor people get to buy rice and wheat at low prices (<b>equity issues</b>)</li></ul>	<ul style="list-style-type: none"><li>Higher price for some consumers resulting in loss of CS</li><li>Government incurs high expenses in purchasing the surplus (incurred <b>opportunity costs</b>) and storage costs</li><li>Although some of the stocks were used to help the poor, there is wastage due to loss of crops as a result of poor storage conditions and corruption (<b>inefficiency issues</b>)</li></ul>

**Other benefits:**

The farm subsidies and MSPs (where stocks are exported at prices below acquisition and transport costs) increase the export price competitiveness of the agricultural products. Assuming ceteris paribus, export revenue increases and **balance of trade and balance of payment improve**. The increase in net export revenue (Figure 1) will also help to increase AD and NI via the multiplier effect, **improving actual economic growth and reducing unemployment** in the process.

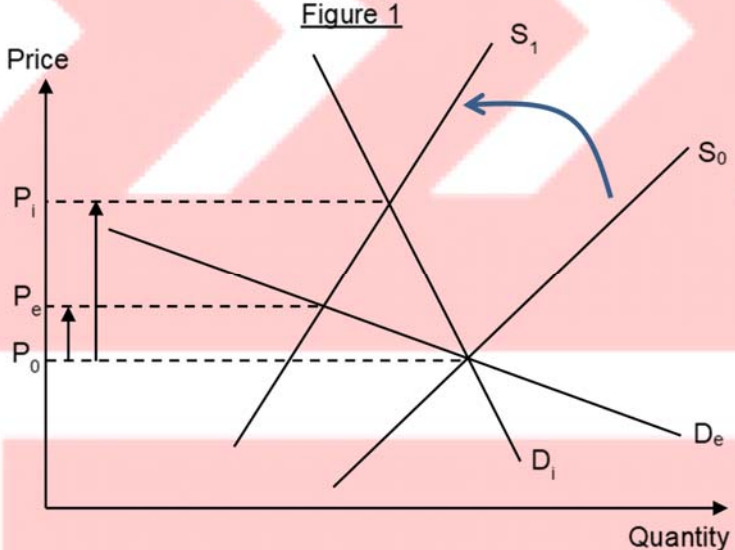
**Other costs:**

**Retaliation** from other countries (Extract 3 last sentence) would erode any advantage that India has enjoyed from using these policies.

**Judgment**

If the main reason for India to engage in these policies is to protect the agricultural industry, then the policies are not justified given that the costs of these policies outweigh the benefits, especially since it leads to misallocation of resources (domestically due to distortion of other markets and loss of crops, and internationally due to unfair trade practice which results in India seemingly having CA in certain agricultural products). However, if India could instead provide subsidies to improve efficiency of farming e.g. develop more effective farming methods, then subsidies can be justified.

**2016 A Level Paper 1 - Question 2: Inflation policies in Brazil and Japan)**

(a)	<b>State what happened to consumer prices in Brazil and Japan between 2011 and 2012.</b>	<b>[2]</b>									
	<p align="center"><b>Table 2: Annual percentage rate of increase in the consumer price index</b></p> <table border="1"> <thead> <tr> <th>Year</th><th>Brazil</th><th>Japan</th></tr> </thead> <tbody> <tr> <td>2011</td><td>6.63</td><td>– 0.28</td></tr> <tr> <td>2012</td><td>5.40</td><td>– 0.03</td></tr> </tbody> </table> <p>Consumer prices in Brazil had increased, while consumer prices in Japan had fallen.</p>	Year	Brazil	Japan	2011	6.63	– 0.28	2012	5.40	– 0.03	
Year	Brazil	Japan									
2011	6.63	– 0.28									
2012	5.40	– 0.03									
(b)	<b>Japan increased its sales tax in April 2014. Using a diagram, explain what determines the size of the increase in the price of a good following such a tax increase.</b>	<b>[4]</b>									
	<p>An increase in sales tax, an ad-valorem tax, will skew the SS curve of a good leftwards. This would lead to a fall in quantity demanded of a good, as well as an increase in its price. The extent of the price increase will be determined by the Price Elasticity of Demand (PED) of the good.</p> <p align="center"><b>Figure 1</b></p>  <p>As shown in the diagram, a good with a lower PED would lead to a larger increase in price than that of a good with a higher PED.</p>										
(c)	<b>(i) Use aggregate demand and supply analysis to explain the causes of inflation in Brazil in 2014.</b>	<b>[4]</b>									
	<p>From Extract 4,</p> <p>“Millions move out of poverty to create a new consumer class” and “cash welfare benefits” increased incomes and boosted purchasing power. This causes an increase in consumption (C). It also states that “Brazil’s government spends too much”, which suggests that (G) is rising. The increase in C and G therefore increased AD. Coupled with a supply bottleneck due to “buying power not matched by increased production of goods and services”, this led to demand pull inflation.</p>										

	<p>Measures to maintain high employment had also increased labour costs. The increase in cost of production led to a fall in Short Run AS (SRAS), leading to wage push inflation.</p> <p>Together, the increase in AD and fall in SRAS had caused inflation in Brazil in 2014.</p>	
(c)	<b>(ii) Explain how the strengthening of the US and the EU economies might affect prices in Brazil.</b>	<b>(2)</b>
	<p>The strengthening of the US and EU economies, which implies an increase in the income of their people, would lead to an increase in demand for Brazilian exports (X), assuming they are normal goods. Ceteris paribus, this increases AD in Brazil which will increase the general price level or prices in Brazil.</p>	
(d)	<b>Assess the likely effectiveness of a government policy of changing interest rates in solving the problems of the Japanese economy.</b>	<b>[8]</b>
	<p><b><u>Identify the problems</u></b></p> <p>The problems faced by the Japanese economy were <b>falling household spending</b> due to lower purchasing power from a higher sales tax and bad weather, <b>disappointing export</b> due to sluggish demand overseas, and <b>rising unemployment</b>. Overall, there is <b>weak domestic and overseas demand</b>.</p> <p><b><u>Explain how expansionary MP can address these problems</u></b></p> <p>To counter these problems, the Japanese government could employ expansionary monetary policy to stimulate the economy. A <b>reduction in interest rate</b> would <b>reduce the cost of borrowing</b> for both consumers and producers, hence <b>increasing</b> both consumption (C) and investment (I). The lower interest rate could also lead to a <b>capital outflow</b> which will <b>depreciate the Japanese yen</b>, leading to a fall in export price in foreign currency. Quantity demanded will increase more than proportionately, increasing export revenue measured in foreign currencies. Given that prices of the country's exports remain unchanged in domestic currency (assuming ceteris paribus), demand for exports in domestic currency increases, increasing export revenue (X) in domestic currency.</p> <p>Price of imports increases in terms of domestic currency as local importers need to use more domestic currency to buy the same amount of foreign currencies and assuming <math>PED_m &gt; 1</math>, quantity demanded for imports will fall more than proportionately and import expenditure (M) measured in domestic currency falls. This leads to an <b>improvement in net exports (X-M)</b>. Overall, this would <b>increase AD</b> and an unexpected <b>fall in inventories</b>. Firms will therefore <b>hire more workers to increase output</b>. The increase in AD would lead to a <b>multiplied increase in Japan's national income</b>. <i>(Draw AD/AS diagram to illustrate this)</i></p> <p>This policy would be effective because it addresses the falling trend in consumer spending, weak factory output, sluggish exports, and rising unemployment.</p> <p><b><u>Evaluative factors that may reduce effectiveness of MP</u></b></p> <p>However, there are several <b>constraints</b> to the policy.</p> <p><b><u>1) Poor confidence → interest inelastic C &amp; I</u></b></p> <p>Firstly, it does not directly address the <i>causes</i> of Japan's problems. The depressing effects of the sales tax increase on consumption will continue to linger, and the success of the policy depends on whether the stimulus is sufficient to boost consumer confidence and jolt them to increase their spending. If firms and consumers remain <b>pessimistic</b> about the economic <b>outlook</b>, the <b>reduction in interest rate</b> may also be <b>insufficient to significantly boost investment (I) and consumption (C)</b>.</p>	

	<p><u>2) Unable to address X</u> The measure also <b>cannot address</b> the <b>sluggish</b> demand for <b>exports</b> from overseas, which is subject to changes in the global economy.</p> <p><u>3) Unable to address other problem – wage push inflation</u> Although <b>wage push inflation</b> due to the <b>tightening job market</b> was not highlighted as a problem, a fall in SRAS due to <b>higher production cost</b> may lead to a fall in industrial output and national income. A reduction in interest rate helps to stimulate AD but will <b>not address</b> this.</p> <p><b>Stand</b> All in all, the policy is likely to help to stimulate the Japanese economy, but its <b>effectiveness</b> would <b>depend on how long</b> the “<b>tax-increase pain is prolonged</b>”, and <b>whether exports</b> will <b>increase</b>. To better address its problems, the Japanese government may wish to <b>consider ways to alleviate</b> the <b>pain of the tax-increase</b>, such as <b>temporary tax rebates</b>. It <b>can also consider long term supply side measures to boost</b> the <b>quality and attractiveness of its exports</b>, or <b>negotiate trade agreements to secure greater demand</b> for its <b>exports</b>.</p>	
(e)	<p><b>Discuss whether the Brazilian or the Japanese government has the more damaging and persistent inflationary problem.</b></p>	[10]
	<p>Inflation is damaging to an economy since it hurts the goals of sustained growth, low unemployment, and a healthy balance of payments. A rise in a country's inflation relative to other countries results in its exports becoming less price competitive, and assuming PED for exports is <math>&gt;1</math>, this will lead to an overall fall in export revenue (X) as quantity demanded falls more than proportionately. High inflation also deters investment (I) since price instability makes it harder for investors to predict future streams of revenue and costs, thereby adding to the uncertainties of investing in the country. Overall, AD will fall, leading to a multiplied decrease in NI and hence a fall in actual growth. Correspondingly, cyclical unemployment will fall. The country's BOP will also worsen through both the current and capital accounts.</p> <p>In examining whether the Brazilian or Japanese government has the more damaging and persistent inflationary problem, we need to first consider which has a stronger impact that has a wider scope (<b>more damaging</b>), and whose problem is more long lasting and structural, and <i>harder to correct with government intervention (more persistent)</i>.</p> <p>Given that Brazil's inflation rates in 2013 and first half of 2014 were significantly higher than Japan's, <b>the impacts of inflation will be more strongly felt in Brazil</b>. This is evident from analysts' projection that “Brazil's economy will struggle to grow even 1% (para 4, Extract 4)”, and Brazil's “manufacturing sector is in a slump and business confidence in down”.</p> <p>There is also a <b>difference in the nature of Brazil and Japan's inflationary problems</b>.</p> <p><b>Brazil's</b> inflationary <b>problem</b> was primarily <b>due to increasing demand</b> by consumers as “millions move out of poverty”, and overspending by the government through its cash welfare benefits and measures to maintain high employment. Together with a <b>supply-bottleneck</b> as hinted by the “stagnant supply” (Extract 4 Para 2), this led to <b>demand-pull inflation</b> through an increase in AD via C and G.</p> <p>(Draw AD-AS diagram to show demand-pull inflation).</p> <p>Nevertheless, the problem is likely to be persistent as it is unlikely to come under control in the future. This is because <b>traditional demand-side</b> monetary and fiscal <b>measures</b> would lead to <b>conflicts in other economic goals</b>. Although a contractionary interest-rate monetary policy could help to <b>reduce demand-pull inflation</b> through the increase of cost of borrowing and hence reducing AD through a fall in C and I, it would <b>reduce economic growth</b> and threaten to bring about a recession.</p>	

	<p>Given the limitations of demand-side policies, <b>supply side reforms to increase productive capacity</b> may be <b>needed</b>. <b>However</b>, they are likely to <b>take time</b> and would not address the problems in the immediate future. <b>Brazil's problem</b> is therefore <b>likely to persist</b>.</p> <p><b>Japan</b>, however, is facing a different problem with <b>inflation</b> that is <b>significantly lower</b> than that of Brazil's, and notably below the central bank's target (Extract 5 para 1 "...the inflation rate stood at 1.3%, still below the 2% target). The upturn in inflation rates in 2014 was <b>largely due to</b> the effects of <b>tax push inflation</b>. In fact, Japan had suffered from deflation from 2009-2012 (Table 2).</p> <p>Moreover, <b>both the Bank of Japan (BOJ) and analysts agree</b> that <b>growth</b> will <b>rebound</b> in Japan. Although the higher sales tax had "hurt purchasing power", caused companies to cut back on production, and led to an increase in unemployment rate (Extract 5), there are views that <b>consumer spending</b> would <b>recover</b> and hence <b>boost economic growth</b>. <b>Given that inflation rate remains below the 2% target, unlike Brazil</b>, there is also <b>little concern even if</b> the government has to resort to <b>expansionary fiscal or monetary policy to stimulate the economy</b>.</p> <p><b>In conclusion, Brazil</b> has the <b>more damaging and persistent</b> inflationary problem. On the other hand, <b>Japan's inflation</b> problem is <b>mild and unlikely to persist</b>, given that it is triggered by a <b>one-off consumption tax</b>.</p>	
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[Total: 30]



## TYS 2016 Q1

The price of a pair of jeans can be as little as S\$20 or as much as S\$500

- (a) Explain what might cause price elasticity of demand and cross elasticity of demand to be different for different products. [10]
- (b) Assess the likely effects of a rise in price of one brand of jeans on the revenue earned by both retailers of that brand of jeans and those who sell other related goods. [15]

### Examiner's Report

In general candidates showed understanding of both concepts and identified reasons for differences in their values. Most answers were unbalanced with considerably more time being devoted to price elasticity of demand (PED) than to cross elasticity of demand (CED).

- (a) The stronger responses used real world examples to give brief but clear explanations, justifying the reasons why PED and CED might take different values. The vast majority of responses, however, lacked in analytic depth, often featuring unexplained lists of a large number of factors that might influence PED and CED one way or the other.
- (b) Stronger responses offered accurate diagrams that clearly explained how a change in price would impact on total revenue. Weaker answers gave unexplained but largely correct statements. These weaker responses tended to lack diagrams and explanations were more superficial.

### Part (a)

#### Introduction:

The price elasticity of demand (PED) measures the degree of responsiveness of quantity demanded of a good to a change in its own price, *ceteris paribus*. There are various determinants which affect the value of PED across different products and these include the availability of substitutes, degree of necessity, proportion of income spent on the good and the time period of analysis (under time constraint, 2 factors suffice). Cross elasticity of demand (CED), on the other hand, measures the degree of responsiveness of demand for one good, say product A, to a change in the price of another good, product B, *ceteris paribus*. CED is essentially affected by how close product B can complement or substitute product A or both are not related.

#### Body

Price elasticity of demand conforms to the law of demand, which states that there is a negative relationship between price and quantity demanded. Hence the sign for PED is negative for most goods. Analysis of PED will be thus be more about the value and not about the sign.

Determinants of PED value.

#### Availability of Substitutes

The most important determinant is the **number** and **closeness** of substitutes. The greater the number of substitutes available for a good and the closer the substitutes, the more price elastic the demand for that good is. For instance, consumers have a wide range of choices for bread spreads such as butter, margarine and jam. Thus demand for a particular spread tends to be price elastic. This is because more consumers are likely to switch to these alternatives when the price of the good increases. Conversely, the demand for electricity is likely to be price inelastic as there is no close substitute for electricity currently.

Additionally, the number and closeness of substitute goods also depend on the **broadness of the definition** of the good. The broader the definition, the more price inelastic is the demand as it is harder to find substitutes. For example, glasses in general tend to have a price inelastic demand as compared to Oakley glasses (a specific brand of glasses), which probably has a price elastic demand given that there are many other close substitute brands to choose from.

**Degree of Necessity****(i) Basic Goods**

Price elasticity of demand is related to whether the goods are necessities. If the goods are necessities, the consumption of such goods is essential and usually cannot be delayed or postponed. These are goods that are required for daily consumption in order to sustain a basic quality of life. It is easier to forgo luxuries but not necessities. As such, the demand tends to be relatively price inelastic. E.g. Staple food items like rice and bread, utilities, clothing and public transport.

**(ii) Habit / Addiction**

Demand for a good tends to be price inelastic if the good is bought on a habitual basis. For instance, many habitual smokers and alcoholics would find it difficult to cut down on smoking or drinking even if prices of these goods were to rise. This is because they are addicted to the product and cannot easily change their consumption habits in response to price changes.

**Proportion of Income**

The higher the proportion of income spent on a good, the more price elastic is the demand. E.g. Demand for table salt is likely to be relatively price inelastic as consumers spend a tiny fraction of their income on it. Consumers would have little difficulty paying for it and hence unlikely to reduce much consumption of it, even if there is a relatively large percentage increase in the price of salt. On the other hand, if the price of a big-ticket item like housing increases, consumers will respond more than proportionately because many might simply be unable to afford housing with the increased prices.

**Time period [T-factor]**

In general, the demand for most goods and services would be relatively price inelastic in the short run and relatively price elastic in the long run. This is because when prices rise, consumers may take time to adjust their consumption patterns and find suitable alternatives. The longer the time period after a price change, the more price elastic will be the demand for the good as consumers had more time to make the necessary adjustments in response to the price change.

A good case in point is the crude oil market in the 70s. Between December 1973 and June 1974 the price of crude oil quadrupled, which led to large increases in the prices of petrol and central-heating oil (which are produced from crude oil). Over the next few months, there was only a very small reduction in the consumption of oil products. This is because demand was highly price inelastic as consumers needed to drive their cars and heat their houses to maintain their quality of life.

Over time, however, as the higher oil prices continued, new fuel-efficient cars were developed. Subsequently, many drivers switched to smaller cars which are more fuel-efficient. Similarly, households switched to gas or solid fuel central heating, and spent more money insulating their houses to save on fuel bills. Demand for oil thus became much less price-inelastic in the long run.

**Note: It is sufficient to elaborate on 2 determinants**

Cross elasticity of demand, unlike PED, can be both positive and negative. This depends on the relationship between the 2 goods analysed.

**Positive Cross Elasticity (CED>0): substitutes**

- If a pair of goods serve the same or similar purpose/function to satisfy similar wants, they are substitutes and have a positive CED in which a change in price in good X will cause the demand for good Y to change in the same direction.
- For example, Popeyes Chicken and Kentucky Fried Chicken are substitutes, a decrease in the price of one good will lead to a fall in the demand for the other and vice-versa.

**Negative Cross Elasticity (CED<0): complements**

- If a pair of goods can be used together to satisfy a want, then they are complements and have a negative CED in which a change in price in good X will cause the demand for good Y to change in the opposite direction.
- For example, mobile phones & mobile network subscription plans are used together. A fall in the price of mobile phones will lead to the rise in demand for mobile subscription plans.



Once the sign has been established, the magnitude/value of CED depends on the closeness or strength of the relationship.

The **stronger** or **closer** one good is a substitute or a complement of another, the **bigger the effect** of a change in price of the first good on the demand of the substitute or complement. Hence, the **greater the magnitude** of cross elasticity of demand.

In the above example of mobile phones and mobile network subscriptions, the complementary relationship is very strong as one can argue that they have very little value without each other. The CED value will like to be  $|CED| > 1$ . On the other hand for weak complements, the value is likely  $0 < |CED| < 1$ .

On the other hand, let's say people are more willing to substitute coffee for tea rather than hot chocolate for tea, then the cross elasticity of demand for coffee with respect to tea will be greater in magnitude than that for hot chocolate with respect to tea. When 2 goods are perfect substitutes for one another, their cross elasticities of demand tend towards **positive infinity**.

The less closely related one good is to another, the smaller the effect on demand of the first good as the result of a change in the price of a substitute or complement. Hence, the smaller the magnitude of cross elasticity of demand. The cross elasticities of demand tend towards zero.

When two goods are independent goods or are unrelated to each other, their cross elasticity of demand will be zero. For instance, butter and golf balls. Thus, when the price of butter falls, there is no effect on demand for golf balls.

#### **Common mistakes surfaced from timed-practice:**

##### **Concepts:**

###### **PED**

- *Ceteris paribus condition not mentioned.*
- *Explanation of PED sign is often left out.*
- *Some confused  $PED < 0$  with  $IPED < 1$  and  $PED > 0$  with  $IPED > 1$ .*
- *Some are still confused over DD and Qd.*

###### **CED**

- *Ceteris paribus condition not mentioned.*
- *Some confused signs and magnitude of CED;  $CED < 0$  with  $CED < 1$  and  $CED > 0$  with  $CED > 1$ .*
- *Many are unable to explain substitutes and complements clearly.*
- *Instead of giving a more general definition of CED, students usually focus on a specific direction change in price and oftentimes left out  $CED = 0$ .*
- *Some confused CED with PED.*

##### **Approach:**

*Quite a number of students only used the two types of jeans as examples for part (a) and restricted their exemplification and also left out on complements completely. Others had no examples at all and focused on giving a whole list of factors.*

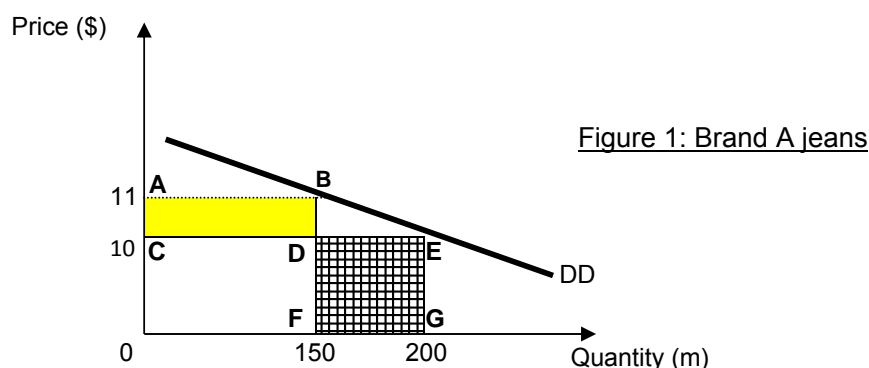
(b)

### Introduction

Different brands of jeans would have different price elasticities of demand (PED) which would affect the impact of a price increase on their total revenue. For related goods, the impact depends on their relationship as complements or substitutes, which affects the sign of their cross elasticity of demand (CED), positive sign for substitutes ( $CED > 0$ ) and a negative sign for complements ( $CED < 0$ ). For substitutes, the closeness of their similarities would determine the magnitude of CED and for complements, how integral they are to each other's function.

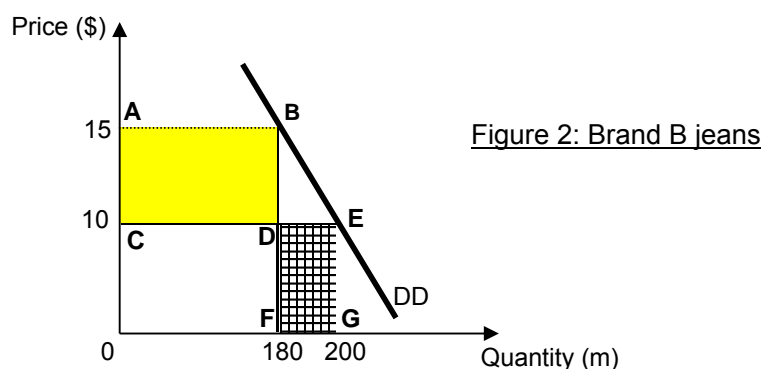
### Body

The \$20 type of jeans can be assumed to be Brand A mass market jeans which has many close substitutes, its demand is likely price elastic, its PED value would thus be more than one. This means an increase in price would lead to a more than proportionate decrease in quantity. This is because its consumers can simply switch to other brands which serve essentially the same purpose.



As seen in Figure 1, an increase in price from \$10 to \$11 (+10%) resulted in a more than proportionate fall in quantity demanded from 200 to 150 units (– 25%). The loss in total revenue due to the fall in quantity (area DEFG) is greater than the gain in total revenue due to the increase in price (area ABCD). Hence the total revenue has decreased for Brand A jeans following a price increase.

For the \$500 jeans, say Brand B, they are unique and designer jeans which has little close substitutes, its demand is likely price inelastic. This could be due to marketing or design of the jeans which make it one of a kind, with other jeans perceived to be unable to serve the same purpose. This means an increase in price would lead to a less than proportionate decrease in quantity.



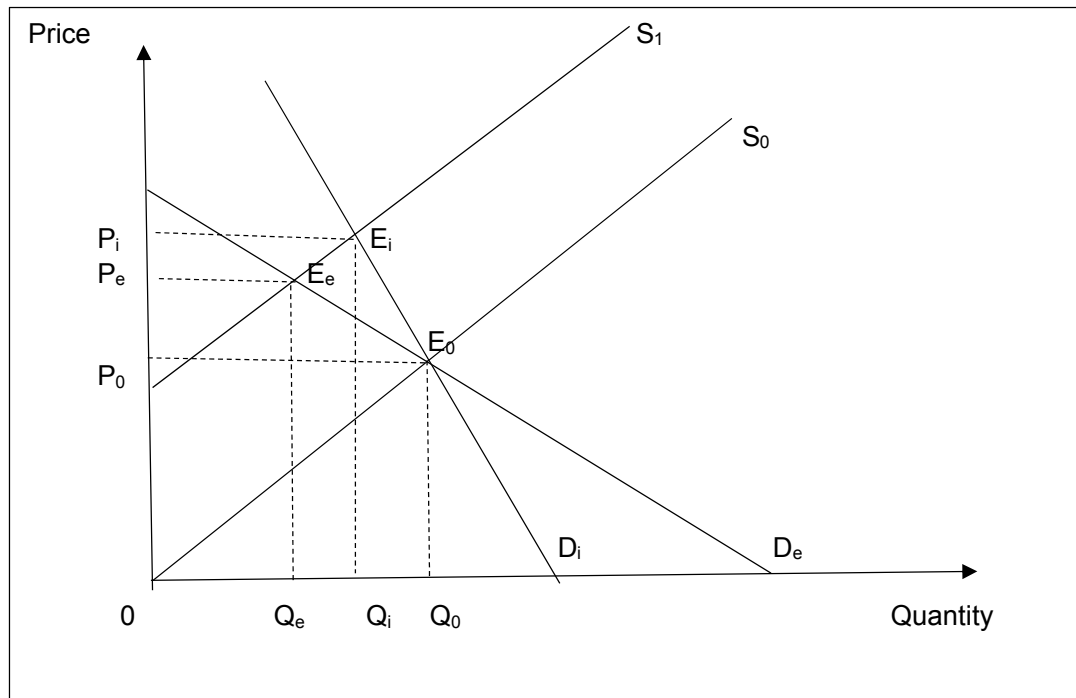
As seen in Figure 2, an increase in price from \$10 to \$15 (+50%) resulted in a less than proportionate fall in quantity demanded from 200 to 180 units (–10%). The loss in total revenue due to the fall in quantity (area DEFG) is smaller than the gain in total revenue due to the increase in price (area ABCD). Hence the total revenue has increased for Brand B jeans following a price increase.

**However**, one can argue that demand for \$20 jeans is price-inelastic as the cost constitutes a small proportion to income and it is a rather basic good as this piece of apparel is commonly worn by people so a rise in price will not make the Qd to fall much (fall less than proportionate – TR rises). As for the

\$500 jeans, one can argue the demand is price-elastic as it constitutes a big proportion to income and the steep price probably due to branding is a form of luxury good and can be done without so a rise in price will cause  $Q_d$  to fall more than proportionate,  $TR$  falls.

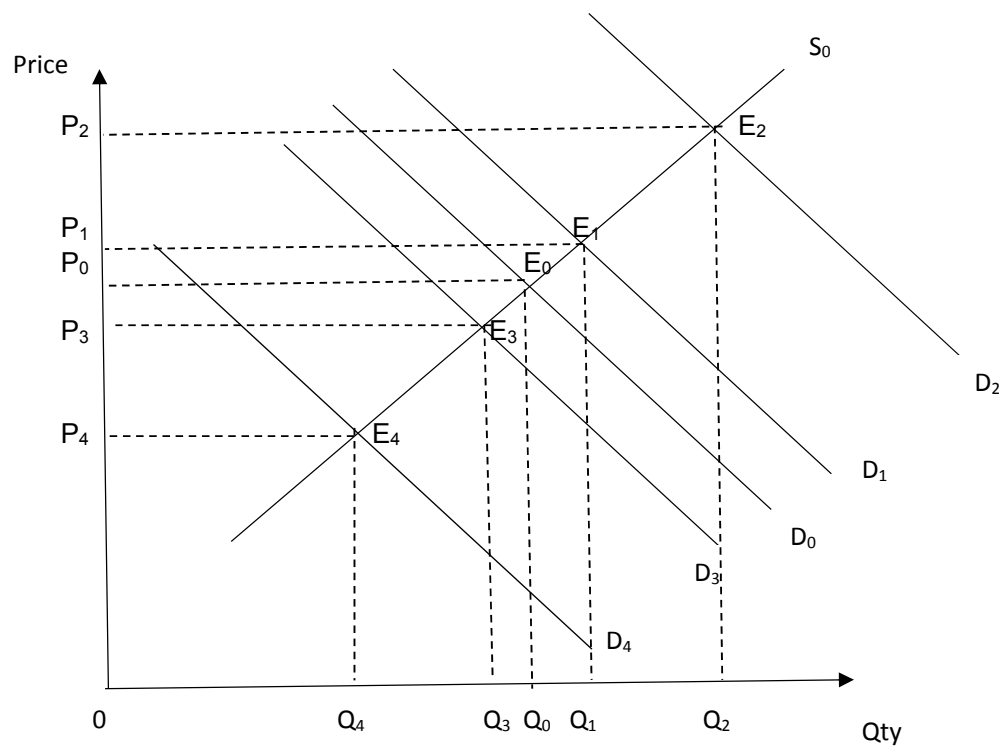
**Note:**

Alternatively, draw a DD-SS diagram with both a relative more price elastic demand and a price inelastic demand with a leftward shift in  $SS$  and analyse the impact on  $TR$ . See below.



As for the impact on related goods, the directional change in revenue depends on the nature of the relationship, i.e. substitutes or complements. The extent of the change in revenue depends on the strength of the relationship.

**Fig 3: DD change of related goods**



Goods like leather belts are likely to be close complementary goods and have a **negative CED**. As jeans and leather belts often go together for a better fit and stylish look, they are close complements. As such the CED magnitude should be greater than 1. This means that an increase in price would lead to a more than proportionate decrease in demand, as can be seen by the demand shift from  $D_0$  to  $D_4$  in Fig 3. Total revenue for retailer of leather belts will then see a drop from  $0P_0E_0Q_0$  to  $0P_4E_4Q_4$ . On the other hand for weaker complementary goods where the CED magnitude value is less than 1, the demand will decrease less than proportionately from  $D_0$  to  $D_3$  and total revenue will drop from  $0P_0E_0Q_0$  to  $0P_3E_3Q_3$ . **Thus the total revenue of strong complementary goods will decrease more than the weaker complements.**

For strong substitutes with positive CED, like retailer of Brand C jeans, the CED magnitude is likely to be  $CED > 1$ , thus an increase in price of Brand A would lead to a more than proportionate increase demand for Brand C, as can be seen from the shift of  $D_0$  to  $D_2$  in fig 3 and total revenue will increase from  $0P_0E_0Q_0$  to  $0P_2E_2Q_2$ . For weaker substitutes such as other pants and trousers, the CED value is likely to be  $0 < CED < 1$ , meaning the demand would increase less than proportionately from  $D_0$  to  $D_1$  and total revenue will increase from  $0P_0E_0Q_0$  to  $0P_1E_1Q_1$ . Thus the **total revenue for strong substitutes will increase more than the weaker substitutes with reference to a change in price of one brand of jeans.**

**In conclusion, the change in total revenue of the brand of jeans itself depends on its price elasticity of demand, which in turn depends on the various determinants of PED. For clothing items like jeans, the availability of substitutes is likely a key determinant. A rise in price will lead to a rise and fall in TR if demand is price inelastic and elastic respectively. For the change in total revenue of related goods, the relationship of the goods will be most critical. A rise in price of jeans will cause the TR for substitutes and complements to rise and fall respectively definitely. However, since we are dealing with apparel, the strength of the relationship depends a lot on the perception of the public with regards to the strength of the relationship. This implies that marketing efforts can influence the CED values quite significantly.**

#### **Common mistakes surfaced from timed-practice:**

##### **Concepts:**

###### **PED**

- Some only justified why jeans could be  $IPED > 1$  or  $< 1$  and not explore both possibilities.
- Some did not link to the context of \$20 and \$500 jeans.
- Some did not complete the analysis of change of P and Q to how they impact on TR.
- Some students explained when  $IPED < 1$ , a rise in price leading to a less than proportionate fall in Qd and thus TR falls less – should be TR rises.
- Inaccurate diagram(s) drawn

###### **CED**

- Application of  $CED > 0$  (complements) is generally not well explained as well-explained compared to substitutes and without diagram.

##### **Approach:**

Generally on the right track. The main problem is the depth of analysis. Generally there is a lack of good evaluation.

## Question 2

Singapore's spending on healthcare is about 4% of GDP. This is lower than many developed countries. However, Singapore's population is ageing and economic growth may not be as high as before. The government's share of national healthcare expenditure is expected to rise from 33% in 2012 to over 40% in the future.

Source: adapted from Singapore Public Sector Outcomes Review, 2014

- (a) Explain why a government intervenes in the provision of healthcare. [10]  
(b) Discuss how the opportunity cost of increased healthcare expenditure differs depending on whether it is financed by individuals or the Singapore government. [15]

### Examiners' Comment

While there were some strong responses to both parts of this question, part (a) was, in the main, much stronger than part (b). Although opportunity cost is a concept central to an understanding of economics, most responses did not apply it in a convincing way to the question set.

(a) A clear and well-explained understanding of at least two reasons for government intervention in healthcare, supported by well-drawn and well-explained diagrams, were given in the stronger answers. The differences between externalities and information failures were well-explained and understood. Weaker responses either gave only one reason, gave a response that was purely in terms of theory and hence not applied to healthcare, or gave responses lacking in both clarity and depth.

(b) Only a few candidates were able to give an in-depth and well-explained application of the concept of opportunity cost to healthcare funding. Most candidates gave descriptive responses that defined the concept and brief explanations of its application to healthcare. Weaker responses presented a rehearsed and largely irrelevant response on government policies to overcome market failure.

(a)

### Introduction

Identify government intervenes in the provision of healthcare due to the presence of different sources of market failure – merit good (presence of positive externalities and imperfect information) and equity reasons.

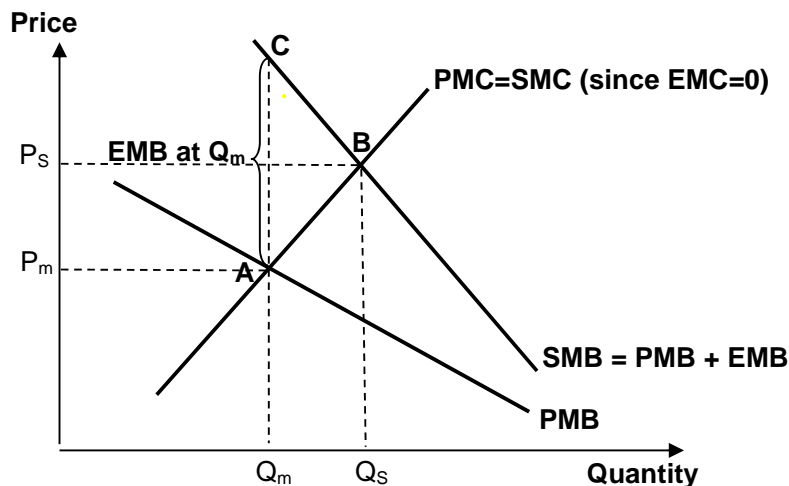
### Body: Explain the sources of market failure in the market for healthcare

Merit goods are private goods that have been deemed by the government (*important to mention government*) as socially desirable but underconsumed when left to the free market.

#### (i) Presence of positive externalities

- **State** that healthcare generates positive externalities and **define** the term.
- **Explain** that the presence of positive externality leads to a divergence between private and social benefits which has third party benefit such as a healthier workforce contributes to economic productivity (**define and exemplify PMB, PMC, EMB and SMB=PMB+EMB** – *oftentimes left out in the answers and the idea of 3<sup>d</sup> parties is usually not explained clearly*).
- Diagrammatic analysis: *Illustrate and explain how  $Q_m$  and  $Q_s$  come about and result in welfare loss of ABC.*

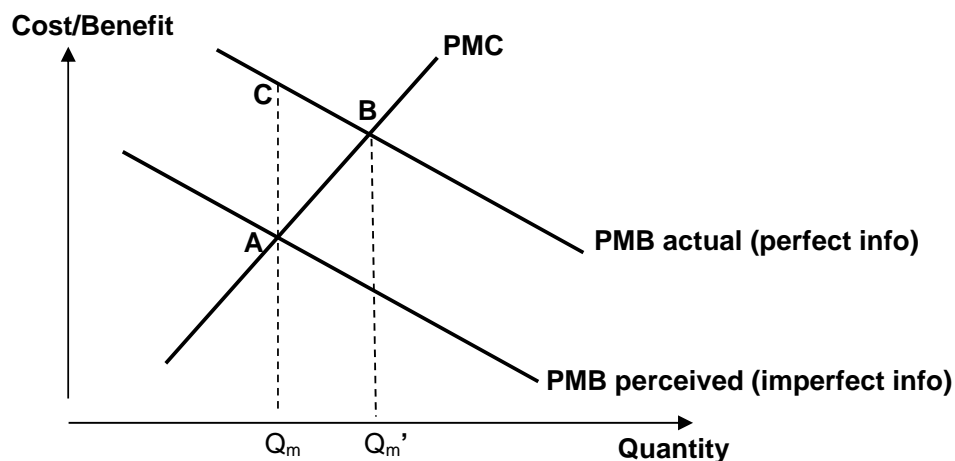
Figure 1: External benefit from healthcare consumption



## (ii) Imperfect Information

- Consumer demand for healthcare (e.g. regular health screenings) is **lower** at PMB perceived as they **underestimate the actual benefit** of such services.
- Diagrammatic analysis: *Illustrate and explain how  $Q_m$  and  $Q_m'$  come about and result in welfare loss of ABC.*
- *Avoid combining divergence of perceived and actual benefits with perceived and actual costs and also bring in asymmetric information that complex the analysis.*

Figure 2: Imperfect information on actual PMB of health screening



## (iii) Equity reasons

- If left to the free market, many individuals, households may not have access to healthcare if financed purely from their own income or wealth since the market responds to the “dollar votes” of consumers. Resources may therefore be allocated mainly to the production of healthcare services demanded by the rich.
- *This is not part of merit good explanation.*

*Note: There is possible market dominance in healthcare provision in different countries but it is not required in this part.*

## Conclusion

### Part (b)

*Main problems to this essay is lack of analysis and application to the context as highlighted in the stem.*

## Introduction

- Candidates must use the **concept of opportunity cost analysis** and **apply** to the various aspects of healthcare which include the (1) **preamble of ageing population**, (2) **weak economic growth** and (3) **increasing government expenditure**.
- State this essay will discuss how opportunity cost of increased healthcare expenditure differs when it is financed by individuals or the Singapore government.

*Note: Government policies in the provision of healthcare is largely irrelevant in this part, though a knowledge of Medisave, Medishield and Medifund would be advantageous in the application to the Singapore context.*

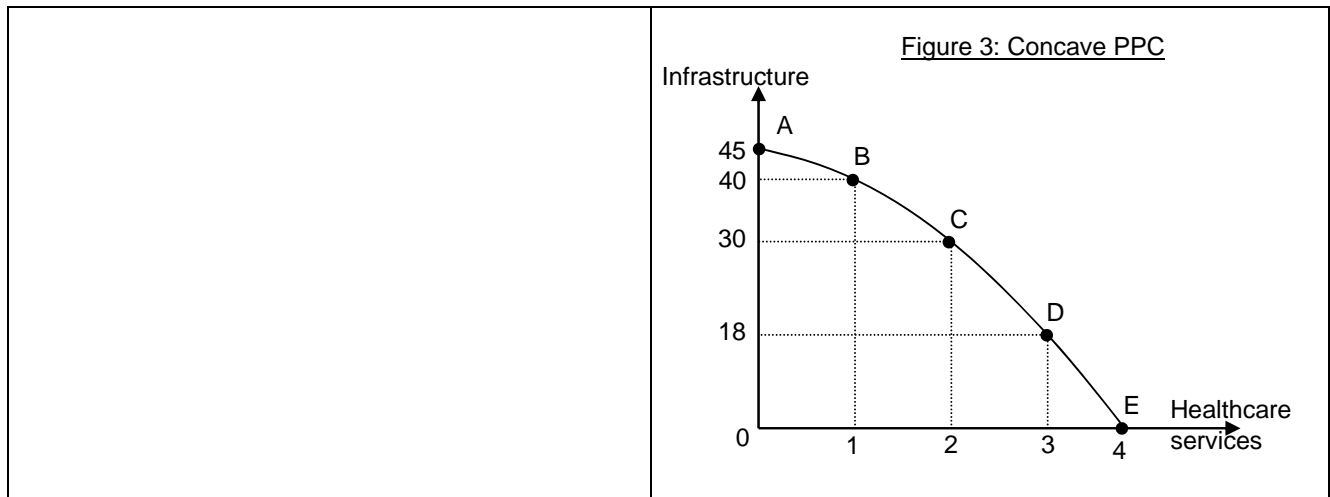
## Body

- Define opportunity cost as the cost of making a choice, in terms of the **next best alternative foregone**.
- Because resources are scarce, they have alternative uses. Therefore, individuals and governments must make choices among the alternative uses so as to maximise the use of resources to achieve the highest possible level of satisfaction.

Individual Financing	Government Financing
<ul style="list-style-type: none"><li>• Individuals have <b>limited income and time</b>, and are assumed who will want to <b>maximise own utility</b>.</li><li>• Higher healthcare expenditure means less money available for other goods and services (e.g. food, electronic goods and overseas holidays – exactly what is the next best alternative forgone will depend on individuals).</li><li>• If higher expenditure also means more time needed to go for medical consultation, it also can mean giving up of leisure time or earning some income.</li></ul>	<ul style="list-style-type: none"><li>• Government has a <b>limited budget</b> mainly from tax revenue and have lots of expenses, aiming to achieve both microeconomic (<b>efficiency and equity</b>) and macroeconomic objectives (<b>sustained growth, low unemployment and healthy balance of payment</b>).</li><li>• Higher healthcare expenditure means less budget available for other expenditures (e.g. public goods such as street lighting, covered shelters, public parks etc.)</li></ul>

<b>Long term individual implications:</b>	
For low-income families, higher healthcare expenditures means less for spending on other essential services such as education. Their children could drop out of school which may further opportunity cost in terms of future career and earning prospects.	<p>Higher government spending on healthcare would mean budget for important infrastructure projects which would attract investments and merit good financing (e.g. education) which would lead to the slower increase in the productive capacity and quality of factors of production for the future.</p> <p><i>However, as explained in part (a), spending on healthcare does generate positive externalities in terms of a healthier and productive workforce that also can enhance the productive capacity of the nation. But if the rise in expenses on healthcare is mainly spending on the elderly who are no longer in the workforce, then the conflicts between achieving efficiency in allocating resources and macro goals will be evident.</i></p>
<b>Application to ageing population:</b>	
<p>Families would have to shoulder greater expenditure on healthcare. An ageing population means elderly members will have higher spending on healthcare, a growing number younger family members may have to fork out more to pay for these bills (assuming elder members have insufficient insurance coverage and savings).</p> <p><i>However, the opportunity cost for younger family members would be to have less available for important matters such as marriage and having children. This would have a strong implication to fertility and population policies.</i></p>	<p>Looking after an increasing number of ageing population would mean the increased in the construction and provision of facilities such as community hospitals and departments for geriatric care.</p> <p>With rising ageing population and a falling birth rate, the opportunity cost would be less investment into areas for family planning such as R&amp;D for fertilisation and gynaecology care.</p>
<b>Application to weak economic growth:</b>	
<p>Weak economic growth may lead to lower wages or even unemployment. These events may not match up to the growing healthcare cost. The individual is likely to scrimp on preventive healthcare expenditures such as vitamin supplements, healthcare screening etc.</p> <p>This may lead to future health complications if the ailment are not detected early and subsequently treatment cost could be higher.</p>	<ul style="list-style-type: none"> <li>Weak economic growth may lead to lesser taxes collected or increase at a slower rate.</li> <li>Taxes collected would be insufficient to finance the higher spending on healthcare.</li> <li>Government could face a shrinking budget surplus or even deficit if fiscal management is not prudent.</li> <li>With difficulty in the budget, the opportunity cost could be for the government to spend on (what the government regarded as) non-essential items such as promotion of the Arts etc.</li> </ul>
<b>Application to higher government spending on healthcare:</b>	
<p>Moral hazard may occur if the individual feels that the government would foot most of the bill if the individual is ill. This may lead to undesirable habits such as poor diet and lack of exercise, since the treatment for the any chronic disease would be paid mainly by the government.</p> <p>The unintended consequence would be for even higher healthcare cost.</p> <p><b>Evaluation:</b>  <i>To prevent the problem of moral hazard, the Singapore government introduced Medisave, Medishield and Medifund to ensure there is co-payment for medical expenses between individuals and government and means-testing to ensure the needy are the ones who will have a greater subsidy and not the rich.</i></p>	<ul style="list-style-type: none"> <li>A higher expenditure on healthcare by the government means rising opportunity cost.</li> <li>The law of increasing opportunity cost states that as more of a particular good is produced, larger and larger quantities of the alternative good must be sacrificed, i.e. the opportunity cost of its production rises.</li> <li>Referring to Figure 3, it can be observed that the opportunity cost of the 1<sup>st</sup> unit of healthcare services is 5 units of infrastructure. To obtain the 2<sup>nd</sup> unit of healthcare services, 10 units of infrastructure have to be forgone. The 3<sup>rd</sup> unit of healthcare services requires sacrificing 12 units of infrastructure and so on. Thus, the opportunity cost increases as we want additional units of healthcare services.</li> </ul>





**General evaluations:**

- If individuals take ownership of one's health in Singapore, both the opportunity costs incurred by the individuals and government would not increase too drastically, less likely to create unnecessary strain to the family as well as the society.
- Government should educate the public that prevention is better than cure: the population's good habits in diet and exercise would reduce the need for high medical cost in the future when ageing population becomes a serious issue.
- The government also has co-payment systems and means-testing put in place to prevent abuse of subsidy.
- With such fiscal prudence, Singapore government's healthcare expenditure is lower than most developed countries at 4% of GDP.
- As long as the growth in government's healthcare expenditure can be matched and contained by expected weak economic growth (weak growth in tax revenue), the government should be able to keep it at a low percentage of the GDP well into the future.
- Therefore opportunity cost to other areas of development may not adversely compromised.

**Conclusion:**

- With an ageing population and weaker growth, Singapore's increased healthcare expenditure whether it is from the individual and government perspective is a real concern.
- The **opportunity cost would be increasing higher for both parties** but proper management from the self and the government can slow down the rate of increase in opportunity cost.

### 2016 A level Q3

In Australia, small and remote communities face high and stable prices for petrol. The petrol is supplied by one or two small petrol stations owned by small independent retailers. Prices are lower and more volatile in the large cities, where there are a large number of big petrol stations owned by a small number of big oil companies.

Source: Australian Institute of Petroleum

- (a) Explain why less market competition might lead to higher and more stable prices. [10]  
(b) Assess whether differences in the level of competition are likely to be the main reason for differences in the retail prices of petrol in rural and urban areas of Australia. [15]

#### Examiner's Report

Strong responses to this question used appropriate concepts to show clear understanding of why less competition leads to both high and stable prices. These responses were also able to apply their understanding of economic concepts to the context of the question. Weaker responses tended both to be restricted to an explanation of high prices in part (a) and to lack explanation of other reasons for price differences.

- (a) The stronger responses used well-drawn diagrams to explain clearly how high and stable prices might result from limited competition. Weaker responses tended to concentrate on high prices alone, or gave superficial and largely descriptive responses which stated the outcomes rather than explaining them.
- (b) The stronger responses gave clear and analytic explanations as to why prices are higher in rural areas than in the city. These were supported with well-explained diagrams. The potential impact on prices was explained using average cost/marginal cost diagrams. The stronger responses also made clear, evaluative judgements about whether competition or other factors were more important in causing the differences in pricing between rural and urban areas. The weaker responses lacked both depth of analytic explanations and breadth of reasons.

(a)

#### Introduction

- State extreme case of no competition is in the presence of a monopoly, less competition is in an oligopoly and stiff competition will be in a monopolistic competition and perfect competition (the other extreme).
- This essay seeks to explain why less market competition in an oligopoly might lead to **higher** and **more stable** prices than in a monopolistic competitive market.

#### Body

- Firms make pricing and output decision based on  $MC=MR$ .
- Any change in MC and MR due to changes in variable costs and demand respectively would change price.
- But the level of competition also affects firms' decision whether they will change price ultimately.

Price	Less competition: Oligopoly	More competition: Monopolistic Competition
	Assuming similar market size and the difference is due to less or more competition.	
Level	<b>Higher price</b> <ul style="list-style-type: none"><li>High barriers to entry lead to dominant firms with large market share.</li><li>Higher and more price inelastic demand since there are lesser number of substitutes.</li><li>Such high price is accompanied by earn supernormal profits in the long-run since there are high barriers to entry.</li></ul>	<b>Lower price</b> <ul style="list-style-type: none"><li>Low barriers to entry lead to hundreds and thousands of firms with small market share.</li><li>Much lower and price elastic demand for individual firms since there are lesser number of substitutes.</li><li>Even if there is high demand that gives rise to high price and supernormal profits in the short-run, due to low barriers to entry, there will be more firms entering into the market and the demand for existing firms will fall which leads to a lower price and finally earn only normal profits in the long-run.</li></ul>
	Illustrate a rev-cost diagram that shows high AR/MR and LRAC/LRMC, earning supernormal profits.	Illustrate a rev-cost diagram that shows low AR/MR and LRAC/LRMC, earning normal profits.
	<i>Note: Draw these 2 diagrams side by side to show the contrast.</i>	
Stability	<b>More stable</b> <p>Explain the mutual interdependence of oligopolistic firms:</p> <ul style="list-style-type: none"><li>Competitive: Price rigid according to kinked demand theory</li></ul>	<b>Less stable</b> <p>Firms make decision independently – change price when there's change in variable cost that changes MC and/or change in demand that changes in MR.</p>

Thus, when there is lesser competition, price will be higher and more stable than one that has more competition.

(b)

### Introduction

- In Australia, small and remote communities face high and stable prices for petrol that is supplied by one or two small petrol stations owned by **small independent** retailers which is supposedly a characteristic of a monopolistic competition. On the other hand, prices are lower and more volatile in the large cities, where there are a large number of **big** petrol stations owned by a **small number of big oil companies** which is oligopolistic.
- This seemingly contradicts to what is being explained in part (a).
- The essay aims to assess whether differences in the level of competition are likely to be the main reason for differences in the retail prices of petrol in rural and urban areas of Australia.

### Body

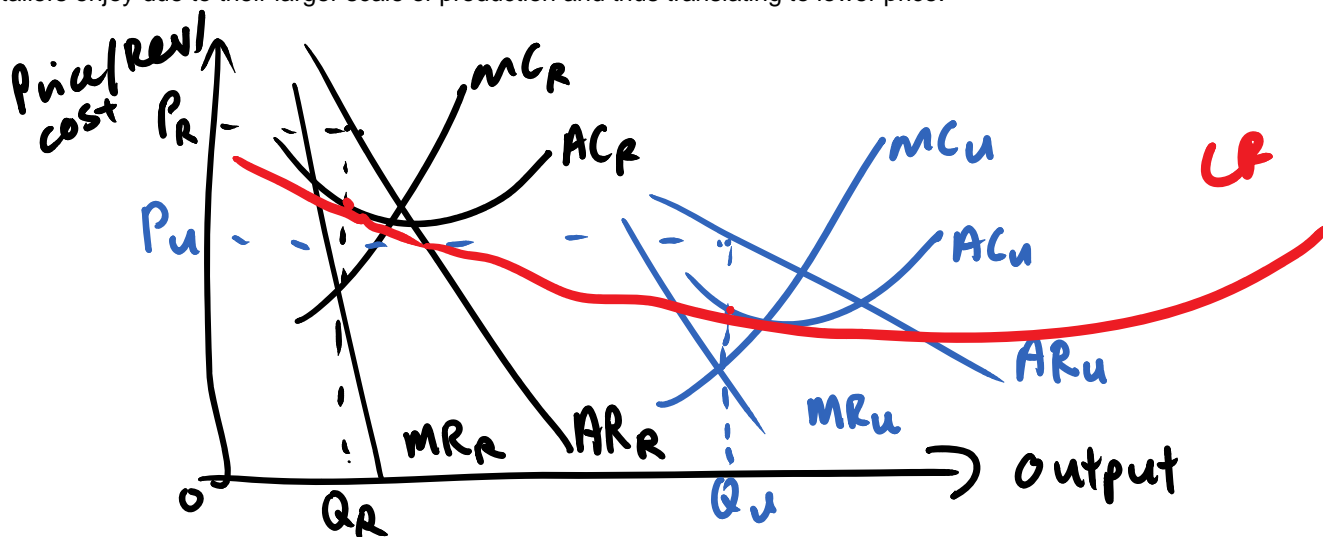
**Thesis: Lack of competition leads to higher and more stable price + more competition means lower and more volatile price**

- In the rural areas, the less competition arises from the lack of good public transport substitutes, which are likely to be present in city, such as trains, buses and taxis. Thus, most people still resort to driving to travel around. As there is no critical mass in rural areas, even though barriers to entry are low, big petrol companies may not deem it to be profitable to set up stations there. Thus, with only one or two small retailers and lack of good alternatives to driving, individual firm's demand may be rather high and is price inelastic, giving them the ability to charge high price. Even though they are small independent retailers, they actually behave like a localised monopoly or duopoly. Price is stable as it is probably rigid as explained in part (a) according to the kinked demand theory or the two retailers could easily collude to set high price since the number of firms is small.
- In the cities, there is more competition as the big oil companies have the resources to open many petrol stations, as well as the presence of good substitutes to driving, which give commuters many choices. Thus, demand for the petrol retailers may still be high but it is more price elastic, resulted in a lower price. Price is more volatile as the large retailers may be undercutting each other's price to get a larger market share (price war).

**Anti-thesis: Other than different levels of competitions, there are also other potential reasons why prices are higher in rural areas and lower in cities.**

### Differences in costs:

- **Transport costs** for shipping petrol to rural areas could be higher as compared to urban areas. Higher transport costs vary with sales/output so it is a form of variable cost which means MC will rise and based on profit maximising rule,  $MC = MR$ , there will be a rise in price.
- Use price-setter graph to illustrate a higher MC leads to higher price.
- **Internal economies of scale (EOS):** Small and remote communities means less fuel purchased each period, as compared to larger amount purchased by big retailers. Give an appropriate example of EOS which larger petrol retailers enjoy due to their larger scale of production and thus translating to lower price.



Explain the diagram how a price inelastic demand with higher costs in remote areas can result in higher price than urban areas.

**Evaluation:**

- *Higher transport cost may not be a critical factor that leads to higher price if it is not a large proportion to the total cost of production.*
- *Although smaller retailers have a smaller scale of production than the big petrol companies, the retailers could still try to lower unit costs. For example, transport the fuel in bulk in one big truck.*

**Government pricing regulation:**

Australian governments may regulate prices in urban areas, making sure there is no abuse of monopoly power by the large petrol companies.

**Evaluation:**

*Cities are usually densely populated. Making fuel more affordable will encourage more driving and worsen traffic congestion. Thus, it is unlikely the government deliberately make it cheaper for commuters in the urban areas. Also, the market of petrol is very competitive and thus needs no or little government intervention.*

**Conclusion (Final judgment to answer the question directly)**

- *The differences in the level of competition are likely the main reason for differences in the retail prices of petrol in rural and urban areas of Australia (clear stand).*
- *More competition not only makes the demand price elastic, it also incentivises the firms to outdo one another to lower price especially if they want to get higher market share. But, firms cannot be always engaging in price war. Thus, cost savings due to internal economies of scale by large firms will still be a deciding factor to a lower price on a more permanent basis.*

## 2016 A Level Essay Question 4

'The overall Singapore government budget for Fiscal Year 2013 is estimated to have recorded a surplus of S\$3.9 billion (1% of GDP).'

*Source: Recent Economic Developments in Singapore, 6 June 2014, Monetary Authority of Singapore*

Assess the likely impact of the budget surplus on the Singapore economy, both domestically and internationally. [25]

### Examiners' Report

There were some very strong responses which gave sound analytical explanations of the impact of a budget surplus on both the domestic and international side of the Singapore economy. There was also appropriate use of diagrams and other tools of analysis in these responses.

A popular response, but one which was not as well-directed, was to discuss how the Singapore economy might make use of the budget surplus. These responses tended to give a general explanation of Singapore's macroeconomic policy rather than focus on the immediate impact of the budget surplus.

A small number of poorly focused responses interpreted the question as referring to a balance of payments surplus rather than a budgetary surplus.

Stronger responses gave convincing evaluative assessments about whether the Singapore economy was more likely to have impacts domestically or internationally. Weaker evaluative comments referred to largely rehearsed statements about the size of the multiplier.

## INTRODUCTION

Budget surplus occurs when the government income (e.g. tax revenue) exceeds the government expenditure over a period of a year. This essay aims to assess the likely impact of the budget surplus on the Singapore economy, both domestically (in terms of economic growth, inflation and unemployment) and internationally (in terms of balance of payment and exchange rate).

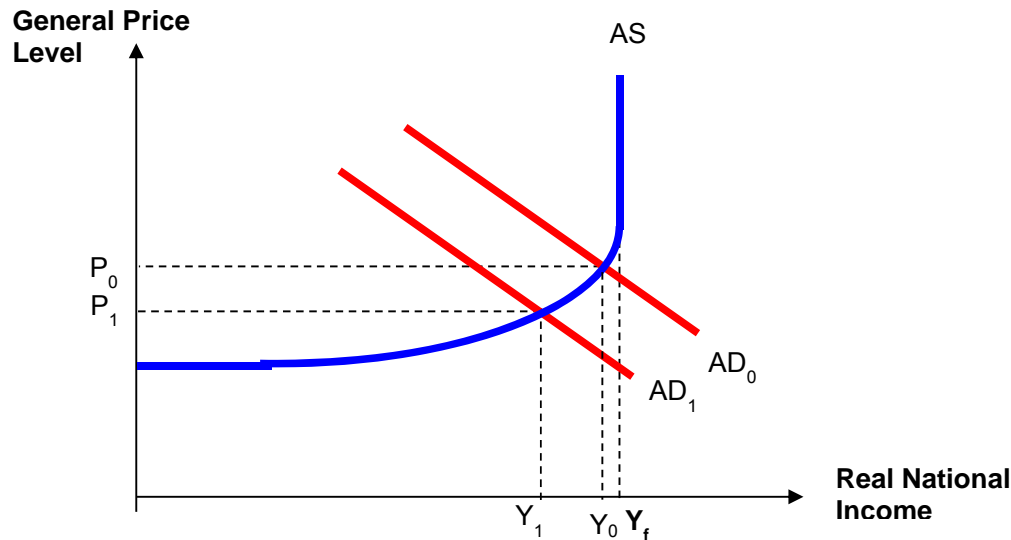
## BODY

### Domestic Impact (Short Run)

A budget surplus is **contractionary** in nature as the withdrawal (e.g. tax revenue) exceeds the injection (e.g. government expenditure). This would lead to a **fall in AD and national income** via the multiplier effect. For example when withdrawal is more than injection, perhaps due to households and firms paying more taxes (leading to less consumption and investment spending) and/or government spending less, it will mean that there is less production in the economy and firms will hire less factors of production, hence incomes of households who supplied factor services will fall, say by \$10m initially. These individuals will spend less on domestically produced goods and services, depending on their marginal propensity to consume (MPC), and less will be withdrawn as savings, taxes and import spending. This fall in spending further creates less income for individuals employed in the consumer goods and services industry who will further spend less on consumption. The key idea of the multiplier is that one individual's spending becomes another individual's income. Thus as long as each successive group of individuals receive less income and continues to spend less, the national income will continue to fall until the change in withdrawals is equal to the initial change in injections, i.e.  $\Delta W = \Delta J = -\$10m$ . The eventual fall in national income (-\$25m) is several times the initial fall in injection (-\$10m), assuming  $MPC=0.6$ . Hence, a budget surplus will cause the **actual economic growth to slow down**.

Given a fall in AD, as shown in Figure 1, a budget surplus will cause general price level to fall from  $P_0$  to  $P_1$ , helping to **ease inflation** in the economy. Since output has fallen from  $Y_0$  to  $Y_1$ , **demand deficient unemployment might increase**.

Figure 1: Impact of budget surplus



**Evaluation:** Most governments will adopt a budget surplus position when the economy is doing well and they want to prevent overheating. Hence, a budget surplus is highly unlikely to result in a recession in Singapore and should instead help to ease demand-pull inflation in Singapore. Moreover, for Singapore, demand-deficiency is not a major concern during good times. Rather, structural unemployment due to the mismatch of skills is more of a concern for Singapore.

### Domestic Impact (Long Run)

Whether there will be any impact in the long run will depend on what causes the budget surplus. If the reason is due to government cutting down on consumption/current expenditure, i.e. the expenditure incurred in the day-to-day routine operation e.g. wage costs of civil servants or stationery costs, there should not be any impact in the long run. However, if the reason is due to government cutting down on development or capital expenditure, i.e. spending on public investment e.g. new roads and infrastructure, this might limit the increase in potential capacity, causing a **slowdown in potential economic growth**.

Alternatively, if the reason for the budget surplus is due to higher taxes paid by consumers (perhaps due to higher income tax), it might create a disincentive to work, which might cause a slowdown in potential economic growth if the labour force or productivity does not increase as much. Higher corporate tax collected might also create disincentive for firms to invest and limit the increase in potential capacity, causing a **slowdown in potential economic growth**.

*If time permits, can draw a diagram to illustrate **LRAS increasing less**.*

**Evaluation:** The Singapore government focuses a lot on improving the potential economic growth of the economy, even during good times. Hence, it is unlikely that potential economic growth has been compromised at the expense of achieving a budget surplus by cutting back on development/ current expenditure. It is also less likely for income and corporate taxes to be raised, as this makes Singapore less attractive to foreign talent and potential FDI both of which Singapore needs to generate economic growth.

### International Impact

With the fall in national income (as analysed earlier) due to the budget surplus, purchasing power falls and this might reduce the level of import expenditure, thus **improving the balance of trade (BOT) and balance of payment (BOP)**, assuming ceteris paribus.

Furthermore, a budget surplus can reduce the general price level as AD falls. Assuming Singapore's inflation rate ends up lower than other countries, Singapore's exports will be relatively cheaper and her trading partners will switch to the relatively cheaper exports from Singapore, leading to a rise in the demand for the

country's exports and an increase in export revenue. At the same time, foreign goods are now relatively more expensive as compared to the domestic goods, leading to a fall in demand for imports and hence a fall in import expenditure. Thus a rising export revenues and falling import expenditure will cause the **BOT to improve** and assuming ceteris paribus, the **BOP will improve**.

With a rise in export revenue and fall in import expenditure, the demand for Singapore dollars (S\$) in the foreign exchange will rise and the supply of S\$ will fall respectively. This will lead to an appreciation in S\$, which is beneficial for the Singapore economy given that she is a small and open economy which is very dependent on imported goods and hence susceptible to imported inflation. A strong S\$ will help to curb cost-push inflation.

**Evaluation:** The fall in national income may not lead to a significant fall in import expenditure if the demand for imports is income inelastic. This is especially true if a large portion of imports consists of basic necessities such as clothes and food. Moreover, given that Singapore is highly dependent on imports due to limited resources, even if foreign goods are now relatively more expensive, the fall in demand for imports might not be significant since we might not be able to turn to domestic goods. Hence, the overall improvement in BOT and BOP might not be significant in Singapore.

### **EVALUATIVE CONCLUSION**

A budget surplus is likely to be beneficial for the Singapore economy domestically, since it helps to curb inflation. For a small and open economy which is dependent on exports to generate growth, it is especially crucial for Singapore to retain her export price competitiveness so that internationally, she will reap the beneficial effects on Singapore's BOP and exchange rates too.

While AD has fallen, demand-deficient unemployment is likely to be limited as the budget surplus could help address any overheating in the economy. Also, the possibility of a slowdown in potential growth is unlikely to be a concern in the long run since the Singapore government is committed to promote sustained, non-inflationary economic growth. Hence the budget surplus is unlikely to be an outcome of less spending on infrastructural developments. Even though real economic growth might slow down due to the contractionary nature of a budget surplus, given that the budget surplus is only 1% of GDP, it means the role of the Singapore government is rather small in influencing the economy, hence the overall impact is unlikely to be significant too.



## **N2016 GCE A-Level Question 5**

- (a) Explain why macroeconomics policy decision-making is made more difficult by possible conflicts between government objectives. [10]
- (b) Assess the relative effectiveness of the alternative macroeconomic policies that the Singapore government could adopt to maintain a low rate of unemployment. [15]

### **Examiners' Report**

In general, this was a well-answered question. Candidates were, in the main, well-prepared for a question on conflicts in macroeconomic decision making and on policies to maintain a low rate of unemployment, although some of these policies were more appropriate to maintaining economic growth than preventing an increase in unemployment.

- (a) The stronger responses used diagrams to explain, clearly, at least two potential conflicts between government objectives. The depth and quality of analytic explanation was one of the key differences between different responses. The most popular conflict explained was that between inflation and either unemployment or growth, followed by the conflict between the balance of payments and inflation or growth or unemployment. A range of other potential conflicts were also given. Weaker responses gave only one potential conflict or gave what was in essence the same conflict twice i.e. one explaining how policies to increase growth might worsen inflation and then how policies to reduce inflation might worsen growth.
- (b) A discriminating factor between responses to this part of the question was the ability to use tools of analysis to explain their responses. Most candidates were able to present a range of policies to maintain low rates of unemployment. The stronger responses made good and well-explained use of diagrams in support of policies to address both cyclical and structural unemployment, with recognition that the latter might be the most important for Singapore. Weaker responses were more descriptive or were less well-applied to Singapore. Many of the evaluative comments were presented as apparently rehearsed statements, rather than being explained or well-applied to this question – there were relatively few attempts at drawing an appropriate summative conclusion.

### **Part a)**

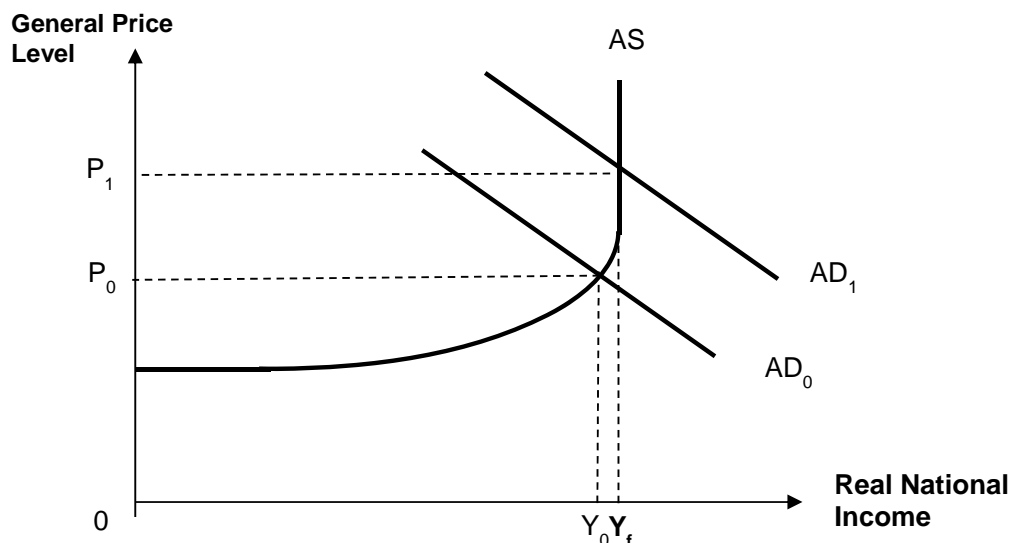
#### **Introduction:**

Conflicts in macroeconomics objectives may occur when the government tries to achieve the macroeconomic objectives of economic growth and price stability. Another conflict may arise between the objective of economic growth and external stability (i.e. maintaining a healthy BOP position). While the above conflicts are triggered by the use of demand-management, supply-side policies can trigger a conflict between sustained growth and structural unemployment as well.

The existence of these conflicts make policy decision-making harder, since they reduce the effectiveness of the original policy, affect the extent to which the policy can be implemented and have varying impacts on different stakeholders. For example, the use of an expansionary demand-management policy to boost growth or reduce unemployment may lead to a trade-off with the goal of price stability, due to the occurrence of demand-pull inflation.

**Body:**

Figure 1: Trade-off between actual growth and price stability



With reference to Figure 1, expansionary demand management policy will result in a rise in AD from  $AD_0$  to  $AD_1$  will raise the real output marginally from  $Y_0$  to  $Y_f$ . This represents an increase in actual output or actual growth, with little or no increase in productive capacity, i.e. without corresponding increase in AS. The economy is likely to be operating near or at full-capacity.

Rising AD leads to increased competition for resources such as labour. This drives up business costs – e.g. wages, rentals – and results in inflationary pressures. There is a sustained rise in the GPL of the Singapore economy from  $P_0$  to  $P_1$ .

The trade-off between growth and price stability causes challenges for macroeconomic policy-making in different ways:

1) **Trade-off between economic growth/ low unemployment & price stability when using expansionary fiscal policy**

Keeping in mind the potential trade-off, a government who aims to generate economic growth is likely to increase government expenditure or cut income taxes in a very measured way in order to avoid triggering demand-pull inflation. Consequently, the extent to which the original goal of boosting growth or reducing unemployment can be met will also be limited. At the same time, higher inflation rates can dampen the price-competitiveness of a country's exports. Assuming price-elastic demand for these exports, more expensive exports will result in a more than proportionate fall in quantity demanded and hence export revenue will fall. The fall in net exports lowers AD, which partly offset the original policy's intent to boost growth.

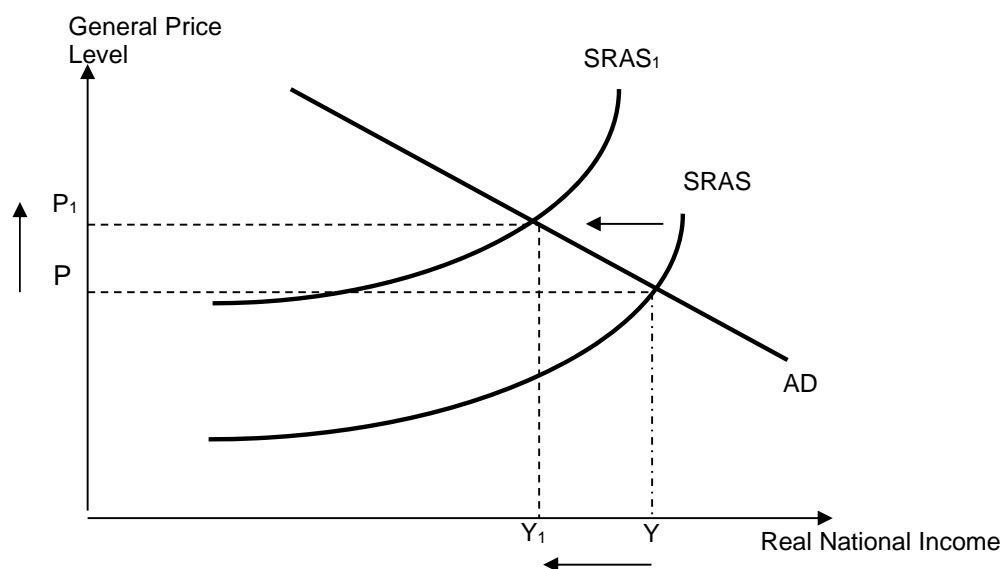
2) **Trade-off between growth & favourable BOP when using expansionary monetary policy**

The use of expansionary monetary policy to stimulate actual growth may also lead to a worsening of the BOP account. With a higher level of national income, purchasing power increases, this stimulates higher consumption of goods and services, including imported goods. The increase in import expenditure may lead to deterioration of the current account which may contribute towards a BOP deficit. However, if the economy is already experiencing a persistent BOP deficit, any further deterioration of the current account worsens the deficit, which could further deplete the country's foreign reserves. Hence, this complicates policy decision-making for policymakers seeking to attain the two macroeconomic objectives.

### 3) Trade-off between economic growth & price stability when using depreciation/devaluation of the exchange rate

Small and open economies may choose to adopt exchange-rate policies to stimulate growth. This leads to a trade-off between economic growth and cost-push inflation, which complicates policy decisions as well. For example, by depreciating the country's currency (eg. Singapore), the price of its exports in foreign currency will be relatively cheaper while the price of imports will be relatively higher in domestic currency. Assuming exports have a price elastic demand, quantity demanded for exports will increase more than proportionately, resulting in an increase in export revenue measured in foreign currencies. Given that prices of the country's exports remain unchanged in domestic currency, there will be an increase in demand for exports in local currencies and export revenue will rise. At the same time, assuming demand for imports is price elastic, the rise in import price will cause quantity demanded to fall more than proportionate causing import expenditure to fall in domestic currency. As a result net exports will increase. This results in an increase in AD which leads to an improvement in actual growth and a reduction in cyclical unemployment. However, the depreciation of the currency results in imported inflation. For Singapore, the trade-off is especially pertinent given the import dependent nature of the Singapore economy, hence making imported inflation more severe.

Figure 2: Cost-Push inflation



With reference to Figure 2, an increase in the costs of production due to imported inflation will result in an upward shift of the SRAS curve to SRAS<sub>1</sub>. This results in a higher price level at P<sub>1</sub> and a lower equilibrium output at Y<sub>1</sub>. The rate of inflation thus rises.

Due to the trade-off, Monetary Authority of Singapore (MAS) is unlikely to pursue aggressive depreciation of the exchange rate. For eg, in times of severe recessions in Singapore, MAS may adopt a zero appreciation. Effectively, this curtails the effectiveness of the exchange rate policy as an expansionary tool.

Hence, given the analysis of the above trade-offs, macroeconomics policy decision-making is made more difficult by possible conflicts between government objectives.

## Part b)

### Introduction:

Unemployment is defined as the situation where people are willing and able to work but cannot find jobs. The Unemployment can take the form of cyclical, structural, and frictional unemployment. Given the nature of Singapore economy, Singapore is more prone to cyclical and structural unemployment. To address these sources of unemployment, the Singapore government adopts a combination of demand-management and supply-side policies.

Singapore is vulnerable to cyclical unemployment arising from either a fall in external demand (exports) or slump in domestic demand (a fall in AD). Given the small size of the Singapore economy, domestic investment and consumption take up a relatively small proportion of AD as compared to net export earnings, (X-M). Hence, any fall in demand leads to a fall in AD and a multiplied decrease in the national income.

*[Draw AD-AS diagram to explain and illustrate how cyclical unemployment have risen due to a fall in AD.]*

### **Cyclical Unemployment: Expansionary MP centered on E/R:**

To address cyclical unemployment, MP in form of exchange rate policy is effective since it targets external demand. A depreciation of the currency results in cheaper price of exports in terms of foreign currency, while increasing the price of imports in local currency.

As analyzed in part (a), assuming exports have a price elastic demand, currency depreciation will lead to a more than proportionate increase in quantity demanded for exports, and an increase in export revenue measured in foreign currencies. Given that prices of the country's exports remain unchanged in domestic currency, there will be an increase in demand for exports in local currencies and export revenue will rise. At the same time, assuming demand for imports is price elastic, the rise in import price will cause quantity demanded to fall more than proportionate causing import expenditure to fall in domestic currency. As a result net exports will increase. There is also a multiplied increase in national income. Given that demand for labour is derived demand, the increase in real output within the economy leads to a fall in cyclical unemployment.

However, with a weaker currency, the price of imported raw materials and finished products will increase in local currency. This will lead to imported inflation in Singapore. Singapore will be hard hit in this case, given the country's lack of natural resources which makes it reliant on the rest of the world for imported raw materials and finished products. The rising cost of production can in turn lower export price competitiveness and partially offset the gains in export sales due to a weaker currency. In light of this trade-off, it is more likely that MAS will adopt a zero-appreciation stand, rather than an outright depreciation, unless in a very challenging conditions.

### **Cyclical Unemployment: Expansionary Fiscal Policy**

Given the above limitation of exchange rate policy, there is a scope to complement it with fiscal policy. This comprises of a fall in income taxes and/ or a rise in government spending. A fall in personal income tax increases disposable income and hence increases consumption, while a fall in corporate tax increases the after-tax profits of firms, which will help generate investments. Together with a direct increase in government expenditure, AD will rise.

There is greater production in the economy and firms will hire more factors of production, hence incomes of households who supplied factor services will rise. These individuals will spend more on domestically produced goods and services, depending on their marginal propensity to consume (MPC), and more will be withdrawn as savings, taxes and import spending. This rise in government spending further creates more income for individuals employed in the consumer goods and services industry who will further spend more on consumption. These rounds of spending will continue until

the change in withdrawals is equal to the initial change in injections. Hence national income will rise by a multiplied amount, hence achieving low demand deficient unemployment.

However, Singapore's multiplier is small due to her high marginal propensity to save through compulsory CPF contributions and high marginal propensity to import due to Singapore's high dependence on imports. Therefore this limits the effectiveness of fiscal policy on the economy.

Moreover, Singapore practices fiscal prudence and avoids using expansionary fiscal policy to stimulate the economy. This is in recognition that Singapore is an economy mainly driven by external demand and raising government spending and/ or cutting taxes to stimulate consumption and investment spending is not sustainable for the government.

### **Structural unemployment: Supply side policies**

Other than cyclical unemployment, Singapore is also vulnerable to structural unemployment as explained in part a). Structural unemployment occurs due to the mismatch of workers' skills in relation to job requirements. The use of supply side policies is somewhat effective in tackling structural unemployment in Singapore.

For example, Continuing Education and Training (CET) training schemes provide avenues for retraining and SkillsFuture Council which is driving a national effort to ensure that Singaporeans have the right skillsets to fill up jobs for the future economy. This increases the quality and employability of the workforce even as vacancy mismatch is resolve. Hence Singapore's productive capacity increases and the LRAS shifts right.

Other than addressing structural unemployment, higher labour productivity also encourages foreign investors to view Singapore as a favourable investment destination. The resulting increase in FDI and hence boost AD and reduce demand-deficient unemployment.

Also, the government has also put in place short run supply side policies to strengthen the competitiveness of its economy, especially during economic downturn. For example, the Wage Credit Scheme aims to subsidise wage increments in order to reduce cost of production for businesses and to retain workers. [Illustrate with SRAS-AD diagram.]

However, these short run and longer term policies may put a strain on government budget. The effects can only be experienced in the long run. Hence, the government has to weigh in these factors when deciding on policies to maintain a low unemployment rate.

### **Overall evaluation + conclusion**

In conclusion, supply side policies are the most likely to be effective to deal with structural unemployment while the exchange-rate policy is quite effective to deal with cyclical unemployment in Singapore, despite its limitations. Given that the government is pro-active in using supply side policies to manage the economy, we note that structural unemployment has been kept under control. However, where cyclical unemployment is concerned, policies are less effective as the cause of cyclical unemployment arises from external factors that are beyond the purview of Singapore's government. Hence, demand-management policies to tackle the immediate effects of a recession are still relevant.

Q6 Between 2012 and 2013, the number of Singapore dollars required to buy US dollars and Chinese renminbi increased by 3.5% and 6.6% respectively, while the number of Singapore dollars required to buy Japanese Yen and Malaysian Ringgit fell by 15.2% and 3.5% respectively.

Source: Monetary Authority of Singapore

- (a) Explain how an appreciation of a country's currency might affect the current account of its balance of payments. (10)
- (b) Discuss the likely overall effects of the changes in the exchange rate in 2012-13 on Singapore's domestic economy. (15)

### **Examiners' Comment**

#### **Question 6**

Candidates were also well-prepared for a question relating to changes in Singapore's exchange rate and the relevant concepts were clearly well understood. Strong candidates were selective in how they approached this open-ended question and gave well-structured answers. Weaker responses gave a more limited range of potential impacts and therefore struggled to bring the discussion to a clear and well-explained conclusion.

**(a)** Most candidates explained how, in theory, an appreciation might lead to a worsening of the current account of the balance of payments. The impact was well-explained with reference to appropriate elasticity values. These stronger responses also considered the potential impact on costs of production and hence the mitigating impact on export prices of a fall in the imported price of factors of production. Weaker responses stated rather than explained this outcome and tended only to give the former of these two impacts, failing to recognise the importance of the latter to Singapore.

**(b)** There were very mixed responses to this part of the question. Almost all candidates recognised that the Singapore dollar had depreciated against the US and Chinese currencies while it had appreciated against the Japanese and Malaysian currencies. The stronger responses gave good analytic and in-depth explanations of how both the AD and AS curves might be shifted following depreciation with a brief explanation that the reverse happens for an appreciation (or vice versa). A good and clear evaluative judgement about which effect was the most important for Singapore was then made. Weaker responses were more descriptive and less well-organised, or only considered the impact on aggregate demand. These candidates were unable to make judgements about which impact would dominate.

### **Introduction**

The current account of the balance of payments comprises the balance of trade in goods and services plus net investment incomes from overseas assets and net unilateral transfers. In this essay, I will be exploring the impacts of an appreciation of

a country's currency on the abovementioned aspects of the current account with an emphasis on the balance of trade.

### **Balance of Trade**

In theory, an appreciation of the local currency is likely to worsen the current account. As the SGD appreciates against, for example, the Japanese Yen and Malaysian Ringgit, exports to these countries become relatively more expensive in terms of foreign currency. Assuming that the demand for Singapore's exports to be price elastic ( $PED_x > 1$ ), a rise in price of exports in terms of foreign currency is likely to lead to a more than proportionate decrease in quantity demanded for Singapore's exports. Hence, export revenue in foreign currency falls. In terms of domestic currency, demand for Singapore's export increases and hence export revenue in SGD increases. Moreover, since the SGD appreciates, foreign goods become cheaper in terms of local currency. Therefore, assuming price elasticity of demand for imports to be more than 1 ( $PED_m > 1$ ), a fall in price of imports in terms of local currency will result in a more than proportionate increase in quantity demanded for imports. Hence, import expenditure rises. An overall effect of a reduction in export revenue and a rise of import expenditure results in a decrease in net exports. The current account thus worsens due to a decrease in balance of trade. Note that appreciation may also have some positive effects. For example, a large percentage of Singapore exports are in fact re-exports. 60% of Singapore's exports have imported content. Hence, the fall in import prices in terms of local currency leads to a decrease in unit cost of production for many local enterprises. These cost savings get passed on to the consumers, thus partially mitigating the impact of appreciation on export prices and hence limiting the drop in export revenue.

$PED_x$  and  $PED_m$  may not necessarily be  $>1$ . Time frame of analysis is a determinant of price elasticity of demand. The shorter the time frame, the demand for goods tends to be more price inelastic. Thus, in the initial period of time following an appreciation, current account may end up improving the current account given that both  $PED_x$  and  $PED_m$  are price inelastic in demand, with their respective quantities demanded changing less than proportionately with respect to their change in prices.

### **Net investment income flows (optional point)**

Net investment income flows refer to the profits/dividends/interest earned by overseas investors which are repatriated back to their home economies. Singapore's investments overseas will result in an inflow of income and foreign investments in Singapore will result in an outflow of income. If the investment income flows are fixed by time periods, e.g. profits are repatriated back annually in April then currency changes do not affect income flows per se. The impact is felt through accounting means. For inflows, because it involves a conversion to SGD, an appreciation of the SGD will mean a lesser amount of SGD is credited to our investment income inflow, since more foreign currency is needed to exchange for local currency. While the



outflows will remain the same since it is calculated in SGD, the foreign nation however may enjoy an increase in their currency since SGD can be exchanged for more foreign currency after an appreciation.

### **Net unilateral transfers (optional point)**

Unilateral transfers are money sent or received without any goods or services exchanged in return. These include workers' remittances, donations, aids and grants etc. This really depends on the individuals' method of accounting. For example, a Malaysian professional in Singapore wishes to send 2000 ringgit home every month. An appreciation will allow him/her to use less SGD in exchange for ringgit, resulting in less SGD outflows. But this really depends on the individual's preference so it is difficult to ascertain the probable impact of an appreciation on net unilateral transfers.

### **Conclusion**

In general, the balance of trade will be affected more significantly due to the impact of appreciation on the price of exports and imports. Thus any change in the current account is likely to be heavily influenced by the balance of trade and by extension, the price elasticities of demand of imports and exports.

6b)

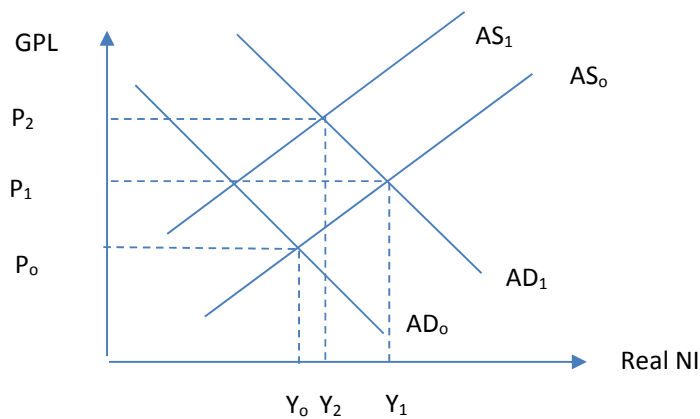
According to the extract, it can be seen that the SGD has depreciated against the USD and the Chinese RMB while it has appreciated against the Japanese Yen and Malaysia Ringgit. In this essay, I will be using the AD-AS model to explore the possible impacts of such changes in the exchange rate on Singapore's economy.

### **Impact of depreciation on Net Exports and AD**

As previously mentioned in part a, given a depreciation of the SGD against a foreign currency, given demand for Singapore's exports and local imports to be price elastic, a reduction in price of exports in terms of foreign currency will lead to a more than proportionate increase in quantity demanded for Singapore's exports hence export revenue in foreign currency rises. Demand for Singapore's export (in SGD) will increase and hence export revenue in SGD will increase. On the other hand, a depreciation results in a rise in price of imports in domestic currency (SGD) and quantity demanded will fall more than proportionately leading to a fall in import expenditure. Hence, the result is a rise in net exports. Since net exports increases, this is likely to improve the current account thus resulting in an improvement of the balance of payment.

Referring to Figure 1 below, as net exports increases, it leads to a rise in aggregate demand from  $AD_0$  to  $AD_1$ . As aggregate demand increases, at the existing price level

of  $P_0$ , aggregate demand exceeds aggregate supply. Firms experience an unplanned decrease in stocks, they thus increase their production to maximize profit. The increase in production results in a general rise in real national income from  $Y_0$  to  $Y_1$  and cyclical unemployment to fall as firms employ more factors of production including labour for their increased production. This is a movement along the AS curve. However, this puts upward pressure on prices since firms require more factors of production assuming there are pre-existing supply bottlenecks. They thus bid up the prices for various factors of production resulting in inflation and general price level to rise, as GPL rises. The result is that the economy is at a new equilibrium of  $Y_1$  and  $P_1$  where there is positive actual growth, increased demand-pull inflation and a decrease in cyclical unemployment.



**Figure 1: AD/AS**

### **Impact on SRAS**

Since a large percentage of Singapore's exports are re-exports, depreciation is likely to result in a rise in unit cost of production. This results in a shift of the short run aggregate supply from  $SRAS_0$  to  $SRAS_1$ , referring to Figure 1. Since unit cost of production rises, it leads to cost push inflation further increasing general price level from  $P_1$  to  $P_2$ . However, due to the rise in cost of production, it has the effect of diluting the benefits of depreciation explained earlier, resulting in real national income to settle at  $Y_2$ .

### **Impact of an appreciation**

AD will fall given a fall in  $(X-M)$ . SRAS will increase given fall cost of production.

### **Net effect of appreciation against Yen & Ringgit and depreciation against USD & RMB**

The actual effect or extent of impact is dependent upon the price elasticity of exports and imports against the other 4 countries, the relative importance of the 4 economies in Singapore's total net exports and extent of change of value of currency.

Since Singapore is a country that lacks natural resources, it imports necessities and often basic goods to engage in remanufacturing and additive manufacturing. As such, its demand for imports are price inelastic. It is interesting to note that Singapore's top import origins are China, Malaysia, the United States and Japan. Since its demand for imports is price inelastic across all 4 import origins given the relative large percentage of these economies in total imports, the most significant impact should be evaluated based on the extent of the change in currency. With such a basis, we observe that after accounting for year on year inflation, US, China and Malaysia have significantly low changes in the exchange rate against the SGD. The significant depreciation of the SGD against the Japanese Yen is likely to have the largest impact on import expenditure. Since demand for imports is price inelastic, given a rise in price of imports in terms of foreign currency, quantity demanded for Japanese imports decreases less than proportionately, import expenditure is likely to rise despite mitigating effects from China and USA due to the more significant appreciation of the SGD against the Japanese Yen.

In terms of exports, Singapore predominantly engage in the exports of high-end manufacturing goods such as aeronautical, petrochemical and bioengineering. These goods often require high-skilled labour and good infrastructure. The extent of impact of the changes in currency should thus be evaluated based on the relative importance of the various economies as trading partners and the relative elasticity of Singapore's exports from their perspectives. We therefore conclude that the greatest impact on export revenue is likely the depreciation of the SGD against the Chinese RMB. China is Singapore's largest trading partner country. Our exports to China amount to a whopping US\$42.8 billion, constituting nearly 13% of GDP. This dwarfs that of Japan whose appreciation is of a larger magnitude but only constitutes 3% of total export revenue. Moreover, its depreciation against the Chinese Renminbi is also of a more significant magnitude as compared to US and Malaysia which are also our export countries, each constituting around 7% of our total exports. It is likely that our exports to China are also price inelastic as despite China's rapid rise up the value chain, it is still in the process of restructuring its economy. It thus still requires high-end capital goods. Moreover, despite existence of other substituting countries such as Germany and USA, Singapore is a close trading partner that is favoured due to geographical closeness. Moreover, it exports much of its financial services to China as it is the financial hub of Southeast Asia. All this culminates to China's demand for Sg's exports to be price inelastic that results in a fall in export revenue as depreciation of SGD occurs against the Chinese Renminbi.

The overall effect of a fall in export revenue and rise in import expenditure is likely to result in a decrease in net exports. Hence, aggregate demand will be affected, real national income is likely to fall with a fall in demand-pull inflation and an increase in

cyclical unemployment. However, this negative impact is partially mitigated by the fact that unit cost of production is likely to fall significantly due to the appreciation of the SGD against the Yen and Malaysian RMB.

**Suggested answers H2 N2017 CSQ1**

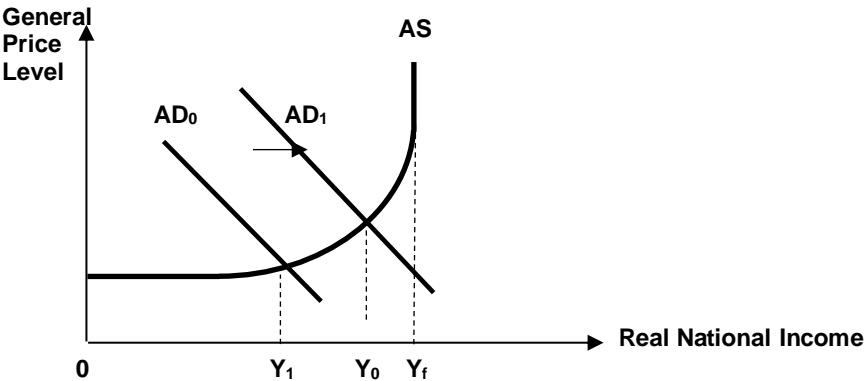
(a)	<b>With reference to Extract 1, identify and explain one negative externality arising from the 'diet Westernisation' in Japan.</b>	<b>[2]</b>
	<ul style="list-style-type: none"> <li>Negative externality arising from 'diet Westernisation' in Japan is the negative spill-over effects arising from consumption which are harmful to the third parties who are neither the consumers nor producers.</li> <li>'Diet Westernisation' refers to 'diets containing more meat and animal products' and hence consuming more of such diets would lead to increasing 'obesity and health problems' result in fall in labour productivity that results in rising cost to the employers.</li> </ul>	
(b)	<b>With reference to Table 1, explain which meat product is considered more of a necessity by consumers in Japan.</b>	<b>[2]</b>
	<ul style="list-style-type: none"> <li>Poultry is considered more of a necessity by consumers.</li> <li>The income elasticity of demand for poultry is positive and the lowest hence a change in income will lead to the least change in demand for poultry in the same direction, hinting that poultry has the <b>highest degree of necessity</b>.</li> </ul> <p><i>Note: Based on the concept of YED, necessity has a positive sign and less than 1, i.e. <math>0 &lt; YED &lt; 1</math>. All 3 types of meat fit into the definition since YED values are all positive and less than 1. Nonetheless, choose the 1 with the smallest value to indicate the highest degree.</i></p>	
(c)	<b>Suppose the price of imported chilled beef rises. Explain what would happen to total spending by Japanese consumers on imported chilled beef from (i) Australia and (ii) the Rest of the World.</b>	<b>[4]</b>
	<p>Reference to Table 2, the Price Elasticity of Demand (PED) of Japanese consumers for chilled imported beef:</p> <p>(i) Imports from Australia – Ignoring the sign, the magnitude of the <b> PED </b> for imported chilled beef from Australia is 0.92 (which is less than 1), hence demand is price inelastic. When the price of imported chilled beef from Australia rises, there will be a less than proportionate fall in quantity demanded. Since spending or expenditure is obtained by Price x Quantity, there will be an increase in spending by Japanese consumers.</p> <p>(ii) Imports from Rest of World – The magnitude of the <b> PED </b> for imported chilled beef from Rest of the World is 1.18 (which is more than 1), hence demand is price elastic. When the price of imported chilled beef from the Rest of the World rises, there will be a more than proportionate fall in quantity demanded. Since spending or expenditure is obtained by Price x Quantity, there will be an decrease in spending by Japanese consumers.</p>	
(d)	<b>Using the information in Extract 2, calculate and interpret the cross elasticity of demand in Japan between Australian chilled beef and (i) US chilled beef and (ii) chilled beef from the rest of the world.</b>	<b>[4]</b>
	<p><b>Recall:</b> Cross elasticity of demand, CED measures the degree of responsiveness of demand for a good (Good Y) to a change in the price of another good (Good X), ceteris paribus.</p> <p>The formula is: <math>\frac{\% \text{ change in quantity demanded for Good Y}}{\% \text{ change in price of Good X}}</math></p> <p>(i) From Extract 2, cross elasticity of US chilled beef to Australian chilled beef (<math>CED_{US-Aust}</math>)  <math>\frac{\% \text{ change in quantity demanded for US chilled beef}}{\% \text{ change in price of Australian chilled beef}}</math>  <math>\frac{+0.74}{+1.0} = +0.74</math></p> <p>The positive sign but less than 1 indicates that they are <b>weak substitutes</b> in which a change in price of Australian chilled beef will result in a less than proportionate change in quantity demanded for US chilled beef in the same direction.</p> <p>(ii) From Extract 2, cross elasticity of chilled beef from the rest of the world to Australian chilled beef (<math>CED_{W-Aust}</math>)  <math>\frac{\% \text{ change in quantity demanded for chilled beef from the rest of the world}}{\% \text{ change in price of Australian chilled beef}}</math>  <math>\frac{+1.34}{+1.0} = +1.34</math></p> <p>The positive sign and more than 1 indicates that they are <b>strong substitutes</b> in which a change in price of Australian chilled beef will result in a more than proportionate change in quantity demanded for US chilled beef in the same direction.</p>	







**Suggested answers H2 N2017 CSQ2**

(a)	<b>Explain briefly how any one component of aggregate demand would be expected to change as interest rates are cut in China.</b>	<b>[2]</b>
	<p>With a cut in interest rates, cost of borrowing falls [1]</p> <p>Consumers can purchase more consumer durables resulting in a rise in consumption [1] OR The marginal expected rate of returns increases for producers (investment projects are now profitable) who will increase investment. [1]</p> <p><i>Note: Impact on NX not applicable to China which practices capital control</i></p>	
(b)	<b>With reference to Table 4, describe what has happened to the rate of inflation and the price level in China between 2011 and 2015.</b>	<b>[2]</b>
	The rate of inflation has fallen [1] and the price level in China has risen [1] between 2011 and 2015.	
(c)	<b>Using an aggregate demand and aggregate supply diagram, explain how the strengthening of the US economy might stimulate growth in China.</b>	<b>[4]</b>
	 <ul style="list-style-type: none"> <li>• Diagram showing AD shifting to the right [1]</li> <li>• With the US economy strengthening, income in the US rises leading to a rise in demand for China's exports (assuming they are normal goods). [1]</li> <li>• This results in a rise in export revenue and China's aggregate demand.</li> <li>• [1] Assuming full employment output level has not been attained, the increase in AD will result in a rise in national income through the multiplier effect, stimulating actual growth. [1]</li> </ul>	
(d)	<b>Explain <u>two</u> factors that would <u>likely</u> determine the impact of the fall in export sales to China on any one economy shown in Table 5.</b>	<b>[4]</b>
	<p>Can choose any country in Table 5 (Australia, Japan, New Zealand or Singapore)</p> <p>Explain any 2 factors and 2m each.</p> <ul style="list-style-type: none"> <li>• One factor is the openness of the Singapore economy. Given that Singapore is highly dependent on China for trade, a fall in demand for exports to China is likely to reduce the size of export revenue and hence AD, resulting in a fall in national income via the multiplier negatively affecting growth and increasing cyclical unemployment.</li> <li>• Another factor is the size of the multiplier of the country. For example Singapore has a small multiplier due to her high savings and high dependency on imports. Hence the negative impact of the fall in export sales to China on national income is likely to be reduced, slowing down economic growth and increasing cyclical unemployment.</li> <li>• Another factor to consider is the state of the chosen economy. If Singapore is experiencing demand-pull inflation, the fall in export sales is likely to be good for the economy as it reduces inflation while maintaining economic growth.</li> </ul> <p><i>Note: Avoid misreading the question as what would determine the value of the loss in export sales. Instead focus on the <u>impact of the loss in export sales on the selected economy</u>.</i></p>	

(e)	Analyse how China's policymakers might attempt to transform the economy to one that is driven by consumer spending. Assess whether they are likely to be successful.	[8]				
	<p>Aim of Chinese policymakers: Transform economy to one driven by consumption. This refers to an <u>increase in the proportion of consumer spending</u> relative to the other components of AD.</p> <p>Current situation: The use of fiscal stimulus and cut in interest rates to address the economic weakness (fall in imports and exports).</p> <ul style="list-style-type: none"><li>The government could also <b>reduce income taxes</b> to increase workers' disposable income or <b>reduce goods and services taxes</b> to encourage greater consumer spending in the economy.</li><li><i>Limitation: This is provided the government has sufficient funds to accommodate the fall in revenue earnings. If not, this policy may not be sustainable in the longer term. Given the current fiscal spending on the economy, this policy while having an immediate effect, will likely be used only when necessary.</i></li><li>The government could also <b>reduce interest rate</b> which lowers the cost of borrowing for <b>households</b> to encourage them to buy local consumer durable.</li><li><i>Limitation: Depends on responsiveness of consumption to interest rate.</i></li><li><b>Provision of tax grants or subsidies</b> to local firms to encourage the production of quality goods and services that target the middle income group.</li><li><i>Limitation: For consumption to drive growth, it is necessary to have the masses and not just the middle income group.</i></li><li>Implement supply side policy such as <b>training and education</b> to improve the skills of workers so that productivity can increase and they will be able to earn higher wages boosting their income and hence purchasing power to increase consumption.</li><li><i>Limitation: While it is a long-drawn process, implementing such a policy now may be a good timing given that firms are experiencing a fall in exports (i.e. fall in demand for their products) and many industries face excess production capacity (Extract 5).</i></li></ul> <p><b>Overall Evaluation:</b></p> <ul style="list-style-type: none"><li>Even with more income in the hands of consumers, the belief in thrift amongst Asians may result in less than expected income being spent by consumers in the economy.</li><li>On the other hand, over-spending by consumers may result in indebtedness which may have negative consequences in the economy in the future.</li><li>Government will be successful if the above policies are implemented after they have considered factors such as their budget, belief in thrift and the long-term effects. After all, Chinese leaders seem prepared to accept a 'slower but more sustained economic growth'.</li></ul> <p><i>Note: Do not suggest policies that increase both C and other AD components as well because this implies there is no change in the <u>proportion</u> of C to AD.</i></p>					
(f)	Discuss whether an expansionary monetary policy adopted by China is likely, on balance, to have a beneficial effect upon China's trading partners.	[10]				
	<p><b>Explain workings of expansionary monetary policy:</b></p> <ul style="list-style-type: none"><li>As explained in part (a), expansionary monetary policy via interest rate cuts will result in a rise in AD.</li><li>Briefly explain how national income rises through the multiplier process and generates economic growth for China. This increases the income of households.</li></ul> <table><tr><th>Benefits to China's trading partners</th><th>Negative impact</th></tr><tr><td><ul style="list-style-type: none"><li>With successful expansionary MP, the rise in income in China will increase the demand for China's trading partners' exports (assuming they are normal goods). This will increase the export revenue of China's trading partners. Trading partners' trade balance and hence BOP improves.</li><li>X being a component of AD means AD increases, resulting in national income rise and hence actual growth, lower demand-deficient unemployment.</li></ul></td><td>However, if the trading partners' economy is already at full employment, China's expansionary MP might generate demand-pull inflation instead.</td></tr></table> <p>Illustrate with an AD-AS diagram to show rise in AD resulting in growth and GPL in trading partners. May draw a '3-line' AD to show the extent of rise in AD – one that shows a rise in AD that cuts the vertical range showing inflation and one that still cuts the horizontal range with no inflation.</p>	Benefits to China's trading partners	Negative impact	<ul style="list-style-type: none"><li>With successful expansionary MP, the rise in income in China will increase the demand for China's trading partners' exports (assuming they are normal goods). This will increase the export revenue of China's trading partners. Trading partners' trade balance and hence BOP improves.</li><li>X being a component of AD means AD increases, resulting in national income rise and hence actual growth, lower demand-deficient unemployment.</li></ul>	However, if the trading partners' economy is already at full employment, China's expansionary MP might generate demand-pull inflation instead.	
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	<div>Overall Evaluation</div> <div><ul style="list-style-type: none"><li>• Impact on trading partners be it positive or negative depends on the success of China's expansionary MP in generating income for their households and firms depends on consumer and investor confidence in the economy and extent of interest rate cuts (6 times since Nov 2014). If expansionary MP is not successful (and economic weakness persists as reflected in Extract 4), economic growth in China will remain sluggish and China's trading partners will still suffer from a fall in export revenue.</li><li>• The extent of the positive or negative impact on China's trading partners also depends on the type of goods and services China's trading partners export to China. The several European countries mentioned in Extract 6 will benefit greatly with an effective expansionary MP since they export luxury goods to China which have an income elastic demand. Countries such as those which supply raw materials such as oil and gas, which are likely to have diversified their exports to include other countries may in comparison benefit less from the workings of China's expansionary MP.</li><li>• The extent of the positive or negative impact on China's trading partners also depends on whether China is a top export destination to the trading partners</li><li>• Overall, assuming the MP in China is successful and the trading partners are experience sluggish growth and sells normal goods to China, there will be economic growth and should have little demand-pull inflation and on balance, it will be beneficial to China's trading partners.</li></ul></div>	
	<div>Note: Ensure a balanced answer with both advantages and disadvantages as this provides the scope for evaluation.</div>	

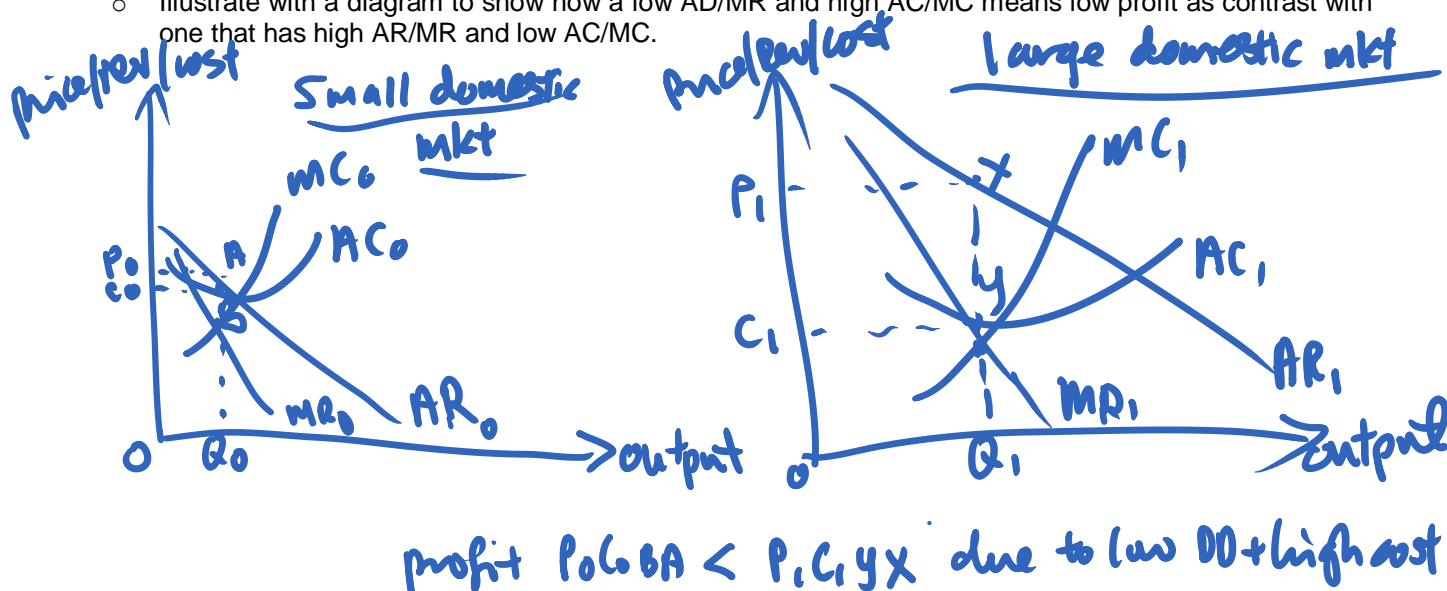
1. In the small island economy of Singapore, producers face different constraints from larger economies.
- (a) Explain how firms in Singapore will be affected by constraints, such as having a small domestic market and a lack of resources [10]

- How does small domestic DD affect the DD / revenue for firms in Singapore?
- How does a lack of resources affect the SS / costs for firms in Singapore?
- What is the combined effect in Singapore's firms' profitability and growth potential?

**Note:** As the question is about the impact on firms, the more appropriate way to use is a market structure framework that focuses on an individual firm's revenue, costs and hence profits. However, it is also possible to use a DD & SS framework to analyse the impact on market demand, supply and hence producer surplus, although the likelihood of scoring full L3 marks using the latter is probably lower.

• **Firm analysis (market structure)**

- Small domestic DD → low AR and MR
- Small domestic market → limited output → limited internal EOS → high MC & AC
- Lack of resources ⇒ limited supply of land and labour → high MC & AC
- Combined effect of low revenue and high costs → illustrate with a rev-cost diagram to show low profits
- Illustrate with a diagram to show how a low AD/MR and high AC/MC means low profit as contrast with one that has high AR/MR and low AC/MC.



OR

• **Market analysis (DD & SS)**

- Small domestic demand → low DD
- Lack of resources → high costs → low SS
- Combined effect of low DD and SS → low producer surplus

AND

- Impact on growth potential: low profits / producer surplus ⇒ limited ability to invest in capacity and engage in product R&D → hard for firms grow and become MNCs

**Mark scheme**

To score L3 your need to explain the impact

- Of both small domestic market and lack of resources
- On both DD / revenue (AR & MR) and SS / costs (AC & MC)
- On profitability (and growth potential for a strict mark scheme)

**Note:** Since the question is about firms, firm analysis is a more aligned to the question requirements than the market analysis so it is more likely to score full L3.

**(b) Assess which are the appropriate policies that firms and governments could adopt to overcome such constraints. [15]**

- What policies can firms and government use to overcome such constraints
- How do these policies work?
- What are the limitations / trade-offs of these policies?
- Which policies are more / most appropriate and why?

**Note:** In the case for firms, policies probably refer to business strategies. Also, as the question is generic and not specific to the Singapore economy, the examples should not be limited to only Singapore based examples.

**Mark scheme**

To score L3 you need to

- Cover both business strategies and government policies
- Explain at least two strategies and two policies
- Explain the limitations / trade-offs of the strategies and policies

To score E3 you need to

- Evaluate the extent of the limitations / trade-offs
- Make a substantiated a stand on which strategy / policy is more / most appropriate

**What are strategies of firms and their limitations / trade-offs**

- Small domestic market
  - Firms need expand into overseas markets
    - Local firms may lack funding (due to low profitability and scale) and knowledge about overseas culture, regulations, business environment etc
      - To overcome lack of EOS, local firms can consider merging before venturing overseas
- Lack of natural resources
  - Import foreign labour
    - Subjected to the countries immigration restrictions
  - More automation and better design of buildings to make better use of land
    - Firms especially SMEs may lack technology and funding to do so

**Which strategy is more relevant?**

- To overcome small domestic market, there is no choice but to expand overseas regardless of the challenges
- However to overcome the lack natural resources, automation and design is better than importing foreign labour as this is fully within a firm's control and not subject to changes in government regulation

**What are policies of the government and their limitations / trade-offs**

- Small domestic market
  - Negotiate more FTAs to bypass trade barriers
    - Trade diversion may out-weigh trade creation
  - Devalue ER to artificially boost export competitiveness
    - May result in both demand pull and imported cost push inflation
- Lack of natural resources
  - Relax immigration rules
    - Potential overcrowding and hence political backlash
  - Promote outsourcing to other lower cost countries
    - May result in domestic structural unemployment

**Which policy is more appropriate?**

- FTAs are better as not subjected to trade retaliation unlike ER undervaluation
- Outsourcing is politically less challenging than relaxing immigration as the former only affects those who become unemployed while the latter affects the living standards of most residents in the country.
- Overall government policies tend to most appropriate when they aim to support the internationalisation strategies of firms e.g. FTAs not only facilitate international trade but also investments, which helps firms in their outsourcing.

2. Falling interest rates, continued income growth and other factors contributed to a period of rapid residential property price inflation in Singapore from the middle of 2009. However, the government has successfully pursued policies to restrict this rise to the extent that residential property prices actually fell in 2014 and 2015.

(a) Use supply and demand analysis to explain why falling interest rates and continued income growth may have led to a rapid rise in residential property prices. [10]

- How will falling interest rates and continued income growth raise the demand for residential property?
- What is the likely YED and PES for residential property?
- How will YED, PES and the shift in DD result in a rapid rise in residential property prices?

#### Mark scheme

To score L3 your need to explain the impact on residential property price of

- Both interest rates and continued income growth
- Both YED and PES

How will  $\downarrow i/r$  and continued Y growth  $\uparrow$  the DD for residential property?

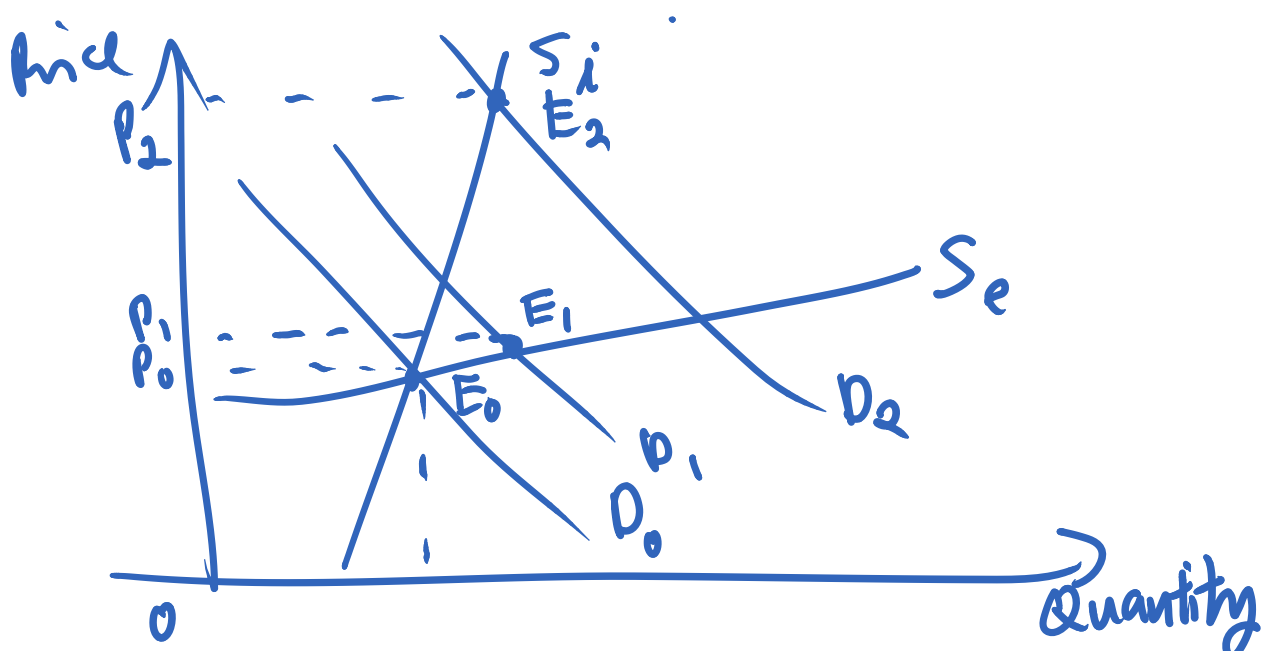
- $\downarrow$  Interest rate  $\rightarrow \downarrow$  cost to borrow to finance property purchases  $\rightarrow \uparrow$  DD for property
- Continued income growth  $\rightarrow$  more income to pay for property purchases  $\rightarrow$  increase upgrading of property and also investment in property  $\rightarrow \uparrow$  DD for property

What is the likely YED and PES for residential property?

- YED: depends on the type of property
  - Higher end property like Built-to-Order (BTO) larger flats, condominiums and private houses: YED  $> 1$  (normal-luxury)
  - Middle tier property smaller HDB flats:  $0 < \text{YED} < 1$  (normal-necessity)
  - *Low end property like 2 room HDB flats: YED  $< 0$  (inferior goods) – not really needed in this question as the focus should be in YED  $> 0$  with rising income that will raise demand and thus price.*
  - *1 room HDB flats are generally for rental and not for purchase.*
- PES: all property takes a long time to build so low PES (steep supply curve)

How will YED, PES and the shift in DD result in a rapid rise in residential property prices?

- A more proportionate  $\uparrow$  in DD (especially for higher end property) and PES  $< 1$  supply curve  $\rightarrow$  rapid  $\uparrow$  in property prices as compare with a less than proportionate  $\uparrow$  in DD and PES  $> 1$  supply curve
- Illustrate and explain the diagram below



**(b) Discuss the policies that might be used by the Singapore government to reduce residential property price inflation. [15]**

- What are some policies that can be used to reduce residential property prices?
- How do these policies affect the demand and/or supply of residential property?
- What are the limitations and trade-offs of these policies in the Singapore context?
- Which policy is more useful and why?

**Note:** Answers which show knowledge of actual policies used in Singapore to curb property bubbles (e.g. TDSR, ABSD, restriction of purchases by foreigners and min down payment) are likely to do better than those that discuss about generic policies to reduce the demand and/or increase supply of a good or service.

**Mark scheme**

To score L3 you need to explain

- At least two policies and the limitations / trade-offs of the policies

To score E3 you need to

- Evaluate the extent of the limitations / trade-offs and make a substantiated stand regarding which policy is better

**What are some policies that can be used to reduce residential property prices?**

- TDSR, ABSD, increase land sales

**How do these policies affect the demand and/or supply of residential property?**

- **Total Debt Servicing Ratio (TDSR):**
  - Max of 60% of income can be used to finance all loans (not just property loans)
  - Aim to prevent households from over stretching their finances
  - If TDSR is lowered => not possible to take more loans to finance property purchases → ↓DD for property purchases → ↓ property prices
- **Additional Buyer Stamp Duty (ABSD):**
  - Extra taxes on the purchase of 2nd and 3rd (or more) property
  - Aim to deter property speculation without harming genuine home upgraders
  - If ABSD is raised => returns to property speculation reduced → ↓DD for property purchases → ↓ property prices
- **General Land Sales (GLS):**
  - All undeveloped land in Singapore is owned by the government
  - ↑GLS → ↑SS of land → ↑SS of property development → ↓ property prices

**What are the limitations and trade-offs of these policies in the Singapore context?**

- TDSR – affects other loans like car loans and renovations loans → reduces purchase power and material SOL for households in other areas
- ABSD – does not deter those with funding to hold the property for long periods
- ↑Land sales → may result in the over allocation of land to residential housing

**Which policies is most / least appropriate and why?**

- Arguably, the main factor contributing to a property bubble is always property speculation so ABSD is better than TDSR as the former directly targets speculation without harming other households who may genuinely need loans for other purposes.
- Increasing supply of housing especially for flats will be effective to bring down the price and increase the number of flat owners which fulfil the government's objective of affordable housing for Singaporeans. But the release of more land for private properties may not be the priority as it may to a glut and wastage of resources.
- Nonetheless, such cooling measures have to be taken with cautious to prevent a property bubble burst.

**Note:**

- It is not expected for students to know all the current policies to score an L3.
- It is possible for students to give other more 'generic' policies such as price ceiling to stop price from rising though the unintended consequence will be a shortage in the short-run which can be resolved when supply increases.
- Raising interest to combat demand may be used but not really advisable as Singapore follows interest rate of US. E.g. Interest has risen since last year as the Fed has raised interest rate.



**3. Government policies to restrict the use of cars and encourage the public to use the Mass Rapid Transit (MRT) system continue to be a source of heated debate in Singapore.**

**Assess the effectiveness of the policies available to the Singapore government in overcoming market failure in Singapore's land transport market. [25]**

**Mark scheme**

To score L3 marks you need to explain

- At least 2 different types of market failure relevant to Singapore land transport
- How such market failures arise and how they lead to welfare losses
- At least 2 policies which can be used to correct such market failures
- The limitations of these policies

To score E3 marks you need to

- Evaluate the extent of the policy limitations
- Make a substantiated stand on the overall effectiveness of Singapore's land transport policies

- Traffic congestion
  - Third parties like employers suffer from loss in productivity
  - Negative externalities →  $SMC > PMC$  by  $EMC \rightarrow Q_s < Q_e \rightarrow$  welfare losses  $\Rightarrow$  over consumption
- MRT
  - High infrastructure costs due to tracks, tunnels and stations
  - Cheaper for route to be supplied by 1 firm than to have duplicate infrastructure
  - Market is only big enough to support one firm
  - Falling AC and MC across the entire market demand curve
  - If production and sale is done by an unregulated private monopolist, profit max at  $MC = MR$  leads to large deadweight losses

**What are the policies (and their limitations) that Singapore government can use (or have used) to manage such market failures?**

**What policies can be used to manage such market failures and their limitations?**

- Traffic congestion:
  - Electronic road pricing (ERP)  $\Rightarrow$  tax on road use (Illustrate with a diagram how negative externality is internalised, shifting PMC upward to cut PMB at  $Q_s$ )
    - Confusing for motorist with varying charges on different routes
    - May **over**-divert traffic to other small roads and cause serious jam elsewhere
  - Certificate of Entitlement (COE)  $\Rightarrow$  quota to control car population and as a result raising the price for owning and driving car in Singapore (Instead of paying \$50k to own and drive a car, Singaporeans have to pay \$50k for the car and \$50k for COE which makes it \$100k; the car dealers are the ones who bid and pay for the COE first and thus this means a decrease SS for cars – higher price (\$100k instead of \$50k) and quantity demanded for cars falls)
    - Blunt tool as it penalizes ownership rather than usage (those who drive during off-peak who do not contribute to congestion are penalised)
- MRT → high fixed costs due to tracks, tunnels and stations
  - MC pricing is required to achieve allocative efficiency but losses are incurred hence government subsidies are required
  - To avoid subsidies, AC pricing can be used as a second best option
  - Such prices can be achieved through either nationalisation or price regulation
  - MRT was nationalised but then privatised and subjected to price regulation
    - Price controls caused MRT to raise profit by cutting back on maintenance, resulting in train breakdowns and delays
    - However, with the recent re-nationalisation of infrastructural upgrading and maintenance, reliability should improve considerably in the future

**Which policies are more effective in the Singapore context (and why)?**

- ERP is definitely more effective than COE in reducing traffic congestion
  - It is more targeted as it focuses on usage and not ownership
  - With improvement in technology like satellite ERP and transport mobile apps providing real time ERP information, drivers also can plan their routes better
- Improving public transport like MRT is arguably the most important policy as there must be an affordable, comfortable, accessible and reliable alternative to driving so that more people are willing to switch from private the public transportation.

**How effective overall are Singapore's land transport policies?**

- COEs controls the overall car population so that total demand for private car usage is capped
- ERP is then used to spread out the traffic and also to incentivise some drivers to switch to public transport
- Improvements in public transports then give motorists viable alternatives
- When used together, these policies arguably complement each other to keep Singapore overall traffic congestion to manageable levels

*(Besides negative externalities and market dominance, an analysis of how imperfect information can also lead to underconsumption of public transportation is also acceptable. For example, existing drivers may be unwilling to switch to public transport because they may have the wrong perception that public transport is inconvenient, slow and inaccessible when in actual fact, there are lots of improvement in these areas. As a result,  $PMB_p < PMB_a$  and thus underconsumption. Relevant policies therefore include efforts to educate the public, providing the SG Bus Service app and hence correct such misconceptions)*

4. **High rates of unemployment remain a major issue in many economies of the world. An understanding of various causes of unemployment is needed in order for a government to decide on the economic policies that would help its economy achieve full employment.**

**Discuss the various causes of unemployment and the economic policies that would help to achieve full employment in today's globalized world. [25]**

**What are the various types of unemployment in a globalised world and why do they arise?**

- Demand deficient – lack of AD due to economic downturn and linking it being externally induced (**explain in details with an AD-AS diagram**)
- Structural – mismatched of skills due to changing comparative advantage arising from technological improvement and globalisation (both international trade and international factor flows – outsourcing and offshoring)
- Frictional – imperfect information → globalisation increases time required for screening of workers by employers and job search by workers (beside looking for jobs in the local market, potential employees may search for jobs in other countries)

**What is full employment and how various policies can be used to achieve this?**

- **Full employment**
  - No DD deficient unemployment but there could still be structure and frictional
  - AD cuts the vertical portion of the L-shaped Keynesian AS curve
- **Policies to ↑AD**
  - Expansionary FP: ↑G & ↓T (hence ↑C & ↑I)
  - Expansionary MP
    - ↓i/r → ↑C & ↑I
    - ↓ER → ↑(X-M)
  - Protectionism → ↓M → ↑(X-M)
  - All policies will work through the multiplier effect (**explain the process in a succinct paragraph**):  
↑J → ↑AD → ↑Y → ↑C → ↑AD etc
- **Policies to ↑AS (shift SRAS down)**
  - Reduce prices of factors of production
    - Wage subsidies (Jobs Credits Scheme)
    - Cut firm's social security contributions (e.g. CPF cuts)

### What are the limitations and/or trade-offs of these policies?

- Expansionary FP: small multiplier, crowding out, tax insensitivity, public debt
- $\downarrow i/r$ : interest insensitivity, liquidity trap, asset bubbles
- $\downarrow ER$ : competitive devaluation, low PED for X and M
- Protectionism: retaliation and beggar thy neighbour effects
- Policies to  $\uparrow AS$  (shift SRAS down)
  - Wage subsidies  $\rightarrow$  very costly
  - Cut firm's social security contributions  $\rightarrow$  disrupts households' spending

### How useful are these policies in a globalised world?

- Globalised world  $\Rightarrow$  most economies are increasingly interdependent and interconnected  $\Rightarrow$  likelihood of retaliation is much higher  $\Rightarrow$  all economies should avoid protectionism and ER devaluation and rely on other policies
- Large economies
  - Use FP when downturn is severe as high interest insensitivity will cause MP to be highly ineffective whereas FP ( $\uparrow G$ ) will guarantee at least an initial injection
  - Use MP when downturn is mild as interest insensitivity is still low and is cheaper than FP as there is no debt incurred from running budget deficits
- Small economies
  - Domestic market is too small to rely on domestic DD management
  - Only effective option is to use SS-side policies to help reduce costs and improve the cashflow for firms, thus minimizing firm closure and unemployment

### Mark Scheme

To score L3 marks, you need to

- Explain the meaning and causes of at least 3 types of unemployment
- Explain at least 3 types of policies to reduce demand deficient unemployment
- Explain the limitations or trade-offs of these policies

To score E3 marks, you need to

- Evaluate the extent of the limitations or trade-off
- Take and substantiate a stand as to which policies are more useful in a globalised world

*(Full employment can be defined as the situation there is no involuntary unemployment. Structural unemployment can be considered involuntary because the unemployed workers may be unable to acquire the relevant skills even if they want to as they may lack the necessary education, finances and opportunities to take up such training. If defined in this manner, a discussion of policies to reduced structural unemployment will thus be relevant.)*

**5. Singapore is considered to have a high standard of living, a high cost of living and a strong overall macroeconomic performance.**

**(a) Explain the link between the standard of living, the cost of living and the macroeconomic performance of a country. [10]**

**Mark Scheme:** To score L3 you need to explain links that cover all the mentioned concepts

**What is meant by standard of living, the cost of living and the macroeconomic performance?**

- Standard of living (SOL): material and non-material well-being / welfare of the average resident (give some examples)
- Cost of living (COL): general price levels (GPL) relative to average nominal income i.e. purchasing power for a given income level
- Macroeconomic performance: inflation, unemployment, economic growth, and balance of payments (BOP)

**How are the concepts linked?**

- How does COL affect SOL?
  - Higher COL=> higher GPL => lower purchasing power for a given income level => lower material SOL
- How does macroeconomic performance affect COL?
  - Higher inflation => GPL ↑ faster => faster ↑ in COL
- How does macroeconomic performance affect SOL?
  - Inflation => ↑GPL => ↑ cost of living => ↓material SOL for a given nominal income level
  - Unemployment => no wage income for the unemployed → substantial ↓ in their material SOL
  - Economic growth → ↑ real output → ↑ real income → ↑ consumption → ↑ material SOL
  - High inflation and unemployment can also cause stress → ↓non-material SOL

**(b) Discuss the economic policies which might have resulted in Singapore arriving at this position? [15]**

**What are the economic policies that have enabled Singapore to achieved strong and sustained macroeconomic performance and hence high living standards?**

- Low inflation: gradual appreciation of S\$
- Low unemployment: supply side measures during economic downturn
- Strong and sustained growth: continued investment in infrastructure, training, education and technology + trade policies via signing of FTAs

**How do these policies work to achieve their intended aims?**

- Gradual appreciation of S\$ to fight inflation
  - Singapore lacks natural resources → highly dependent imports for inputs and consumption good
  - Appreciation of S\$ → ↓ costs of imported consumption goods for households → keeps inflation low
  - Appreciation is gradual so as not to shock exporters by giving them time to adjust and gradually improve their productivity
- SS-side policies to ↓DD deficient unemployment
  - Reduce labour costs through wage subsidies or CPF cuts
  - SRAS shifts down → ↑output → ↑employment → ↓unemployment
  - Reduces operating costs → improve cashflow → minimize retrenchment and firms closure
- Strong and sustained growth: continued investment in infrastructure, training, education and technology + trade policies via signing of FTAs
  - ↑ both AD and LRAS (productive capacity) and facilitate movement of production up the value chain → long run improvement in terms of trade (TOT)

**How could these policies have resulted in high cost of living?**

- Inflation has largely been very low in Singapore => not the cause of high COL
- High COL is mainly due to appreciation of S\$
  - ↑ S\$ means that foreigners find goods and services in Singapore increasingly more expensive relative to their home countries and vice versa for Singaporeans when they are overseas
  - Singapore's continually upgrading of its production capabilities to higher value-added products enables its TOT and hence the S\$ to appreciate in the LR

*(Another way of explaining why Singapore has a high COL is that micro policies have led to high private transport and housing costs. While ERP and COE resulted in high private transport costs, severe restrictions on sale and purchase of HDB flats compared to minimal restrictions for private properties has substantially raised the exclusivity and hence prices of private housing. Other policies like Build-to-Order (BTO) HDB, HDB upgrading have also caused public housing prices to rise substantially.*

*One may note that Singapore has low inflation though COL via private transport and housing is high. This discrepancy here might be due to the chosen items and the assigned weights in the basket of goods the government uses to calculate the CPI.)*

**Which policies are more important in explaining Singapore's how it has arrived at its current situation?**

- SR SS-side policies are probably the least important as it only explains Singapore's strong macro performance and high SOL but not its high COL
- Without ↑TOT, the ER will probably not appreciate much in the first place => investments in the upgrading of production capabilities are arguably more important than its ER management in explaining Singapore's current position

**Mark Scheme**

To score L3 you need to

- Explain at least 2 policies
- Explain how they could have affected its macro performance, SOL and COL

To score E3 you need to

- Take a substantiated stand as to which policy(s) is more/most important in explaining how Singapore has arrived at its current position

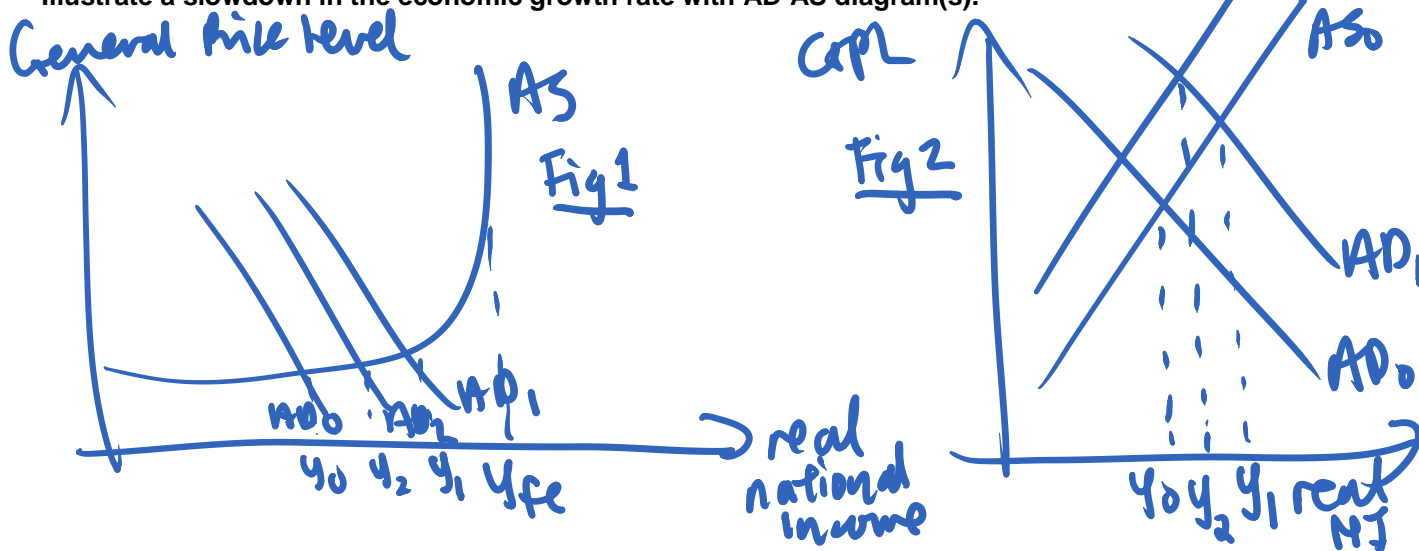
6. The Singapore economy grew by 1.8% on a year-on-year basis in the second quarter of 2015, sharply lower than the 2.8% growth in the preceding quarter, the Ministry of Trade and Industry (MTI) announced on Tuesday 11 August 2015.

- (a) Explain the internal and external factors that are likely to have contributed to this slowdown in the economic growth rate. [10]

What is meant by a slowdown in the economic growth rate?

- Define economic growth as a rise in real output over a period of time and a slowdown of growth rate means output is still rising though at a slower rate.
- In this instance, Singapore economy grew by 1.8% on a year-on-year basis in the second quarter of 2015, sharply lower than the 2.8% growth in the preceding quarter.

Illustrate a slowdown in the economic growth rate with AD-AS diagram(s).



Explain a stronger growth is illustrated by a rise in  $AD_0$  to  $AD_1$  but there might be counter forces that cause the increase to  $AD_2$  instead in Figure 1. Besides, it is also possible for  $AS$  to fall and thus reduce the growth as shown in Figure 2.

What is meant by internal and external factors?

- Internal: domestic demand (C, I, G) and domestic costs (wages and rental)
- External: external demand (X) and external costs (imported inputs)

What cause domestic and external demand and cost to change?

- Domestic demand:  $\downarrow C$  &  $\downarrow I$  can be due to negative economic outlook
- Domestic costs:  $\uparrow$  wages can be due to  $\downarrow$  immigration
- External demand:  $\downarrow X$  negative growth in other countries
- External costs:  $\uparrow$  price of imported inputs (rise in global price of raw materials and food)

How can changes in internal and external demand and costs affect SR growth?

Explain and illustrate the following with AD AS diagrams

- $\downarrow$  Internal or external DD  $\rightarrow \downarrow AD \rightarrow$  multiplier effect  $\rightarrow \downarrow$  real output  $\Rightarrow \downarrow$  SR growth
- $\uparrow$  Internal or external costs  $\rightarrow \downarrow AS \rightarrow \downarrow$  real output  $\Rightarrow \downarrow$  SR growth

### Mark Scheme

To score L3 you need to

- Explain the difference between internal and external factors
- Provide plausible examples of how such factors may change
- Analyse how changes in these factors affect AD AS and hence SR growth

**Note:** Since the question is focused on explaining why growth rate fell within a year, the focus should be on short run growth and not long run growth.

**(b) Discuss whether policies aimed to increase the economic growth rate might cause difficulties for Singapore's economy. [15]**

**Mark Scheme**

To score L3 you need to

- Explain at least two macro aims that may conflict with SR growth
- Explain how certain policies can cause such conflicts
- Explain how certain policies may not cause such conflicts

To score E3 you need to

- Make a substantiated stand as to whether the policies used by Singapore are likely or unlikely to cause such conflicts

**What are some possible macroeconomic goals that might conflict with the goal of raising economic growth?**

- Short run growth vs inflation
- SR growth vs BOP (via BOT, CA)
- LR growth vs BOP (via BOT, CA)

**What policies can cause such macroeconomic conflicts and why?**

- Short run growth vs inflation
  - Expansionary MP (depreciation) and FP ( $\uparrow G$  or/ &  $\downarrow$  taxes to spur C & I)  $\rightarrow \uparrow AD \rightarrow \uparrow SR$  growth but  $\uparrow$  inflation
- SR growth vs BOP (via BOT, current account of BOP)
  - Expansionary MP and FP  $\rightarrow \uparrow AD \rightarrow \uparrow SR$  growth but  $\uparrow Y \rightarrow \uparrow M \rightarrow \downarrow BOT \rightarrow \downarrow$  current account  $\rightarrow \downarrow BOP$
- LR growth vs BOP (via BOT, current account of BOP)
  - $\uparrow$  Import of K goods  $\rightarrow \uparrow$  capital accumulation  $\rightarrow$  LRAS shift right  $\rightarrow \uparrow LR$  growth but  $\rightarrow \uparrow M \rightarrow \downarrow BOT \rightarrow \downarrow$  current account  $\rightarrow \downarrow BOP$

**What policies may not cause such macroeconomic conflicts and why?**

- Short run growth vs inflation
  - SS sides polices: e.g. wage subsidies  $\rightarrow \downarrow$  cost of production  $\rightarrow \uparrow SRAS$  (shift down)  $\rightarrow \uparrow$  real output and  $\downarrow GPL \Rightarrow \uparrow SR$  growth and  $\downarrow$  inflation
- SR growth vs BOP (via BOT, current account of BOP)
  - SS sides polices: e.g. wage subsidies  $\rightarrow \downarrow$  cost of production  $\rightarrow \uparrow SRAS$  (shift down)  $\rightarrow \uparrow$  real output and  $\downarrow GPL$
  - $\downarrow GPL \Rightarrow \downarrow P_x$  in local and foreign currency  $\rightarrow \uparrow Q_x \rightarrow$  assuming  $PED_x > 1 \rightarrow \% \uparrow Q_x > \% \downarrow P_x$  (in local currency)  $\rightarrow \uparrow (P_x Q_x) \rightarrow \uparrow BOT \rightarrow \uparrow$  current account  $\rightarrow \uparrow BOP$
- LR growth vs BOP (via BOT, current account of BOP)
  - $\uparrow$  Import of K goods  $\rightarrow \uparrow$  capital accumulation  $\rightarrow$  LRAS shift right  $\rightarrow \uparrow LR$  growth but if K goods is used to produce X  $\rightarrow \uparrow X \rightarrow \uparrow BOT \rightarrow \uparrow$  current account  $\rightarrow \uparrow BOP$

**Are the policies aimed at increasing economic growth overall more or less likely to cause macroeconomic conflicts for the Singapore economy?**

- Due to a small multiplier (elaborate with more details), it is less common for Singapore to use domestic DD management to fight recession but instead uses SR SS-side  $\Rightarrow$  no conflict between SR growth and inflation or BOP
- Also, as Singapore is highly export-oriented due to its small domestic market, much of imports of capital goods is meant for export-oriented firms  $\rightarrow$  no conflict between LR growth and BOP as well
- Finally, as Singapore has been running current account surpluses and experience generally low inflation for more than 3 decades while experience strong and sustained economic growth throughout,
- This shows that the policies employed by Singapore to achieve economic growth have not caused much difficulties for the economy.



## N2018 Suggested Case Study Answers

### Question 1: Policies for health improvement

(a)	(i)	<b>Using the information in Extract 1, calculate the value of the price elasticity of demand for sugar-sweetened beverages (SSBs). [2]</b>
		<p>PED = %change in quantity demanded / %change in price</p> <p>PED = 0.024 / 0.02</p> <p>PED = 1.2 (ignoring negative sign)</p>
	(ii)	<b>Explain one possible factor that could lead to this value. [2]</b>
		<p>Demand is price elastic, an increase in price leads to a more than proportional change in quantity demanded. We can justify using</p> <p>Proportion of income: High proportion of income is spent on SSBs by younger consumers or low income households</p> <p>OR</p> <p>Availability of substitutes (non-sweetened drinks / water): When the price of SSB increase, it is easy for consumers to switch to other goods that satisfy the same needs, such as plain water and milk</p> <p>OR</p> <p>Degree of necessity (low): SSB is not an essential purchase</p>
(b)	(i)	<b>State the economic concept you would use to measure the relationship between the change in the price of SSBs as sales taxes are imposed and the resulting change in the demand for bottled water. [1]</b>
		Cross elasticity of demand
	(ii)	<b>Explain the value you would expect to get from this measurement. [3]</b>
		<ul style="list-style-type: none"> <li>• Definition of CED [1] Extract 2 2<sup>nd</sup> paragraph "Sales of taxed SSBs...fell by an average of 6% in 2014... purchases of water and non-taxed beverages increased by about 4% on average."</li> <li>• From the above case evidence, one can deduce that the value is likely to be positive as these 2 goods are substitutes for one another (which means when price of SSBs increase, demand for bottled water increases. [1]</li> <li>• As for the value of the CED, it is likely to be less than 1 since the evidence shows that when you tax the SSBs, sales fell by 6% but it only led to an increase of 4% of non-taxed beverages and water. This may be evidence that these alternative products are not close substitutes to SSBs. [1]</li> </ul>

(c)	<b>Explain any two economic reasons why producers decide to spend millions to strengthen brands and differentiate their products. (Extract 2). [4]</b>
	<p>Any 2 of the following 3 reasons:</p> <ul style="list-style-type: none"> <li>• Influence taste and preferences leading to increase demand leading to increase TR, increasing profitability</li> <li>• They could also make product less substitutable, reducing PED value. This gives firms' greater ability to increase price. The subsequent increase in TR, together with the lower cost of production as quantity demand falls, will increase profitability</li> <li>• Differentiation could also make product less substitutable, reducing CED value, rivals' pricing will affect them less.</li> </ul>
(d)	<b>Discuss whether consumers could ever make rational decisions regarding their consumption of SSBs. [8]</b>
	<p><b>Introduction</b></p> <p>In a consumer's rational decision making, he/she would seek to maximize total utility. Such determinants would be related to what allows the consumer to maximise utility. Consumer would consume based on where his/her marginal costs = marginal benefits</p> <p><b>Body</b></p> <p><u>Thesis: Consumers could make rational decisions by considering marginal benefits vs marginal costs</u></p> <p>Marginal benefit for consuming SSB</p> <ul style="list-style-type: none"> <li>- Enjoyment of drink (utility)</li> <li>- In Mexico, (Extract 2) the lack of clean drinking water from taps means that you are less likely to fall ill if you consume SSB instead.</li> </ul> <p>Marginal cost for consuming SSB</p> <ul style="list-style-type: none"> <li>- Possible impacts on health (possible weight gain, tooth decay etc)</li> <li>- Cost of drink (Price)</li> </ul> <p>In a world where there were no information failure and consumers all behaved rationally, they could make rational decisions. Elaborate on <math>PMC = PMB</math> leading to <math>SMC = SMB</math>. This will be especially significant for Mexicans where the PMB for drinking SSBs are higher due to lack of clean drinking water as substitutes.</p> <p><u>Anti-thesis: Consumers might not make rational decisions regarding SSB consumption</u></p> <p>Possible information failure</p> <p>However, information failure means that consumers may not have immediate information on the possible impacts on their health to make a rational decision at point of purchase. "Marketing and advertising products are very powerful influences on consumer demand. Individual choice is very much dependent on marketing." (Extract 2, para 3)</p> <p>Illustrate and analyse with imperfect information diagram showing overconsumption (<math>Q_m &gt; Q_m'</math>), with divergence between perceived and actual PMB,</p> <p><b>Conclusion</b></p> <p>Even though imperfect information may lead to overconsumption of SSBs, that can also be considered a rational decision because the consumer was making a decision that takes into account the information that he/she has at that point. The consumer does not need to care about social efficiency, in order to be rational. This is especially important in developing countries like Mexico, who lacks clean drinking water from taps. There is no point worrying about the long term impact that SSB may cause to their health when they are more likely to fall ill in the short term if they were to drink from the tap instead.</p>

(e)	<p><b>Discuss whether fiscal intervention is the best government policy to deal with the problems caused by over-consumption of SSBs. [10]</b></p>
	<p><b><u>Introduction</u></b>  From Extract 1, problems that can emerge from overconsumption of SSB is obesity and the resulting diseases of diabetes and heart diseases. Fiscal intervention is defined by the use of taxes and subsidies to correct market failures. I will be discussing whether fiscal intervention, or other policies might be better at dealing with the problems of overconsumption.</p> <p><b><u>Body</u></b></p> <p><b><u>Taxes</u></b></p> <ul style="list-style-type: none"> <li>- From extract 1, "As taxes increase, the purchase price of certain foods increases and consumers thus reduce their purchases. As a consequence, industry may produce less of the food in question."</li> </ul> <p>Economic analysis: Taxes levied on firms producing SSBs would increase the cost of production, firms, which would also lead to increase in prices. Facing higher prices, consumers would reduce their quantity demanded of SSBs, reducing the overconsumption.</p> <p>Discussion:</p> <ul style="list-style-type: none"> <li>- Benefits  From extract 1 paragraph 4 and 5, two main advantages of taxes are that the demand for SSB is very price elastic, so any price increase brought by taxes will lead to a more than proportional decrease in quantity demanded.</li> </ul> <p>Furthermore, the revenue generated from the taxes could be used to fund healthy living promotional campaigns. Extract 3 indicated that a sugar tax in UK might raise an estimated 520 million pounds annually. For countries without safe drinking water from taps, such tax revenue is also used to provide drinking water fountains in schools in Mexico (extract 2)</p> <ul style="list-style-type: none"> <li>- Costs  From extract 3, a tax will lead to possible job losses in various UK businesses, such as convenience stores, vending machine operators and pubs. Furthermore, it might also lead to job losses along the entire SSB supply chain, sugar farmers, manufacturers and so on. Oxford economics estimated a loss of more than 4000 jobs across UK and a decline in GDP by 132 million pounds.</li> </ul> <p><b><u>Subsidies</u></b> (<i>Healthier substitutes to SSBs such as fruits vegetables and other healthy foods</i>)</p> <ul style="list-style-type: none"> <li>- Explain how subsidies would encourage lower prices &amp; increased consumption of healthy dietary choices.</li> <li>- The economic principle is cross elasticity of demand. Explain relationship between healthy dietary choices vs sugary drinks as substitutes.</li> <li>- Lower price of healthy dietary choices will reduce demand for sugary drinks</li> </ul> <p>Illustrate with a diagram of how a fall in demand for sugary drinks will lead to consumption to fall closer to <math>Q_s</math>, reducing market failure</p>

Discussion:

- How close is the CED relationship between the two?
- Hard to control how much demand for sugary drinks will fall by
- Does the government suffer from information failure?

For example, is the government really keenly aware of what are considered to be 'healthy dietary choices' and those are the alternatives that the government would want to encourage?  
Example drinks with alternative sugar

### **Non-Fiscal Intervention solutions**

#### ***Education campaigns***

- Addresses imperfect information but not negative externalities
- Hard to reach target crowd

Limitation: Mind-sets hard to change (if people are already addicted and used to drinking)

#### ***Regulation***

- Extract 2 showed that marketing and advertising campaigns have very powerful impact on consumer demand. Regulations could be set to ban such advertisements or to limit the extent to which firms could advertise.

Limitations: Enforcement issues, possible loss of jobs similar to taxes.

### **Conclusion**

If governments believe that the **root cause of the overconsumption** of SSB is really due to imperfect information, then fiscal intervention may not be the best policies to correct this overconsumption. Non fiscal intervention, for example, public education, would be better suited for correcting the issue of information failure.

Nevertheless, all such policies would **create unemployment in local industries**. A country like the UK may suffer from higher unemployment but countries like Singapore, where SSBs are mostly imported, the loss of jobs may be less significant. Furthermore, unless workers are totally immobile across industries, tax policies can be formulated with sufficient time lag, for example 2 years (Extract 3 paragraph 4), thus ensuring that workers who may lose jobs in firms belonging to the SSB industries to have sufficient time to move to another industry.

Thus, I believe that the government should have a combination of fiscal policies and suitable public education and regulation of SSB firms, to tackle the problems of overconsumption.

## Question 2: Bangladesh's quest for inclusive economic growth

(a)	(i)	<b>State what happened to the nominal exchange rate of the Taka (Bangladesh's currency) between 2000 and 2014. [1]</b>
		Depreciated.
	(ii)	<b>Explain whether you would expect the change in the current account balance to lead to the change in the value of the Taka shown. [2]</b>
		Current account balance for Bangladesh improved from deficit to a surplus. An improvement means inflow > outflow. Hence this improvement will lead to an increase in the demand for Taka and Taka should appreciate. Hence the depreciation of Taka is not expected from the improvement in Bangladesh's current account balance.
	(iii)	<b>What can be inferred from the change in the Gini coefficient for Bangladesh? [2]</b>
		The gini coefficient has decreased slightly from 2000 to 2014. The higher the Gini coefficient, the more unequal the income distribution. Hence, the lower coefficient implies the income distribution in Bangladesh has become more equally distributed.
(b)		<b>Explain why a new road network in a country should not be classified as a public good. [3]</b>
		<p>Non-excludability means that it is impossible to exclude non-payers from consuming a good once it is produced. For the road network, it is possible to use tolls to exclude non-payers from using it. [1]</p> <p>Non-rivalry means the consumption of a good by one does not diminish the amount available to others. For the road network, its use by one vehicle would reduce the amount of space available for another vehicle and hence it rivalrous in consumption. [1]</p> <p>Hence a new road network in a country should not be classified as a public good. [1]</p>
(c)		<b>Explain one possible reason for the difference in values of income elasticity of demand for electricity in Bangladesh and Australia. [4]</b>
		<p>Income elasticity of demand (YED) measures the responsiveness of demand for a good to changes in consumers' income, ceteris paribus.</p> <p><b><u>Difference in values [1]</u></b>  From Table 2, YED for electricity in Bangladesh (1.91) is higher than that in Australia (0.60).</p> <p><b><u>Reasoning + Interpretation [3]</u></b>  YED for electricity is higher in Bangladesh as the <i>Extract 5 states that "demand for electricity had been rising rapidly along with growth in per capita income"</i> [1]. Hence this could account for the more than proportionate increase in demand [1] for electricity as incomes grew in Bangladesh, seen in the income elastic YED value of 1.91 in Table 2, which is greater than 1.</p> <p>YED for electricity is lower in Australia as seen in the income inelastic YED value of 0.60 in Table 2, which is less than 1. Hence there is a less than proportionate increase in demand for electricity as incomes increase in Australia. [1]</p> <p>OR</p>

	<p>Since YED is <math>&gt; 1</math> in Bangladesh, it is treated as a luxury good, (where demand increases more than proportionately when incomes increase). [1]</p> <p><u>Evidence 1</u> Electricity is a luxury good in Bangladesh as Extract 5 states that <i>"The electricity connection fee for a household ... is equivalent to about 5 or 6 months of the average household income of a poor person in Dhaka"</i>. [1]</p> <p><u>Or Evidence 2</u> With a rough estimated population of 160 million (from Table 1), of which a high percentage of <i>"50 million ... continue to live below the poverty line"</i> (Extract 1), this implies that the average person in Bangladesh would find electricity a luxury good as just getting electricity access itself is costly.[1]</p> <p>However, it is a necessity in Australia as its YED is <math>&lt; 1</math>, (implying its demand increases less than proportionately when incomes increase). [1]</p>
(d)	<p><b>Both Bangladesh and Singapore invest in infrastructure projects.</b></p> <p><b>Discuss how such spending may have different impacts on aggregate demand in these two countries. [8]</b></p>
	<p>Infrastructure projects investment refers to government spending on infrastructure that will increase the AD of both countries, Bangladesh and Singapore. The impacts would differ in context of productivity improvement, size of multiplier, size of debt, etc.</p> <p>For example, in Extract 5, it was mentioned that better transport infrastructure can “create opportunities for growth and poverty reduction and access to education and health services”. So when government invest in infrastructure, it will lead to a rise in AD. Also, “electricity is an important input to production in manufacturing, etc and frequent power cuts had emerged and remained a binding constraint on productivity and expansion of business”. Costs of production may be lowered and country may be able to attract more foreign direct investments (FDI) which leads to increase in AD. The lower cost of production may also lead to lower export prices and hence enhancing the price competitiveness and hence increases total export revenue and AD.</p> <p>[Draw diagram show how AD has increase.]</p> <div> </div> <p>As seen from the diagram, investment in infrastructure projects will cause AD to increase from AD<sub>0</sub> to AD<sub>1</sub>, leading to increase in national income from Y<sub>0</sub> to Y<sub>1</sub>. The initial increase in income is due to increase in AD will induce consumption by recipients of the income. As one's spending generates income for the next person will increase AD further increase AD by a multiple of the initial rise due to multiplier effect. [Explain the effect of multiplier.]</p>

### Reasons impact differs between the countries

#### **Extent of increase in G and implications of government debt:**

Bangladesh's debt has been increasing from US\$2058 million in 2000 reaching US\$5342 million in 2014 (Table 1). This implies that the extent of the increase in government spending may be limited unless Bangladesh borrows in order to finance her infrastructure spending. This may in turn crowd out investments and consumption (crowding-out effect) even as interest rates rise due to the limited availability of loanable funds. The fall in C and I may counter the rise in G and hence limit the rise in AD for Bangladesh.

On the other hand, due to her prudent spending over the years, Singapore has accumulated sufficient reserves that may be used to finance budget deficits, without the need to borrow and hence may not experience crowding-out effect and hence the rise in AD may be more significant.

#### **Multiplier size:**

The small multiplier size of Singapore may limit the rise in AD due to infrastructure projects spending. The small multiplier is due to her high leakages in terms of savings and imports, due to her high dependence on imports (lack of natural resources) and her mandatory CPF savings scheme. Hence the small multiplier would cause a small increase in AD.

On the other hand, Extract 4 mentions that around 50 million people (out of approximately 160 million) live below the poverty line. This implies that the MPS may be small for Bangladesh as basic necessities have to be purchased before there is any income left for savings. Hence the multiplier size for Bangladesh is likely to be larger than that of Singapore.

In conclusion, government spending in infrastructure projects will **increase AD** for both Bangladesh and Singapore however it may be **higher for Bangladesh due to its larger multiplier size but limited by the government's ability to finance such spending**. In addition, given that infrastructure in Bangladesh is less developed compared to Singapore, it is likely to have a larger impact on Bangladesh's AD more than Singapore's AD.

(e) **Discuss whether supply-side policies are the most appropriate policies to achieve inclusive economic growth in Bangladesh. [10]**

Thesis	Anti-thesis
Explain how supply-side policies help achieve inclusive growth in Bangladesh	Explain how alternative policies (demand-management policies) can be used to achieve inclusive growth in Bangladesh
Explain limitations of supply-side policies	Explain limitations of using these alternative policies
Synthesis: State stand on whether supply-side policies is the most appropriate policy Justify your stand	

**Define inclusive growth:** A rate of growth that is sustained over a period of time. It is broad-based across economic sectors and creates productive employment opportunities for the majority of the country's population.



### Explain how SSPs help achieve inclusive growth

- Investments in infrastructure, such as water, transport and electricity, and ensuring equal access to them (Extract 5).
- Increases social capital will increase productive capacity which in turn increases LRAS
- Use *AD-AS diagram* to illustrate the increases RNI from  $Y_0$  to  $Y_1$ , and  $Y_f$  from  $Y_{f0}$  to  $Y_{f1}$
- "...these assets create opportunities for growth and help lift people out of poverty." For instance, transport connectivity improves access to education and health services. This increases human capital (productivity) resulting in better opportunities in terms of better jobs and higher wages.

#### **Limitations:**

- SSPs take a long time to show results and may not be effective in the short-run (time lag)
- Limited fiscal ability of Bangladesh govt. to invest in infrastructure (negative fiscal balance from Table 1)

### Explain how alternative policies (demand-management policies) can help achieve inclusive growth

- Increase income and corporate taxes for the top "1% (that) makes up this privileged class" (Extract 1)
- Revenue earned from the higher income tax on the top income earners can then be used to create "opportunities (for all) to reap the benefits of economic growth" (Extract 1)

#### **Unintended consequences:**

- There may be an adverse impact on economic growth as higher taxes reduce their disposable income and after-tax profits. This reduces consumption and investment, which *ceteris paribus* will lead to a fall in AD resulting in slower or negative growth.

### Synthesis

**SSPs are arguably the most appropriate policy** especially given the state of infrastructure in Bangladesh which has hindered access to "productive assets" from many communities in Bangladesh. Hence, improvements in access to water, transport and electricity is likely to significantly improve inclusive growth.

Given that the government's fiscal position doesn't seem to be strong, it may be difficult to implement supply side policies. Hence, **it needs to be supplemented with increasing taxes** for the high income earners to fund these policies.

### TYS 2018 Essay Question 1

The average price of tickets for two concerts performed by singer-song writer Ed Sheeran in November 2017 at the Singapore Indoor Stadium was S\$180. Tickets went on sale six months earlier and both concerts sold out almost immediately. Some tickets were later being offered for resale at prices well above face value.

- (a) Using supply and demand curves, explain why there is an excess demand for tickets and why there is a high resale price. [10]
- (b) Discuss possible strategies that concert organisers could use to improve the market outcome for this type of concert for producers and consumers. [15]

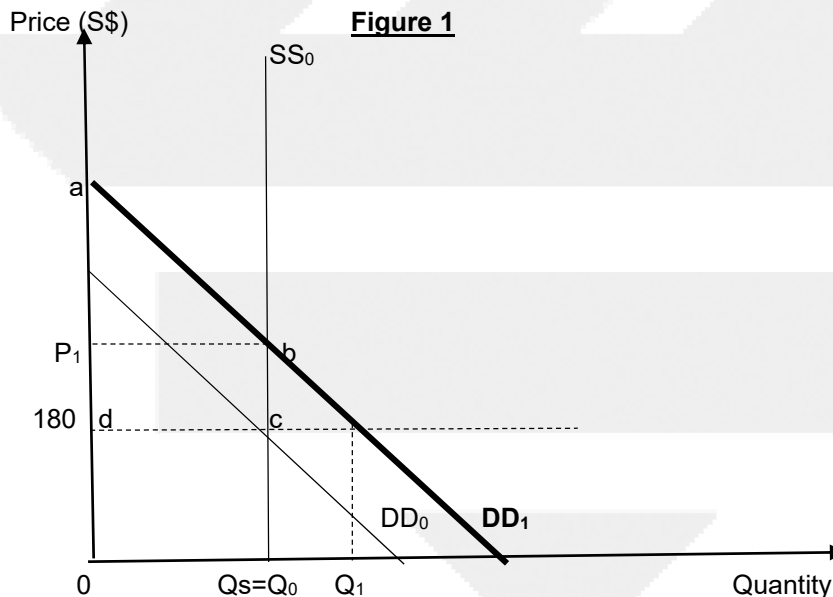
#### Suggested answers to Part (a)

##### Introduction

- “Excess demand” is a situation of **shortage when concert ticket is priced below equilibrium price**.
- It could be due to the organizer **underestimated the demand and a fixed supply** of seats/seating capacity in the stadium.

##### Body

- Assume the seating capacity of the Indoor Stadium is fixed at  $Q_s$  which means a perfectly inelastic supply of  $SS_0$  and the estimated demand is  $DD_0$ . The price is S\$180 when  $Q_s = Q_0$ .



- However, the concert tickets were fully sold almost immediately and there was resale of tickets at a much higher price. This implies that there was **insufficient supply to meet a much higher demand than expected**.
- **Reasons for excess demand/shortage ( $Q_s > Q_d$  or  $Q_1 > Q_0$ ):**
- **Higher demand than expected (give any 2 factors):**
  1. **Taste and preference** factor – Ed Sheeran was more popular than what the organizer anticipated.
  2. **Speculative demand** – influx of scalpers trying to profit by buying in large quantities and resell at a higher price.

3. **Income factor** – There might be strong income growth in 2017 – concerts are luxury goods in which income elasticity of demand is greater than 1 (define and elaborate) and thus a rise in income will trigger a more than proportionate increase in demand.
- **Fixed + perfectly inelastic supply:** All the seats in the Indoor Stadium were sold and could not be increased – supply could not be increased to respond to higher demand could result in a significant increase in price to  $P_1$ .
  - Demand was at  $DD_1$  instead of  $DD_0$  resulted in a shortage (excess demand) of  $Q_s - Q_1$  at S\$180. Thus some tickets were being resold at higher than S\$180, any price  $> \$180$  and equal  $P_1$  in a secondary (resale) market.

**Note:**

- Analysis of PED is not included as it is irrelevant to the question since it is not about the size of the shortage and SS does not change/shift.
- Examiner's report mentioned stronger candidates drew another diagram to show the equilibrium price in the **secondary (resale) market** to be well above the average ticket price. But basically it is another diagram that shows a high demand cutting supply at a very high price.

**Part (b)****Introduction**

Having excess demand or shortage is an undesirable outcome for both concert organiser and consumers:

- Emergence of a black market means the organizer could have **priced the tickets higher or increased the number of concerts/tickets (chose a bigger venue) to earn more revenue**.
- At the same time, genuine concert goers suffered from scalping when they bought tickets in the black market at a very high resale price which resulted in a **loss in consumer surplus** – the difference between what they are willing and able to pay and S\$180. Referring to Figure 1, the consumer surplus falls from area abcd to  $abP_1$ .

**Body (Possible Strategies to improve market outcomes for producers and consumers – first 3 are recommended)**

**1. Increase supply of concerts/tickets + sell tickets by stages to better gauge supply**

How it works	But
<ul style="list-style-type: none"> <li>• Organiser could have more runs of the same concert, e.g. adding a matinee or additional concert on another day – increase supply to meet demand.</li> <li>• Referring to Figure 1, when supply is increased from <math>SS_0</math> (<math>Q_0</math>) to <math>Q_1</math> to meet <math>DD_0</math>, price will remain at S\$180 and there will be no shortage/excess demand and consumers will not suffer from scalping. Besides, total revenue for concert organiser will rise from <math>S\\$180 \times Q_0</math> to <math>S\\$180 \times Q_1</math>.</li> </ul>	<ul style="list-style-type: none"> <li>• Concerns: The venue / singer may not be available, having two concerts in a day might be too strenuous to the singer.</li> <li>• Organiser might risk having excess seats and insufficient revenue to cover the extra costs for the additional concert.</li> </ul>
<ul style="list-style-type: none"> <li>• Organiser could still work with the fixed supply of seats but instead of selling all at the same time at a certain price, he/she could instead sell them by stages and adjust the price according to the demand.</li> <li>• E.g. Add mobile seats to the area nearing to the stage and charge a high price when demand is strong. Or the better view seats (facing the stage) are first sold. And if they are indeed snapped up fast, organizer could open the side or back view or seats further away from the stage. If demand is strong, even with a worse view, tickets will be snapped up and organizer has more revenue and consumers can attend their concerts which is a win-win situation.</li> </ul>	<ul style="list-style-type: none"> <li>• This means that organiser has to choose a venue that gives the flexibility to 'reduce' or 'add' seats. The latter might mean a bigger place and probably higher rental.</li> </ul>

**2. Raising Price to  $P_1$** 

How it works	But
<ul style="list-style-type: none"> <li>Excess demand results from <math>S\\$180 &lt;</math> market equilibrium.</li> <li>So the solution is to increase price to where <math>SS_0=DD_1</math> at <math>P_1</math>. And revenue will increase from <math>0dcQ_0</math> to <math>0P_1bQ_0</math>.</li> </ul>	<ul style="list-style-type: none"> <li>However, consumers are still paying a higher price.</li> <li>It is still difficult to assess the correct price that eliminates the shortages due to lack of information on demand.</li> <li>An excessively high price can lead to unsold seats. Generally, organisers are more risk averse in pricing and prefer a guaranteed sell-out concert over the uncertainty of potentially over-valued tickets.</li> <li>It is also unlikely for the organiser to raise price after it has started selling at a lower price which it marketed.</li> </ul>

**3. Prevent Scalping / Resale**

How it works	But
<ul style="list-style-type: none"> <li>Particulars of concert goes such as name and birthday could be printed in the tickets</li> <li>Limit the maximum number of tickets each consumer could buy</li> </ul>	<ul style="list-style-type: none"> <li>This could incur higher administrative costs be it the issuing of tickets or the need to have more manpower at check-points for entering the concert.</li> </ul>

**4. Practice of price discrimination (assume it is not being practised)**

How it works	But
<ul style="list-style-type: none"> <li>Practice of price discrimination (define) could be used to increase revenue + high price for those with <math>PED &lt; 1</math> and lower price for those with <math>PED &gt; 1</math>. Explain in greater details the main conditions (monopoly power – sole organiser, no seepage) and how it works.</li> <li>Price discrimination is a common practice by concerts organisers and it will indeed raise revenue as long as they could estimate DD and PED as accurate as possible and segregate the consumers/markets well. Consumers with <math>PED &gt; 1</math> are being crossed subsidized by those with <math>PED &lt; 1</math>.</li> </ul> <p><b>Note:</b> There is no seepage as those consumers who want a better view of the concert will not be attracted to buy cheaper tickets of rear seats.</p>	<ul style="list-style-type: none"> <li>Estimating demand is tough and with price discrimination, organisers have to segregate the markets and estimate the different PED to price 'correctly'. This could be proven tougher as information collected could turn obsolete quickly.</li> </ul>

**Note:** Some might take that the word 'average' means price discrimination is already being practised and it does not solve the problem of shortage or scalping. Then the answers will be tweaked to better segregate the markets especially the market with  $PED < 1$  and price it higher.

**Conclusion / Evaluation (examine the severity of concerns to justify whether the above are good strategies and which is better/best)**

- Resale or black market could be controlled if particulars are to be registered and number of tickets per consumer is restricted. Though some administrative costs are incurred, it is most likely to be negligible compared to other fixed costs such as paychecks to the singer/crew and rental of the stadium but it might not be in the organisers' interests as it only eats into their profits. In fact, some singers who care for their fans are the ones who might request their organisers to do so if scalping has proven to be a pertinent problem.
- Instead of raising price for seats in the middle of the sale or increase number of concerts which might not be possible due to the unavailability of the venue or/and singer, it would be better for the organiser to sell tickets by stages. This will give the organiser a better gauge of demand and improve its pricing.
- Nonetheless, if possible, the most appropriate measure to earn more revenue and address scalping is to retain the flexibility to cater for more performance slots based on ticket sales. That means, choosing a venue that is available for additional concert(s) and sign a contract with the singer to be ready to add number of concerts. Thus selling the tickets early should be retained and once they are snapped up fast (high demand), the organiser could add another concert as both venue and singer are available. .
- And very importantly, organiser should have a very rigorous process to ensure their estimation of demand is correct so that the number of concerts/seating capacity and pricing would be as accurate as possible so as to maximize revenue/profits.
- While scalping definitely hurts consumers, the impact on organiser might not be significant. Organising a concert incurs mainly fixed costs and the cost of admitting another consumer is minimal and close to zero. Once all tickets are sold, the organiser has maximized its profits (profit maximization is  $MR=MC=0$ , =  $TR_{max}$ ) and he/she really does not have much incentive to solve the problem of scalping. As mentioned earlier, a guaranteed sell-out concert is better than over-valued tickets.
- In reality, it is the singer who is more concerned for his/her fans rather than the organiser. To prevent scalping, artistes can send strong messages to their fans not to buy from black market while having live streaming of their concerts which result in scalpers making losses. Such might prevent future scalping.

**Note:** Scalping is actually illegal and should be policed by the government but it is hard and costly to enforce and not much incentive for the government to do so.

**2018 A Levels Essay Question 2**

Competition amongst airlines within the air passenger market is high and demand is rising but many airports are at or near capacity. Both variable and fixed costs of production of passenger airlines continue to change over time. For example, airline jet fuel prices fell by 20.4% over the year ended 22 July 2016 while the price of passenger jet aircraft increased by around 1.1% between 2015 and 2016.

Using economic analysis, discuss how airlines would likely respond to these changes. [25]

Suggested answer:

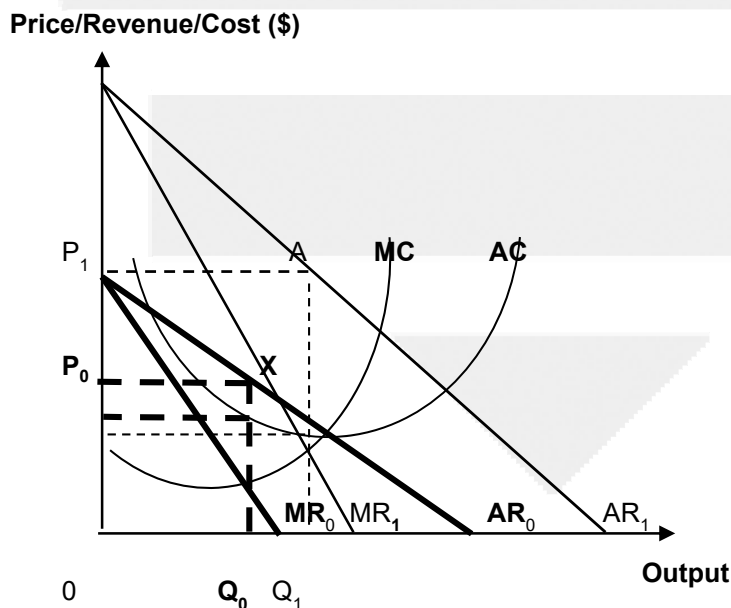
**Introduction**

- Identify market structure: Oligopoly
- Briefly interpret revenue/cost factors:
  - "Rising demand": higher revenue
  - "Airline jet fuel prices fell": fall in variable cost
  - "Price of passenger jet aircraft increased": rise in fixed cost
- This essay will examine how airlines would likely respond, either in a competitive or cooperative manner.

**Body****(1) Response to "rising demand"**

- Show rightward shifts of AR and MR in a firm diagram (Fig. 1)
- Response by airlines is therefore to **increase price from  $P_0$  to  $P_1$  and output from  $Q_0$  to  $Q_1$  i.e. number of flights**
- Explain how this leads to a rise in profits

**Fig. 1 An increase in supernormal profit when AR and MR increase**



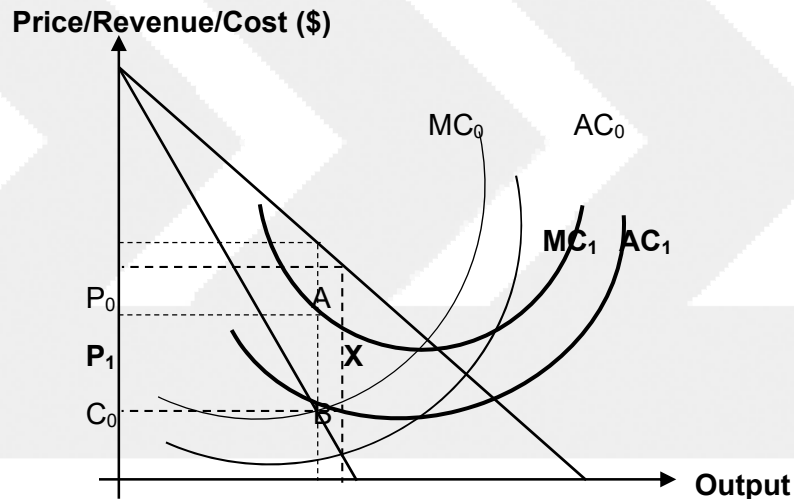
**Limitations of analysis:**

- However, their ability to increase output is limited by airport capacity.
  - o To overcome this, airlines can share berths by “code sharing” with other airlines e.g. Star Alliance
  - o Alternatively, airlines can try to bid for more berths in airports. They may however incur greater costs, and ceteris paribus, this may reduce their profits if rise in costs outweighs the increase in TR from the move.
  - o Other alternative strategies: **Product differentiation** such as further developing their in-flight services, or introducing loyalty programme such as reward for miles → to gain a larger market share.

**(2) Response to fall in jet fuel prices**

- Explain that jet fuel is a variable cost as it changes with output.
- Show downward shifts of both AC and MC in a firm diagram (Fig. 2)

**Fig 2: An increase in supernormal profit when variable cost decreases**



- The **theoretical** response by airlines is to **reduce price** and **increase output**.
- Explain how ceteris paribus, this leads to a rise in profits.

**Limitations of analysis:**

- However, given the oligopolistic market structure of the airline industry, when a firm lowers their ticket prices, **other firms are likely to follow suit to prevent loss of market share**. Hence, when firms lower the price of air tickets, **quantity demanded will only increase less than proportionately**. Therefore, it will experience a **fall in revenue**.
- Therefore, given the kinked demand theory, firms are likely to maintain their price levels as status quo.
- Instead airlines can resort to non-price competition such as better quality services to compete in terms of market share.

**Evaluative point:**

- However, if the fall in fuel prices of 20.4% is really significant, some airlines may lower their fares to gain greater market share (not so much for profits). If so, this may trigger a price war. Or at times, it may not be a price war but a situation where the price leader decreases their prices and other airlines follow. Budget airlines may also go ahead to reduce their fares.



**(3) Response to increase in price of aircraft**

- A 1.1% rise in cost can be significant since the price of new aircraft can be up to more than S\$100 million.
- (No need for diagram) As this is an increase in fixed cost, only AC will rise and profit will fall. There will be no change to price and output.
- However, as there are only several aircraft manufacturers (mainly Boeing, Airbus), and airlines do not have many options to turn to for cheaper aircrafts.
- Airlines may respond by either purchasing second hand aircrafts (especially budget carriers), or seek to cut costs in other areas (e.g. streamline cabin services) instead to maintain their profits.
- If the issue persists, consolidation may be considered in the longer term

**Synthesis and Conclusion**

- The changes in revenue and cost factors apply similarly to all airlines, so the impact on their price and profit is likely to be similar. As there is a rise in demand and a fall in fuel price, the price of air tickets is unlikely to change much, but there will be an increase in Q. Profit change will depend on whether rise in profit from the rise in demand and fall in fuel price outweighs the fall in profit from the increase in price of aircrafts.
- Compared to a scenario where profits are falling drastically, there is less incentive for airlines to compete. Instead, airlines may seek more to cooperate.
- Furthermore, oil prices fluctuate and may not continue to fall, while the price of aircrafts may not impact airlines immediately unless new aircrafts have to be purchased. In comparison, the limited capacity of airports is a problem that will more likely persist.
- Hence airlines are more likely to adopt a long-term strategy in sourcing for more fuel-efficient aircrafts, as well as finding ways to secure more berths at the airports.

**TYS 2018 Essay Question 3**

The proposed Cross Island MRT line would run through the Central Catchment Nature Reserve. An alternative route going round the reserve's southern edge would preserve Singapore's natural heritage and serve a much larger number of residents. The Land Transport Authority, LTA, says that the alternative route would entail longer travelling time, higher costs, more land acquisition and possibly bigger engineering challenges.

Source: *The Straits Times*, accessed 24 May 2017

- (a) Explain what needs to be considered when a government makes rational spending decisions about such projects. [10]
- (b) Discuss whether the government should proceed with the proposed alternative route for the Cross Island MRT. [15]

**Part (a) Suggested answers:**

In order for the government to achieve its objective of maximising societal welfare, the decision making model can be used. The economic decision-making process requires several considerations:

<b>Constraints</b>	Due to the fundamental economic problem of scarcity, choices have to be made. The government has to consider the constraints they are currently experiencing because this will determine the choices available for them. Based on these choices, the government will decide on the best-ranked choice that enables them to maximise their self-interest/ achieve their objectives.
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<b>Costs and benefits</b>	<p>The government has to consider the:</p> <ol style="list-style-type: none"> <li>Monetary and non-monetary costs and benefits of every available choice when making their decision.</li> <li>Opportunity cost – the value of the next best alternative foregone must also be considered.</li> </ol> <p>Decide on the choice which offers the <u>maximum net benefits</u></p>
<b>Information</b>	The government has to gather information, both quantitative and qualitative, of every available choice.
<b>Perspectives</b>	The government will have to consider the perspectives of consumers and producers who may be affected by their decisions as the subsequent reaction of those affected may affect the intended outcome of the decision made.
<b>Intended consequences</b>	The government will have to consider the expected outcomes of the decision in resolving the economic issue, which include the benefits for both the individual and/or societal level, assuming that rational behaviour and economic conditions remain unchanged.
<b>Unintended consequences</b>	<p>The government will have to consider the outcomes that are not intended in the economic decision. These may occur because the government may not have made their decisions under perfect information, due to imperfect information or consider all perspectives, especially when local and global conditions are subject to constant and unpredictable changes.</p> <p>When unintended consequences occur, the economic decision-making process is made more complex. Economic decisions may have to factor in measures to manage any adverse impact of these consequences or decisions made may have to be changed to mitigate any adverse impact of unintended consequences. As such, in order to maximise their self-interests, the government would have to review their decisions when the intended outcomes are not achieved or when there are adverse unintended consequences.</p>
<b>Changes</b>	The aims, constraints, costs, benefits, information and perspectives of economic agents can change over time. When changes occur, the economic decision undertaken by the government may no longer be optimal, calling for the need for the decision-making process to be revisited to ensure that the intended outcomes can be achieved

**Part (b) Suggested answers:**

**INTRODUCTION**

This essay aims to discuss whether the government should proceed with the proposed alternative route for the Cross Island MRT by taking into consideration the benefits and costs and intended and unintended consequences of doing so.

**BODY**

**Possible Benefits**

The alternative route would “preserve Singapore’s natural heritage and serve a much larger number of residents”.

- Elaborate on how this might lead to an improvement in the SOL (both material and non-material aspects) due to cleaner air, greater greeneries, less congestion and less pollution leading to more productive workforce (and greater tourism) when more people travelled by MRT rather than private vehicles.

- Elaborate on how this might increase the welfare of residents by providing greater convenience and connectivity in travelling and having a cheap form of transportation.
- Elaborate on how this might make the business more viable for the MRT service providers with greater ridership.

### **Possible Costs**

The alternative route would “entail longer travelling time, higher costs, more land acquisition and possibly bigger engineering challenges”.

- Elaborate on how this might lead to higher monetary costs (due to land acquisition and bigger engineering challenges – need to hire more specialists, build more complex structure, etc.)
- Elaborate on how the higher costs incurred might result in higher opportunity costs. Less budget available that could have been better utilised in other areas e.g. healthcare and education leading to undesirable outcomes in these areas.

### **Possible Intended Consequences**

Singapore’s natural heritage will be preserved leading to a greener environment, hence increasing the welfare/ standard of living of society. If more residents switch from private vehicles to travelling on public transport, resources will be allocated more efficiently too (less EMC due to less congestion and pollution). Workers’ health and productivity will increase too, helping the country achieve sustainable growth in the longer term.

### **Possible Unintended Consequences**

#### **Positive:**

- Elaborate on how this might win more political votes from the affected residents and environmentalists.

#### **Negative:**

- Elaborate on how the land acquisition might create greater unhappiness on the ground (i.e. less political votes).
- There might be greater environmental damage and higher than expected costs due to the bigger engineering challenges and demolition of existing buildings.
- The expected ridership might be lower hence there is little impact on overall congestion situation and longer than expected time taken to recoup the costs (under the contracting model), and widespread unhappiness if the fares charged are higher due to higher monetary costs.

### **EVALUATIVE CONCLUSION**

Based on the above analysis, the net benefits of proceeding with the proposed alternative route seem higher, especially given that society has become more environmentally conscious due to recent climate changes. Moreover, given that the main objective of the government is to encourage more residents to take public transport to improve society welfare (due to better allocation of resources), the government should proceed with the proposed alternative route since it is expected to “serve a larger number of residents”.

Even though the monetary costs will be higher, the government has been running a healthy budget for many years and should have sufficient funds to finance this project without incurring high opportunity costs. The possibility of diverting funds from other essential development like education and healthcare should be low. Even if the unintended consequence of incurring much higher costs occurred due to the engineering challenges, the government should have sufficient reserves to turn to.

Should the ridership be lower than expected, the government could consider developing the areas around the Cross Island MRT tracks more to encourage more ridership. The possibility of losing political votes should be low since the proposed alternative route will benefit more stakeholders and the votes gained will probably outweigh the votes lost.

#### TYS 2018 Question 4

In April 2016, Singapore's Finance Minister Mr. Heng Swee Keat, announced that in the fiscal year 2016, total government expenditure is expected to be S\$5.0 billion (7.3%) higher than the previous year.

Source: Singapore Budget 2016, accessed 3 August 2016

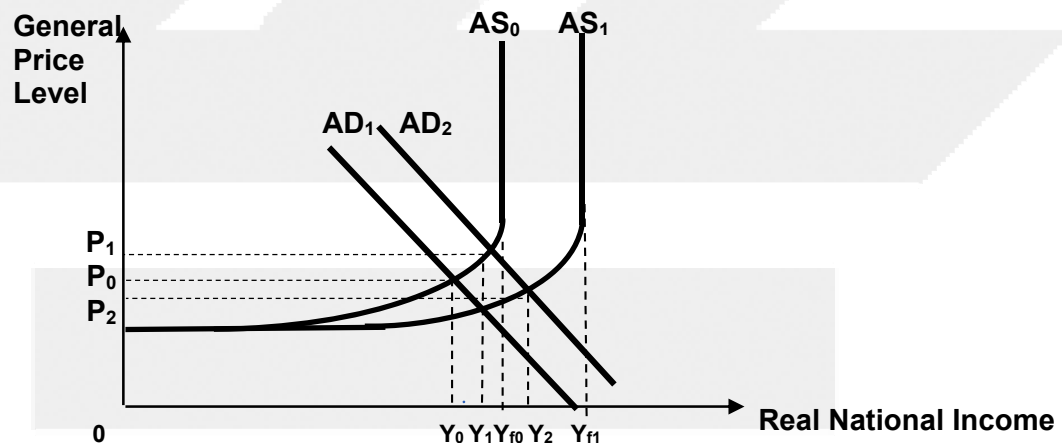
**Assess whether an increase in government expenditure, such as that announced in the 2016 budget, is likely to have a significant impact on Singapore's economic performance. [25]**

Suggested Answers

#### Introduction

An increase in government expenditure, such as that announced in the 2016 budget, will influence both aggregate demand (AD) and aggregate supply (AS). This essay will assess whether the changes in AD and AS as a result of an increase in government expenditure will have a significant impact on Singapore's economic performance – economic growth, price stability, unemployment rate, and balance of payment position.

#### Impact of government expenditure on the Singapore economy



	<u>Increase in AD</u>	<u>Increase in AS</u>
<b>Thesis:</b> <b>Explain the impact on Singapore's economic performance (4 macro goals)</b>	<ul style="list-style-type: none"> <li>Rise in government expenditure, such as in infrastructural projects, will increase AD and hence, real output via the multiplier effect.</li> <li>[Include succinct multiplier effect explanation]</li> <li>As a result, real output increases more than proportionately from <math>Y_0</math> to <math>Y_1</math>, resulting in <b>actual growth</b>.</li> </ul>	<ul style="list-style-type: none"> <li>Rise in government expenditure on supply-side policies (otherwise known as fiscal policy with a supply-side slant) will increase AS                             <ul style="list-style-type: none"> <li>e.g. automation support package and SkillsFuture schemes to increase labor and capital productivity → increases productivity capacity → increase AS from <math>AS_0</math> to <math>AS_1</math></li> </ul> </li> <li>Further increases real output from <math>Y_1</math> to <math>Y_2</math>, <b>increasing actual growth</b></li> </ul>

	<ul style="list-style-type: none"> <li>Given the rise in demand, firms would experience an unplanned fall in their inventory, signaling them to increase production. Hence, firms would hire more factor inputs, including labor, <b>reducing cyclical unemployment.</b></li> <li>However, this could <b>potentially worsen demand-pull inflation</b> when GPL increases from <math>P_0</math> to <math>P_1</math></li> </ul>	<ul style="list-style-type: none"> <li>Increase in full employment output level from <math>Y_f0</math> to <math>Y_f1</math>, <b>increasing potential growth</b></li> <li><b>Reduces demand-pull inflation</b> as GPL falls from <math>P_0</math> to <math>P_2</math></li> <li>When supply-side policies successfully raise productivity and reduce unit cost of production, the <b>price competitiveness of Singapore's exports would improve</b> and this would increase the quantity demanded of X more than proportionately (assuming <math>PED &gt; 1</math>), hence <b>raising export revenue → improve BOT</b> in the future</li> <li>Supply-side policies which raise productivity may also attract FDI into Singapore. This will also <b>improve her BOP.</b></li> <li>However, some of these policies such as spending on the automation support package to encourage firms to adopt more advanced labor-saving technology would displace lower-skilled workers. These workers lack the skills that are in higher demand in an increasingly knowledge-based economy. Coupled with the whole drive towards a Smart Nation, there could be a <b>growing mismatch of skills, worsening structural unemployment.</b></li> </ul>
<p><b>Anti-thesis:</b> Explain any possible reasons why the various impact on macro goals <i>may not</i> be significant</p>	<ul style="list-style-type: none"> <li>These effects may not be significant due to Singapore's <b>small multiplier size</b> (support with explanation on why Singapore's multiplier size is relatively small – high leakages via import spending due to lack of natural resources, as well as higher level of savings as a result of compulsory savings scheme (central provident fund))</li> <li>As a result, the <b>increase in AD may not be significant</b> and hence, the <b>impact on actual growth, cyclical unemployment, as well as demand-pull inflation may be significant.</b></li> </ul>	<ul style="list-style-type: none"> <li>Given that these SSPs generally take a long time to bear fruits in terms of higher productivity, the impacts on economic growth are probably only significant in the LR.</li> <li>The impact on structural unemployment may be significant in the SR given that “has an exceptional enabling environment for innovation and digital transformation, as well as a small geographical area, and modern and upgradeable infrastructure. This means that businesses can take advantage of innovations as they become available.</li> <li>However, there are policies in place to mitigate the skills mismatch such as the Professional Conversion Programmes (PCPs) which are career conversion programmes targeted at Professionals, Managers, Executives and Technicians (PMETs), including mid-career switchers, to undergo skills conversion and move into new occupations or sectors that have good prospects and opportunities for progression.</li> </ul>

**Synthesis**

Consider whether the overall impact on economic growth, price stability, unemployment and balance of payment is significant or not and justify with your reason:

- Impact on economic growth would be more significant if the increase in government expenditure is targeted on AS as the multiplier size of Singapore is relatively small, hence impact of rise in G that targets AD is unlikely to be significant. However, given growth is generated from the supply-side of the economy, the effects on actual growth is probably observable only in future.
- Given a concurrent rise in AD and AS, impact on demand-pull inflation is probably insignificant.
- The adoption of new technology in Singapore is likely to take place at a relatively rapid rate which is likely to aggravate the problem of structural unemployment in the SR. Moreover, policies such as retraining to equip workers who are displaced by labor-saving technology take time to bear fruit hence structural unemployment is likely to only be address in the long-run.

**TYS 2018 Question 5**

It was suggested by economists early in 2017 that world interest rates were likely to rise in the future.

(a) Explain why Singapore chooses exchange rates rather than interest rates as its main tool of monetary policy. [10]

(b) Discuss whether a rise in world interest rates would be of overall benefit to Singapore's economy. [15]

**Suggested Answer for part (a) - (refer to Chapter 7 lecture notes)**

<b>Why Singapore chooses Exchange Rate and not Interest Rate as the Monetary Tool</b>	
<b>(1) Why exchange rate</b>	<b>(2) Why not interest rate</b>
It has a <b>strong effect on Singapore's macroeconomic aims</b> given her small and open economy.	Impossible to control interest rate due to MAS' choice of <b>exchange rate and free capital flows</b> .

**Introduction**

- Singapore has a small and open economy which implies a small domestic market and one open to trade & capital flows. Monetary Policy aims to influence macroeconomic goals especially inflation and economic growth. She uses exchange rates rather than the conventional interest rate as a basis for monetary policy for primarily controlling inflation.

**Body****Why exchange rate?**

- Singapore's reliance on imports due to her resource scarce situation, has underscored her need to manage her exchange rates. This helps Singapore to import basic necessities and raw materials necessary for the production of exports to ensure (1) Singaporean households do not face excessively high inflation and (2) Singapore's exports does not experience a sudden loss in its competitiveness.
- Hence, MAS' exchange rate policy, which is a **gradual and modest appreciation of the Singapore dollar**, helps to counter imported inflation in way that does not erode the competitiveness of its exports too quickly, so that exporters can still maintain their competitiveness through gradual productivity improvements.

- A currency appreciation would imply that for one unit of Singapore dollar, Singapore consumers and firms are able to purchase more units of foreign currency. This would help to reduce the price of imports in Singapore dollars lowering the cost of production for firms who make use of imported raw materials. The SRAS increases while the general price level decreases. The currency appreciation thus helps to curb the effects of imported inflation and helps to achieve price stability.

### **Why not interest rates?**

- Adjusting interest rates will subject Singapore's exchange rate to volatility which in turn affects investors' confidence and thus may adversely affect her trade volume.
- A change in interest rate will result in short-term capital flows. This will have an adverse impact on Singapore's exchange rate.
- If the interest rate is adjusted frequently, Singapore's exchange rate will be very volatile and this is very detrimental to Singapore as she is an export-driven country and is also heavily dependent on imports for survival and raw material.
- Being an international financial centre, it is necessary for Singapore to have free capital mobility. Hence, by choosing to manage its exchange rate, this means that it is impossible for MAS to also control interest rates.
- For example, if the Singapore government were to increase interest rates, this would result in short-term capital inflow (i.e. hot money), which will raise the demand for the Singapore dollar (SGD) and put pressure on it to appreciate.
- To prevent a sudden and large erosion of Singapore's export competitiveness, MAS will need to intervene to prevent the SGD from appreciating beyond the upper boundary of the trading band by selling newly created SGD in the foreign exchange market.
- This extra SGD eventually flows back into the Singapore economy when the foreigners who bought the extra SGD deposit them into Singapore's banks or buys SGD denominated interest bearing assets (e.g. government and corporate bonds).
- Banks in Singapore now have additional cash which will be used to create more credit thus causing money supply to rise and hence interest rates to fall until the interest rate differential is restored back to its original level.
- Thus it is impossible for Singapore to set interest rate independently from the rest of the world and is thus considered as an interest-rate taker.
- Therefore interest rates in Singapore generally follow the interest rates of big economies like the US, Japan and the Eurozone.

### **Conclusion**

The nature of small and open economy of Singapore determines the monetary policy tool. When the sources of inflation is externally induced it would be better to use exchange rate policy as compared to interest rate policy which focuses on the changes in the larger domestic economy.



**Part (b) Suggested Answer****Introduction**

- With higher world interest rates, Singapore's stance as an interest rate taker (as analysed in part a) will result in higher interest rates in Singapore, which could affect her ability to achieve her macroeconomic goals.
- At the same time, higher interest rates in major economies could have a contractionary effect in these economies result in a fall in real national income. Given that these economies are likely trading partners with Singapore, it will have an impact on Singapore's exports and hence her ability to achieve her macroeconomic goals.
- This essay seeks to discuss whether the rise in world interest rates will have an overall benefit on the Singapore economy.

**Body**

	<b><u>Positive impact on SG</u></b>	<b><u>Negative impact on SG</u></b>
<b>Singapore as an interest rate taker</b>	<ul style="list-style-type: none"> <li>- When world interest rates would rise, interest rates in Singapore also rises. This reduces any potential effects on short-term capital flow and hence the BOP.</li> <li>- Given cost of borrowing is greater than the expected rate of returns, local investment by domestic firms would decline which reduces investment.</li> <li>- Concurrently, consumption of big-ticket items which could influence inflation rate such as cars and property is likely to fall. This <b>reduces</b> Singapore's AD and hence <b>demand-pull inflation</b> (assuming the economy is at full employment)</li> </ul>	<p>However, assuming the economy still had spare capacity, the fall in AD might result in a fall in real national income via the multiplier process. This <b>impedes actual growth</b> and <b>increases cyclical unemployment</b>.</p> <p>[Provide AD-AS diagram and analysis]</p> <p><i>Discussion:</i> Nevertheless, if consumer optimism remains strong in Singapore, consumption of consumer durables may still remain strong which may mitigate the fall in AD.</p>
<b>Impact of higher interest rates on Singapore's trading partners</b>	<ul style="list-style-type: none"> <li>- Higher world interest rates could be used as a tool to contain demand-pull inflation as the result of the fast pace of economic growth for world's economy. Therefore, economic growth for these economies could be still strong.</li> <li>- In this case, incomes in Singapore's trading partners are likely to remain high and demand for her exports will continue to be high. Hence this would have a <b>positive impact on Singapore's actual growth while keeping her cyclical unemployment low</b>.</li> </ul>	<ul style="list-style-type: none"> <li>- Higher interest rates in the world (especially US or EU countries) would result in a contractionary effect on the economy as cost of borrowing reduces C and I, decreasing AD and hence real national income.</li> <li>- Assuming Singapore's exports are normal goods, the fall in incomes in Singapore's major trading partners such as US and EU will decrease demand for her exports and hence reduce her AD. Via the reverse multiplier process, Singapore's real national income will fall, <b>limiting actual growth</b> and <b>increasing cyclical unemployment</b>.</li> </ul>

		<p><i>Discussion:</i> Impact on falling AD may be limited due to</p> <ul style="list-style-type: none"> <li>○ Singapore's small multiplier size</li> <li>○ Domestic Investment playing a small role in Singapore's investment component (mainly FDI)</li> <li>○ Degree of optimism/ pessimism by consumers and investors</li> </ul> <ul style="list-style-type: none"> <li>- The decline in export revenue is also likely to worsen the balance on trade in goods position.</li> <li>- Decline in the tourist arrivals into Singapore as well as financial services might worsen the balance on trade in services position.</li> <li>- Overall, <b>balance of payments would worsen</b> with the decline in both balance of trade in both goods and services.</li> </ul>
<p><b>Synthesis:</b></p> <p>The rise in interest rates is unlikely to result in an overall benefit on the Singapore economy, unless the intention of the policy implemented by major economies is primarily to reduce demand-pull inflation indicating minimal rise in interest rates (e.g. in recent years, US has been increasing her interest rate by only 0.25 percentage points each time) which will therefore result in a slowdown in economic growth rather than the encourage a contractionary effect on the economy.</p> <p>Whichever the intention of major economies, Singapore will be largely affected due to her dependence on trade to generate economic growth. As analysed above, her multiplier size, state of economy and degree of optimism and pessimism from consumers and investors will determine the extent of the impact on her economy.</p>		

**TYS 2018 Question 6**

“Across the globe, people are wondering why the US, usually the leader in free trade, is now taking a protectionist stance.”

Source: *Foreign Policy Journal*, February 2017

- (a) Describe two different types of protectionist policy measure and explain how each type would affect trade. [10]
- (b) Discuss the extent to which protectionism would be beneficial to an economy. [15]

**Suggested answer to part (a)**

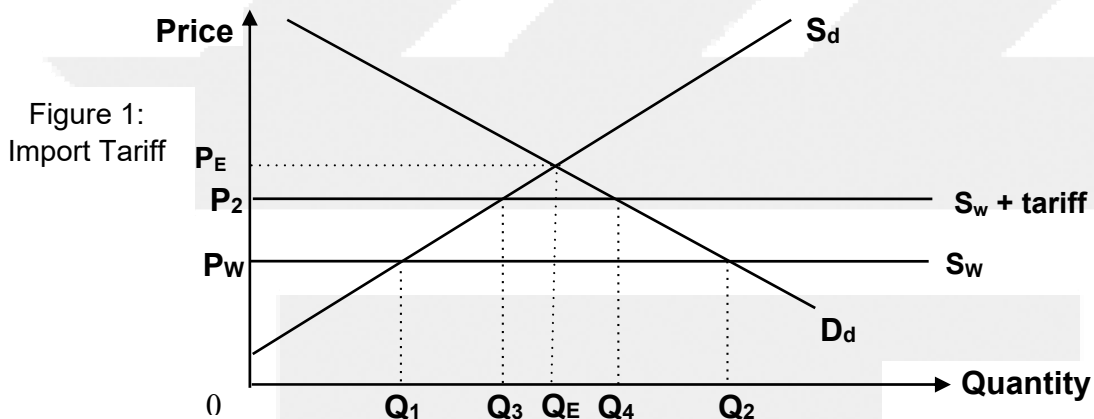
**Introduction**

The practice of sheltering domestic industries from foreign competition is known as protectionism. In this essay the 2 protectionist policy measures will be explained are import tariff and import quota.

**Body**

**1. Describe import tariff**

Tariff is a tax imposed on imports. When a specific tariff on e.g. steel is levied, the supply curve is raised from  $S_w$  to  $(S_w + \text{tariff})$ . It raises the price of imports as a result of the tax. Domestic production increases from  $0Q_1$  to  $0Q_3$ . Consumers will then reduce the quantity imported from  $0Q_2$  to  $0Q_4$  in reaction to the increased price. In Figure 1, without tariff the price is  $P_w$  and quantity imported is  $Q_1Q_2$ . With tariff imposed, price goes up to  $P_2$  and the quantity imported is reduced to  $Q_3Q_4$ .



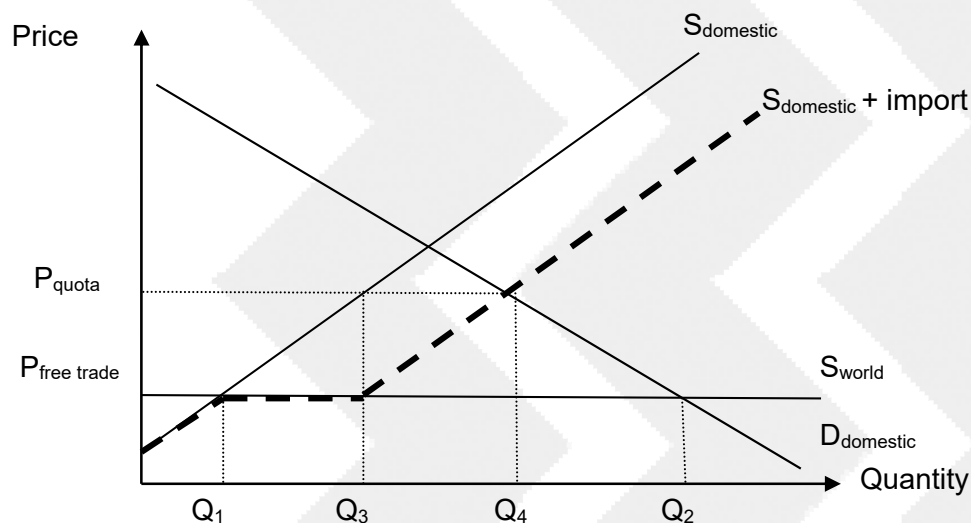
**Explain how it will affect trade**

As there is a fall in the quantity of imports, import expenditure will fall and trade balance will improve ceteris paribus.

**2. Describe import quota**

Quotas are quantitative limits to imports. It is a legal limit on the quantity of imports over a given period of time. An effective quota must limit imports to an amount that is less than what would otherwise be imported under free trade. Referring to Figure 2, amount of imports is  $Q_2 - Q_1$  with free trade, if a quota was introduced to restrict imports to  $Q_3 - Q_1$ , then the price will rise from  $P_{\text{free trade}}$  to  $P_{\text{quota}}$ .

Figure 2: Import Quota



*\*Students can also analyse the impact on the domestic market for steel with a perfectly inelastic supply curve.*

**Explain how it will affect trade**

With a limit on the quantity allowed to be imported, import expenditure will fall, c.p. balance of trade will improve.

**Conclusion**

Protectionist measures are taken with the aim of improving trade balance.

**Other possible protectionist measures include subsidies and devaluation:**

**(i) Subsidy**

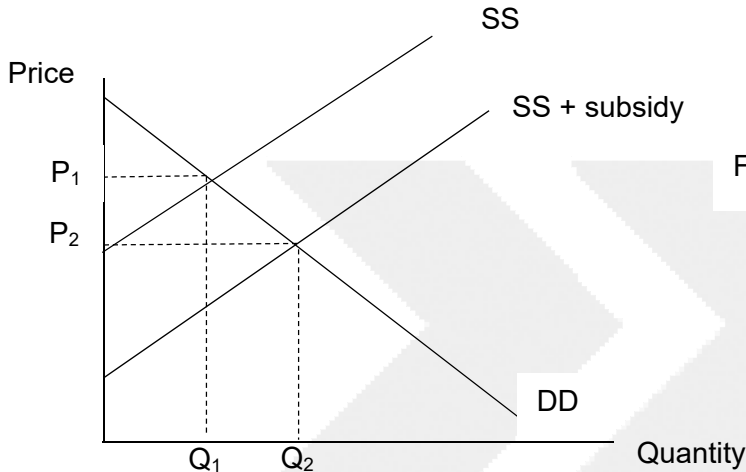


Figure 3: Effects of a subsidy

- A subsidy is also another form of indirect protection given to domestic producers so that they can be more competitive against foreign producers
- Subsidy reduces the cost of production and hence, domestic supply increases from SS to SS + subsidy
- As a result, the equilibrium price falls from  $P_1$  to  $P_2$ , improving the price competitiveness of domestic products
- Therefore, **domestic consumers may switch away from imports to cheaper domestically produced substitutes** → **amount of imports falls**. In addition, **assuming  $PED > 1$**  due to availability of substitutes, **quantity demanded by foreign consumers will increase more than proportionately** → **increasing export revenue**.

**(ii) Devaluation**

- By lowering the external value of the currency, **exports will become relatively cheaper in terms of foreign currencies** as foreign importers now need less of their currencies to buy the same amount of local currencies. This will **increase the external demand for the country's goods and services**, hence **increasing export revenue**.
- On the other hand, **imports will become more expensive in terms of local currency** as one unit of local currency are needed to buy the same units of foreign currencies. Assuming  **$PED_m > 1$**  due to availability of substitutes, **quantity demanded of imports will fall more than proportionately**, resulting in a **fall in import expenditure**.

**Suggested Answers to part (b)**

<b>Introduction</b> This essay will attempt to assess the potential benefits and costs to an economy in terms of the macro goals and whether on balance it will be beneficial.	
<b>Body</b>	
<b>How protectionism benefits an economy</b>	<b>Extent</b>
<p><b>1. EG &amp; employment, Trade balance</b>          As explained in part a, with protectionism, net exports and hence the <b>BOT will improve</b>.          This will help increase AD and via the multiplier effect, real national income will increase. There will be <b>actual growth</b> and jobs will be created <b>improving employment</b>.</p> <p style="text-align: center;"><i>Analyse with AD/AS diagram</i></p> <p>This is especially the case where countries adopt protectionism to:</p> <p>i) <u>Help sunset industries</u>          Protectionism provides a buffer for workers in these sunset industries with the opportunity to retrain and seek employment in other expanding sectors of economy. Declining industries can also make use of the term of protectionism to reorganize and restructure themselves to compete effectively with the foreign rivals again. This can help the economy to <b>minimize structural unemployment</b>.</p> <p>ii) <u>Help against unfair trade practices</u></p> <ul style="list-style-type: none"> <li>○ Dumping refers to the selling of the same good to a foreign country at a lower price than that charged to the domestic buyers and often below the marginal cost of production.</li> <li>○ The objective is to drive out rival producers in the importing country and eventually monopolize the market. Import-substituting industries in the receiving market may not be able to compete against such foreign exporters and hence may close down.</li> <li>○ When dumping occurs, production is often subsidized by the perpetrator's government and hence can be considered as a form of unfair competition. In the long run, the local import competing producers may be destroyed, and once this occurs, the foreign firms can now charge higher monopolistic prices thus making local consumers worse off.</li> </ul>	<p>If <u>economy is near full employment</u>, the increase in AD can instead <b>add on to inflationary pressure</b>.</p> <p>With the adoption of protectionism, there is always the possibility of <u>retaliation by trading partners</u>. If trading partners impose trade restrictions as well, the benefits gained from the initial protectionism would be eliminated.</p> <p>In practice, the imposition of protective tariffs to allow 'sunset' industries to fade out gradually may delay or slow down the restructuring process and prolong the inefficient use of the economy's resources. Instead of allowing inefficient industries to be weeded out quickly, protection tends to prolong the agony by keeping such 'dying' industries alive on 'artificial support'.</p> <p>Also, such protection may be difficult to remove once it is introduced because of resistance from parties with vested interest.</p> <p>Without protection, the restructuring process can begin quickly and allow the economy to build up new vibrant sectors to sustain growth.</p> <p>As for adopting protectionism against unfair trade practices, it is difficult to identify if the trading partner is really dumping or it is just more efficient. Even if the trading partner is dumping there are legal channels to go through instead of engaging in protectionism.</p>

- If protectionism is used to help domestic producers compete against unfair trade practices used by trading partners to gain an unfair advantage, it can **help prevent loss of GDP and jobs** should the domestic producers shut down.

iii) Help infant industries to develop CA

Infant industries are industries which have potential CA but have not fully developed yet. They may face high start-up cost at their initial stage of production. Protection can be given until it matures and is able to expand its output sufficiently to reap economies of scale and establish market share so that it is able to compete with the foreign firms. If it becomes successful, **jobs are created and it will help economic growth.**

In the cases of countries adopting protectionism with the aim of helping infant industries to develop, the protected industries may become complacent and produce low-quality goods at high prices with limited variety. Industries lack the incentive to mature into strong and efficient producers that can compete internationally if it can fall back on the protection given by governments. There is also no foolproof method for identifying genuine or potentially efficient infant industries. Every new industry may claim to be an "infant" but not every newly established industry is a genuine infant industry. They must have potential comparative advantage which could be nurtured into actual comparative advantage under temporary protection.

Evaluation:

Ultimately, protectionism eliminates the benefits of free trade. At best, there may be benefits for the economy if the infant industry matures and develop CA to be able to compete successfully with international companies.

**2. Ensure survival of nation**

There is a need to be self-sufficient in times of war and the desire not to be dependent on insecure or politically undesirable sources for the goods. Certain industries are indispensable to any war effort – steel, transportation equipment, aircraft, mining of strategic minerals etc. Even though a nation may not have a comparative advantage in the production of such products, it may be difficult or impossible to import them when war disrupts world trade. The economy benefits in terms of being able to survive.

Although the economy loses in terms of efficiency and ability to consume more by adopting protectionism, being able to ensure the survival of the nation is imperative.

**Conclusion**

Other than the case of ensuring survival of nation by protecting certain essential industries, protectionism even applied with careful consideration will not offer net benefits. This is because any potential short term benefits gained may be eroded by retaliation or even if trading partners do not retaliate, it is highly likely that it creates a safety net for the domestic producers and lead them to remain inefficient. This has been demonstrated in numerous examples around the world where the protected industries do not advance. And there is also the major cost of consumers having to suffer from higher prices and less variety. In other extreme cases like small and open economies which are highly reliant on trade, engaging in protectionism offers minimal to no net benefits at all.



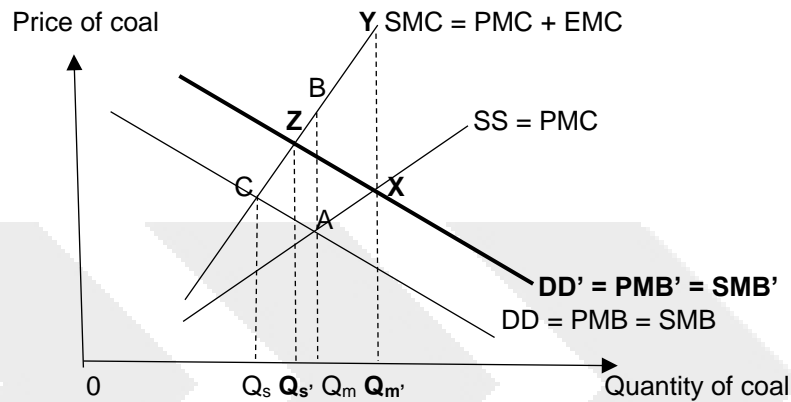


**N2019 Case Study Question 1 Suggested Answers**

(a)	With reference to Extract 1, identify a demand factor and explain how it has affected demand for coal in the US. [2]
	<p>Demand factor:</p> <ul style="list-style-type: none"> <li>Price of related goods - 'cheaper, cleaner gas... has led to coal being replaced' (1m)</li> <li>A fall in the price of cleaner gas has resulted in a decrease in the demand for coal given that they are substitutes. (1m) – preferred answer</li> </ul> <p>OR</p> <ul style="list-style-type: none"> <li>Taste and Preferences – consumers have acquired a taste and preference away from coal which 'generate extensive carbon emissions' and is 'the dirtiest of fossil fuels' towards 'cleaner gas' sources. (2m) – acceptable</li> </ul>
(b)	Using the evidence in Extract 1, explain whether the cross elasticity of demand in China between coal and renewable energy is positive or negative. [3]
	<p>Cross elasticity of demand concept refers to the degree of responsiveness of demand for one good to a change in the price of another good, ceteris paribus.</p> <ul style="list-style-type: none"> <li>Extract 1 mentions 'renewable energy prices have been falling' and that 'demand for coal has fallen globally' (1m)</li> <li>This indicates a positive cross elasticity of demand value (1m) as the price of renewable energy and demand for coal move in the same direction, indicating that they are substitutes (i.e. they satisfy the same want of providing energy to consumers). (1m)</li> </ul> <p><i>Note: No need to have the magnitude since the question specifically only asks for the sign only.</i></p>
(c)	Using a diagram and Extract 1, explain how the UK government's change in the minimum price of coal in 2016 is likely to have affected the market for coal. [3]
	<ul style="list-style-type: none"> <li>From Extract 1, the UK government increased the minimum price of coal in 2016 (1m).</li> <li>Illustrate and explain with the help of a diagram (2m)</li> <li>As shown in Figure 1, this increase in minimum price of coal results in rise price of coal from <math>P^1_m</math> to <math>P^2_m</math>, a fall in quantity demanded from <math>Q^1_d</math> to <math>Q^2_d</math> and an increase in surplus from <math>(Q^1_s - Q^1_d)</math> to <math>(Q^2_s - Q^2_d)</math>.</li> </ul> <div style="text-align: center;"> <p><b>Figure 1: Market for coal</b></p> </div>



Figure 2: Market of Coal



- (e) Discuss whether the Vietnamese government's plan to ban motorbikes and switch travel to public transport is likely to be better than a policy of road pricing in improving air quality in Hanoi. [8]

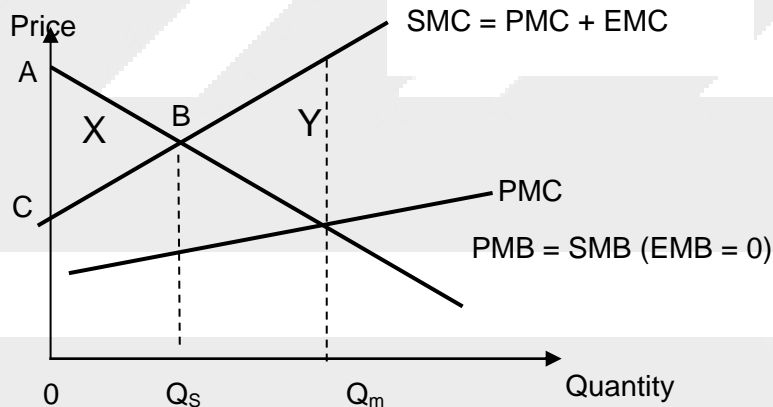
Introduction

- Negative externalities in the form of air pollution arises from greater number of motorbikes on the road is unpriced by the market – 'an estimated five million motorbikes spewing so much gas into the air that breathing can often be difficult' (Extract 3).
- This aims to discuss whether banning motorbikes and switching to public transport is better than a policy of road pricing in improving air quality in Hanoi.

Explain the benefits of 'ban of motorbikes + switch to public transport' to improve air quality and possible limitations/concerns

- A total ban on motorbikes might work if the external cost is so high and a ban results in a net welfare gain. Illustrate and explain with a diagram

Figure 3: Banning motorbikes



- The market equilibrium quantity is at  $Q_m$  where  $PMB = PMC$ , compared to the socially efficient quantity  $Q_s$  where  $SMB = SMC$ .
- A stoppage of production would result in a welfare gain of Area Y from the removal of the deadweight welfare loss caused by over-production of  $Q_m - Q_s$ .
- But in such a situation, there would be a loss of Area X measured in terms of potential net welfare benefit forgone if the socially efficient quantity of good was produced and final outcome on welfare would depend on the relative size of Area X & Area Y.
- Public transport can be a viable substitute if it is able to meet similar wants as that of motorbikes. And given there are fewer vehicles on the road, problem of air pollution can be better controlled.

Explain the benefits of using road pricing to improve air quality and possible limitations/concerns

- Road pricing acts as a tax=EMC at  $Q_s$  could limit the usage of vehicles by making the motorists to internalize the external costs of air pollution.
- If EMC is underestimated due to imperfect information by government, this will mean the road pricing strategy may not be able to fully address the market failure problem.
- High cost of installing infrastructure to support road pricing: If the road pricing infrastructure is costly, then this might outweigh the social benefits of controlling air pollution.

Conclusion (evaluation)

- Current public transport system is 'limited' and there is 'no metro or underground system' and only caters to 10% of Hanoi's residents. It will take a very long time and very high costly for a good public transport system to be built and become a good substitute to motorbikes.
- Road pricing strategy is likely to be a better policy in the short-run: While both policies require the build-up of infrastructure, road pricing is more targeted at busy roads at peak periods where the air pollution might be at its highest and should be built faster and cheaper than a comprehensive public transport system. Once the infrastructure is in place, it will be relatively easy for the government to tweak the policy according to the size of the external costs.



Suggested Answers to A Level **2019** H2 Economics (CASE STUDIES) by *Hwa Chong Institution Economics Unit*

	L2	<ul style="list-style-type: none"><li>Provides explanation of both approaches and their limitations/concerns</li><li>Applies case evidence to support answers</li><li>Applies economic concepts or theories</li><li>Demonstrates sufficient depth and rigour in the analysis</li></ul>	4 - 6
	L1	Any lack of L2 descriptor	1 - 3
	E	Substantiated judgment on whether a ban on motorcycles together with a switch to public transport or the policy of road pricing is a better way to deal with air pollution in Hanoi.	1 - 2
(f)	Discuss whether the Vietnamese government's plan to remove state monopolies and create more competitive markets in energy provision will, on balance, improve economic efficiency in Vietnam. [10]		
<p><u>Introduction</u></p> <ul style="list-style-type: none"><li>Vietnamese government's plan: (1) Remove state monopolies + (2) Create more competitive markets via deregulation. <i>Extract 2: Vietnam plans to reduce its stake in Vinacomin from 99.7% to 65%.</i></li><li>This aims to discuss whether such plans on balance will improve economic efficiency in terms of allocative, productive and dynamic efficiency.</li></ul> <p><u>Body</u></p> <p><u>Reduce allocative inefficiency</u></p> <ul style="list-style-type: none"><li>As a 'powerful monopoly' in the market for coal with a very high and price inelastic demand means it is highly allocative inefficient with higher price and reduced output (i.e. <math>P &gt; MC</math>) where there is underproduction of coal. Illustrate the deadweight loss resulting from allocative inefficiency in a monopoly).</li><li>The removal of state monopolies &amp; creation of more competitive markets will provide substitutes within the coal market such that demand is lower and less price inelastic. This means the gap between P and MC will be narrower, deadweight welfare loss is smaller.</li></ul> <p><u>Reduce X-inefficiency</u></p> <ul style="list-style-type: none"><li>Prior to government intervention, state-owned electricity company EVN has allegedly used 'old methods' of production and 'yesterday's technology' (Extract 3). This means the firm was likely complacent due to the lack of competition such that cost controls became lax, with no incentive to keep up with the use of modern technology. EVN was also described as 'bloated', perhaps such as overstaffing which can result in higher AC and MC, not producing on the LRAC.</li><li>Hence government intervention by making the market more contestable will help reduce X-inefficiency.</li></ul> <p><u>Improve Dynamic efficiency</u></p> <ul style="list-style-type: none"><li>Prior to government intervention, there appears to be some evidence that EVN tried to utilize modern technology to minimize power plant emissions.</li><li>It is likely with a contestable market setting or more actual competition, there will be greater incentive to innovate and secure its position especially in terms of more cost-effective production techniques, since such state-owned enterprises currently suffer from 'low profitability' (Extract 2).</li></ul> <p><u>Worsen productive inefficiency</u></p> <ul style="list-style-type: none"><li>Productive efficiency is achieved when the firm produces on the minimum efficient scale (MES) of production on the LRAC, exhausting all the possible internal economies of scale.</li><li>Deregulation results in a fall in the market share of the state monopolies which reduces their scale of production. Hence it might be possible these firms will be unable to enjoy internal economies of scale like they used to as a monopoly and they will not be able to produce at <math>Q_{MES}</math>.</li></ul> <p><u>Conclusion</u></p> <ul style="list-style-type: none"><li>With lower barriers to entry, market will become more contestable which not only raises the threat of competition but could indeed result in more competitors in the market, turning the state-own firms from a 'powerful monopolies' to oligopolies. Products like energy is a rather homogeneous product, the competition amongst a few large firms should be intense and allocative and dynamic efficiency are highly likely to improve.</li><li>While a smaller scale of production indeed means firms might not be producing at the minimum efficient scale, the reduction of X-inefficiency could also mean the firms are at least producing on the LRAC.</li><li>On balance, government intervention is likely to improve economic efficiency.</li></ul>			
	L2	<ul style="list-style-type: none"><li>Provides explanation of all 3 types of economic efficiency</li><li>Applies case evidence to support answers</li><li>Applies economic concepts or theories</li><li>Demonstrates sufficient depth and rigour in the analysis</li></ul>	5 - 7
	L1	Any lack of L2 descriptor	1 - 4
	E	Substantiated judgment on whether on balance economic efficiency has improved in Vietnam.	1 - 3

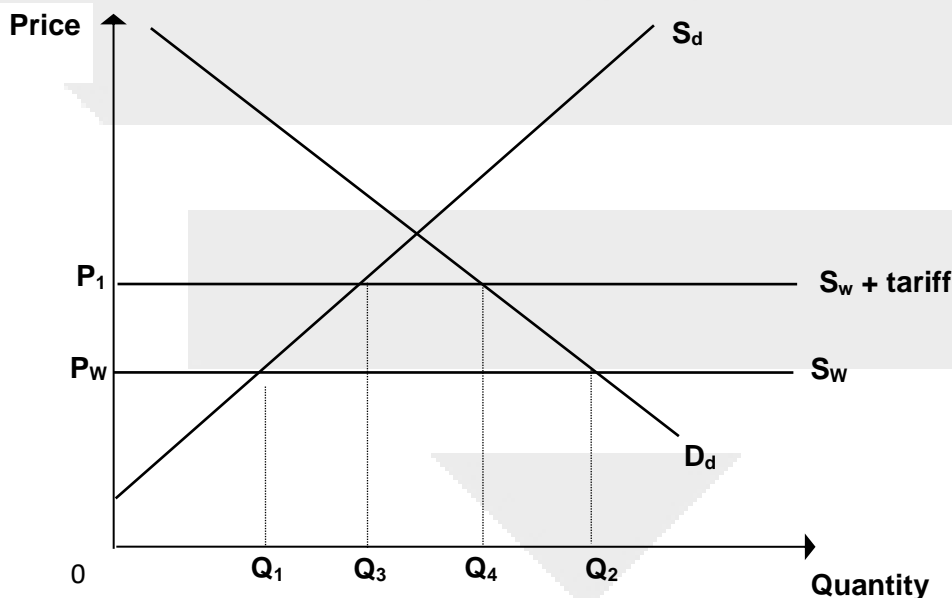


**N2019 Case Study Question 1 Suggested Answers – parts (d) & (f) are CLT**

- (a) With reference to Figures 1 and 2, what evidence is there to suggest an increase in productivity of workers in US manufacturing over the period 1987-2017? [2]
- Productivity of workers in US manufacturing is measured by dividing US manufacturing output by the number of workers employed in manufacturing. [1]
- Since over the years 1987-2017 in US, manufacturing output is increasing (Fig 2) and number of manufacturing employment is falling (Fig 1), there is an increase in productivity of workers. [1]
- (b) Using an example, explain a benefit to a firm of producing on a larger scale through participation in the global value chain. [2]
- As a firm participating in GVCs is tasked to produce only one stage of the production chain in a country, it has to specialise and operate at a larger scale (Extract 5). With a larger scale of production, the firm reaps the benefit of costs savings from internal economies of scale [1] as with specialization, the workers become more productive and produce more output, lowering the unit costs of production. [1]
- (c) Explain one possible reason why Singapore has such a high participation rate in the global value chain. [2]
- A high participation rate in GVCs means that the percentage of foreign inputs in an economy's export is large as seen in Table 2. Singapore being a small and open economy with limited natural resources, it would be ideal to participate in GVCs because foreign inputs can be tapped on for production. [1]
- At the same time, participating in GVCs allows the focus on one stage of the production process, and thus Singapore can choose to operate on its comparative advantage which is a highly skilled labour force, to engage in work that are skills intensive and thus able to perform most productively. [1]
- (d) Explain two possible reasons for the US government's call for tariff protection of the US manufacturing industry. [6] - **CLT**

Foreign manufacturers ravaging US borders with their products and at the same time 'destroying US jobs' (Extract 4) have caused the US government to call for the imposition of tariff on imported manufacturing products.

Figure 1: The impact of tariff on manufacturing products



The impact of tariff and how it offers protection to US:

- $S_d$  and  $D_d$  represent the domestic supply and demand curve respectively of manufacturing product.  $S_w$  is the world supply which is perfectly elastic.
- Without tariff, the goods will be sold at  $P_w$  and  $Q_1$  will be produced by the domestic producers and  $Q_2$  will be demanded by the consumers and thus  $Q_1Q_2$  will be imported.
- To protect the home manufacturing industry from foreign competition, the government levies a tariff on the imported good, thus raising the world supply curve from  $S_w$  to ( $S_w + \text{tariff}$ ). The price of imports is now higher; it increases from  $P_w$  to  $P_1$ .
- At  $P_1$ , domestic production increases from  $0Q_1$  to  $0Q_3$ ; domestic buyers are buying less at  $Q_4$ . The tariff has caused a fall in the amount of imports from  $Q_1Q_2$  to  $Q_3Q_4$ .



The US manufacturing industry is protected when the price of imports rises due to the tariff and this causes a fall in the amount of imports, which in turn result in higher domestic production when consumers switch away from imported goods.

With increasing supply in the domestic manufacturing industry, more job vacancies are made available, protecting the demand-deficient unemployment in the US.

#### Mark Scheme

Explain (include the use of diagram) how the tariff raises the price of imports to prevent imports from 'ravaging into US borders'. (3m)

Explain (include the use of same diagram) how employment increases from higher domestic production due to imposition of tariff. (3m)

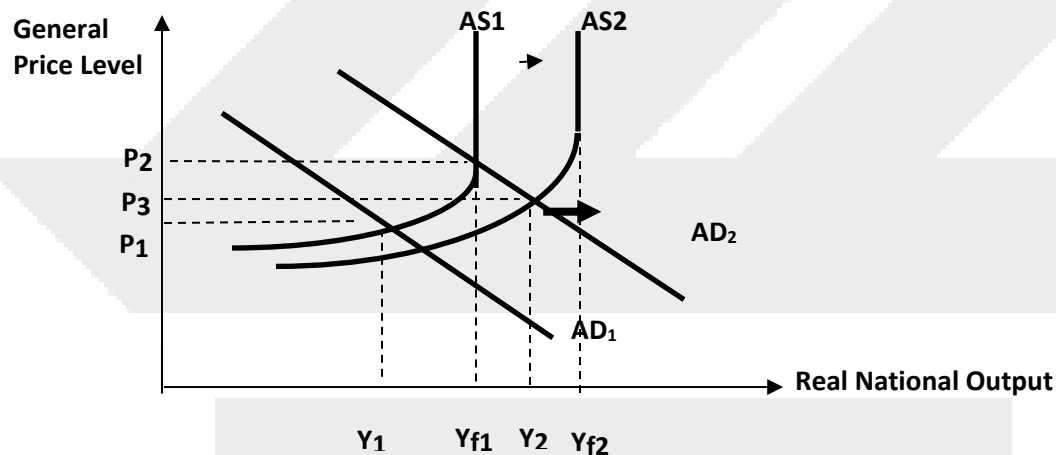
- (e) Considering possible advantages and disadvantages to Pakistan's economy of China's 'Belt and Road Initiative', assess whether it is likely to be of overall benefit to Pakistan. [8]

The 'Belt and Road Initiative' can help Pakistan to attain its macroeconomic goals of reducing demand-deficient unemployment and also generate actual and potential economic growth. However, in the short run it could worsen the Balance of Trade with the import of capital goods and the intention of China to export more goods to Pakistan after helping it to build the infrastructure. Besides the macro impact, there is also a possibility of environment pollution from the heightened building of infrastructure.

Pakistan can tap foreign capital from China to drive economic growth through the influx of Foreign Direct Investment (FDI). Any inflow of FDI will stimulate Aggregate Demand (AD) via an increase in Investment (I) expenditure. As in Fig 1, the AD shifts rightward from  $AD_1$  to  $AD_2$ . Hence, in the short run, it will stimulate its macroeconomy and translate into greater production of national output which also help to reduce demand-deficient unemployment.

As more infrastructural projects are build, it would demand for more workers, and thus employment is likely to increase, as seen in Extract 6, "US\$62 billion China-Pakistan economic corridor... and create up to one million jobs in Pakistan". In the long run, FDI inflows enhance Pakistan's productive capacity, especially when motorways, power plants, factories and railways are going to be built, shifting the potential output level rightward from  $AS_1$  to  $AS_2$ . Such expansion in productive capacity provides even more room for the Pakistan economy to grow further, to  $Y_2$ , though it will probably take time.

Fig 1: The effect of 'Belt and Road Initiative' on Pakistan's economy



As incomes increase this results in an increase in the level of consumption, which coupled with the multiplier effect also results in an even greater increase in national income through subsequent increases in spending. Firms will react to the increase in consumption by raising the level of output.

However, in the short run, continual increases in FDIs could cause AD to shift drastically to the right, and in such circumstances when the economy is close to its full potential or beyond its full-employment output level at  $Y_f$ , this will result in demand-pull inflation.

As the 'Belt and Road Initiative' is building motorways, power plants, factories and railways in Pakistan, there is the potential for environment exploitation as excessive building taking place at too fast a speed likely to generate pollution as well. If there is a lack of regulation in Pakistan, this can become a disaster.

Moreover, the intention of 'Belt and Road' initiative is for China to 'open up and create new markets for Chinese goods' after first helping to build up the infrastructure. This could have an adverse impact on Pakistan's Balance of Trade from the increase in imports from China.

#### Conclusion

As Pakistan is a developing country, there should be sufficient unemployed or underemployed resources to accommodate the needs from the building of infrastructures arising from 'Belt and Road Initiative'. Hence this will not result in an increase in the rate of inflation but instead generate economic growth and reduced demand-deficient unemployment in Pakistan. Moreover, the buildup in productive capacity enhances productive capacity and this provides further sustained economic growth in the future.

However, as the intention of the 'Belt and Road' initiative is to open up markets for China's exports eventually, this would adversely affect the Balance of Trade for Pakistan. But this would probably happen in the future. As for the environmental problem, it can be solved by putting in place proper regulations



## Suggested Answers to A Level 2019 H2 Economics (CASE STUDIES) by Hwa Chong Institution Economics Unit

to guide firms in their construction of power plants, factories or railways etc. Thus the overall impact to Pakistan from the “Belt and Road Initiative” is likely to be positive.

Mark scheme:

L2: (4-6)	<ul style="list-style-type: none"> <li>Provides a balanced response (i.e. analyses both the advantages and disadvantages on Pakistan's economy).</li> <li>Covers sufficient scope of the possible impacts (i.e. analyses growth, employment and productive capacity)</li> <li>Applies case evidence to support answers</li> <li>Applies economic concepts or theories</li> <li>Demonstrates sufficient depth and rigour in the analysis</li> </ul>
L1: (1-3)	Lacking in any of the L2 criteria
E (+2)	Makes a substantiated stand on the overall impact on the economy considering the likely circumstances Pakistan is in, given that it is a developing country.

- (f) Using economic analysis and based on the evidence provided, discuss whether you agree with the view that globalization is reversible. [10] **CLT**

### Introduction

Globalization is about closer integration of countries and peoples of the world brought by the flow of goods, services, capital, knowledge, technology and people across borders. However, the tide of globalisation can recede or reverse by various forms of protectionist measures (eg. tariffs and quotas) in trade, capital and human movements. Hence to better understand whether countries would recede back on globalisation, an analysis of the likely circumstances the various participating countries are facing and the costs and benefits experience by them is necessary.

### Thesis: Globalisation is reversible

In Extract 4, it is cited that President Trump expressed that “We must protect our borders from the ravages of other countries making our products, stealing our companies and destroying our jobs”. For big and developed countries, their industries which were once competitive, now see their edge in comparative advantage ceding to emerging or less developed nations because the latter have managed to catch up through lessons and the use technologies. They can now specialise and even export comparable goods to developed countries.

Moreover, as developed countries are open for globalisation, developing countries could be seen ‘dumping’ their goods into the developed countries’ markets. Workers employed in those industries might lose their jobs because of the fall in demand for their products. This adverse impact is not limited to that sector, it could spread to other sectors via the multiplier effect as affected workers scale down their consumption on food, clothing entertainment etc. This leaves the developed economies no choice but to protect their domestic industries by setting up protectionist measures and receding from globalisation.

There is evidence to support the above-mentioned scenarios. “A reduction in the ratio of global trade in goods to global GDP has fallen to 45% from 52% since 2008” (Extract 4). A reduction of the component of trading activities out of the GDP would mean a shift in the components towards more activities in investment in the domestic economy, more government spending or and domestic consumption which signals a reversible in globalisation.

There are also other forces that push for receding globalisation. The evidence from Extract 4 says that lesser need for cross-countries production, “as automation reduces the labour needed for production and new technologies allow for smaller factories, localized production is more possible” and thus “manufacturing is becoming more local”. Thus technology advancement has encouraged the production of goods to be localized in a country with lesser need for the flow of investments to other countries. Extract 4 also indicates “FDI is below its pre-crisis peak and projected to decline further” and “multinational companies’ cross-border investments fell by around 15% in 2016”.

### Anti-thesis: Globalisation is irreversible

On the other hand, there is also evidence to show that “exports are rising again, governments are pursuing free-trade deals” in recent years. “talk of globalisation’s retreat is proving to be a very different story in Asia” (Extract 7). It is also mentioned in Extract 5 that “among the clear beneficiaries of globalisation are the emerging economies, which have become increasingly integrated into more and more complex global value chains” in recent years.

Globalisation has its benefits: access to foreign resources increases productive capacity and generates potential growth. This is especially crucial for small countries lacking in resources and foreign talents and this is the reason for them to integrate into the global value chains. By being in a bigger community not only do they enjoy economies of scale in production, but also a larger export market for their products as export is often said to be an engine of growth.

### Conclusion

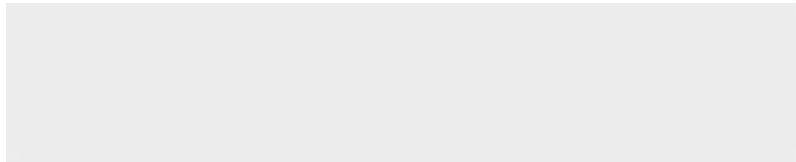
There is evidence showing the increase in globalisation recent years, especially in Asia. Participation in Global Value Chains by different countries has also risen where production processes are connected to one another in different countries. Hence it may seem that globalisation is irreversible given the close connectedness of countries and the many benefits like growth enhancement, both actual and potential as well as reaping EOS.

However, there are still some threats of protectionism coming out of US, especially about trade war with China. It might seem that smaller economies especially in Asia are seen to wanting to promote greater trading and investment activities among one another regionally. Hence we could conclude that though globalisation has slowed globally, regionalism seems to be gathering pace. Countries are diverting and diversifying themselves to engage in more activities on a regional basis and thus globalisation is irreversible and it is on-going because it is advantageous for participating countries.



Suggested Answers to A Level **2019** H2 Economics (CASE STUDIES) by *Hwa Chong Institution Economics Unit*

L2: (5-7)	<ul style="list-style-type: none"><li>• Provides a balanced response (i.e. analyses both the views of reversibility and irreversibility of globalisation, seen from the various participating countries.</li><li>• Covers sufficient scope of the arguments for both reversible and irreversible perspectives.</li><li>• Applies case evidence to support answers</li><li>• Applies economic concepts or theories</li><li>• Demonstrates sufficient depth and rigour in the analysis</li></ul>
L1: (1-4)	Lacking in any of the L2 criteria
E (+3)	Makes a substantiated stand on the view of whether globalisation is reversible or not, considering the evidences seen so far in the world.







### 2019 Essay Question 1

According to the Competition and Consumer Commission of Singapore (CCCS), the takeover of Uber by Grab in Singapore has led to 'a substantial lessening of competition'. This has made it harder for new competitors to enter the ride-hailing market.

Source: Adapted from *Channel NewsAsia*, 5 July 2018

- (a) Explain one reason why consumers might be better off and one reason why consumers might be worse off from Grab's takeover of Uber. [10]
- (b) Discuss the potential benefits and problems that are likely to be experienced by new competitors considering entering the ride-hailing market dominated by Grab. [15]

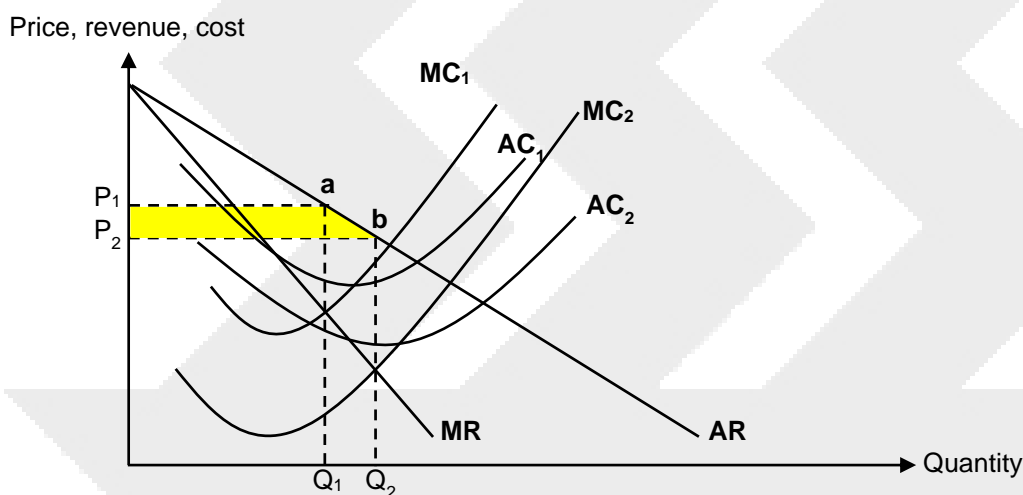
#### Introduction

- Grab's takeover of Uber is a form of horizontal integration when firm operating in the same or similar industry combine together to become a single firm.
- This will result in Grab becoming larger & consumers can be better or worse off depending on whether Grab fares rise or fall after the acquisition.

#### Body

##### One reason why consumers may be better off

Figure 1: Lower Prices with Greater IEOS



- The merger would allow Grab to enjoy a larger scale of production and hence greater internal economies of scale (IEOS), which is the fall in average costs due to a rise in their output. Rationalisation might also occur and further cuts back cost.
- With only one platform to operate and maintain, the combined firm will not need as much resources like servers, engineers, administrative staff and office space as compared to two separate firms so the cost of employing such resources will be reduced.
- These will reduce Grab's average and marginal costs. As shown in Figure 1, both AC and MC shift down from AC<sub>1</sub> and MC<sub>1</sub> to AC<sub>2</sub> and MC<sub>2</sub> respectively.
- The profit maximizing price is at P<sub>1</sub> which corresponds to output Q<sub>1</sub> where MC<sub>1</sub> cuts MR, while after the takeover, the profit maximizing price falls to P<sub>2</sub>, which corresponds to Q<sub>2</sub> where MC<sub>2</sub> cuts MR.
- Since consumers pay less for their ride hailing services than before with a higher consumer surplus of P<sub>1</sub>P<sub>2</sub>ab, they are better off from the takeover of Uber by Grab.

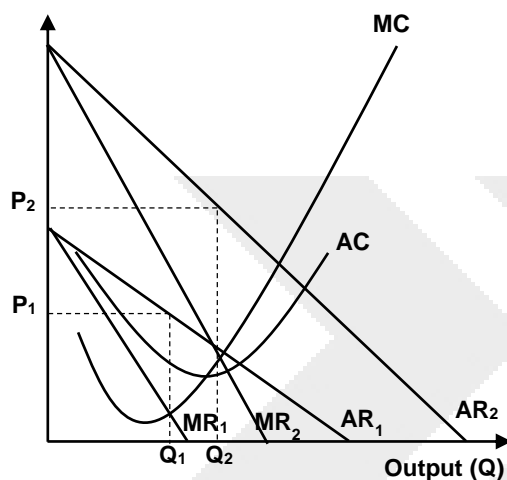
##### One reason why consumers may be worse off

- However, the takeover would give Grab even greater market share and hence increase its monopoly power, with a higher and more price inelastic demand due to fewer substitutes.
- Referring to figure 2, Grab's demand rises from AR<sub>1</sub> to AR<sub>2</sub>, so MR<sub>1</sub> to rise to MR<sub>2</sub>.
- Before the merger, the profit maximizing price is at P<sub>1</sub> which corresponds to output Q<sub>1</sub> where MC<sub>1</sub> cuts MR, while after the merger the profit maximizing price rises to P<sub>2</sub>, which corresponds to output Q<sub>2</sub> where MC<sub>2</sub> cuts MR.
- Since consumers pay more for their ride hailing services than before, they are worse off from the takeover of Uber by Grab.



Figure 2: Higher Prices with Greater Monopoly Power

Price, Costs, Revenue



**Note:**

- Instead of analysing the impact on price, you can analyse the impact on consumer surplus. However, this approach is trickier as figure 2 will show a rise rather than a fall in consumer surplus. You therefore need to explicitly make the assertion that consumer surplus will overall be lower because the takeover will result in only one firm instead of two.
- Alternatively, you can also analyse the impact on consumer welfare in terms of product quality and product variety. However, such answers are likely to look less analytical as they do not require diagrammatic analysis.
- Grab provides ride-hailing services through its app, which is an online platform which facilitates the matching of commuters with drivers. As Grab is not a typical manufacturing or service firm, the usual types of EOS like specialisation of labour and bulk discounts are irrelevant. Hence relevant exemplifications are likely to be an important factor in determining the quality of your response and thus the marks awarded.

**Mark Scheme**

**L3: Explains how consumers can be better off AND how consumers can be worse off with relevant diagram(s) to ensure rigour.**

(b)

**Introduction**

- When a firm is considering whether to enter a market, it will need to think about the **level of entry and exit barriers** it faces and the level of competition in the market.
- The essay aims to explain the potential benefits followed by the potential problems before assessing the extent to which these benefits and problems will deter entry of new ride hailing firms into a market which is dominated by Grab

**Body**

Benefits to a new firm in a Grab dominated ride hailing market (low barriers to entry/exit + ready pool of customers)

- If the ride hailing market is dominated by Grab, it could mean that consumers are familiar with ride hailing services and there is a ready pool of them to be tapped in and thus a good stream of revenue.
- Besides, when ride hailing was new to Singapore, it took time for Grab to get full time drivers to give up their full time job in traditional taxi companies and join them due to the lack of knowledge in such disruptive technology type of industry. It is probably easier now for the new ride hailing firm to find drivers by giving them more attractive incentives.
- For a ride hailing firm to enter the market, it will need to develop its own ride-hailing app. As Grab is already very established in Singapore as well as in many other countries, potential entrants do not have to figure out how to develop their own app as they can simply copy the Grab app. They can also easily poach the app developers and executives from Grab by offering them higher pay and other benefits.
- Furthermore, current ride hailing providers in other countries (e.g. Gojek from Indonesia) already have already developed their own apps. To successfully enter the Singapore market, they may only need to make minor adjustments to their current app to cater to the Singapore context, which is unlikely to be very costly to carry out.
- Besides, ride hailing firms do not need to own any fleet of vehicles which means low fixed costs. Hence, if they fail to successfully compete in the Singapore market, their exit costs are likely to be quite low.



Problems to a new firm in a Grab dominated ride hailing market (brand loyalty and anti-competitive strategies by Grab)

- For a ride hailing app to be successful, it will need a critical mass of commuters and drivers. However, a new ride-hailing firm may find it hard to attract such commuters and drivers from Grab if there is substantial brand loyalty. Such loyalty can be deepened by reward schemes like rebates, discounts and vouchers given to frequent users. By using other ride-hailing apps, such users may lose such rewards and may hence be unwilling to switch.
- For a new entrant to attract users from Grab, it will thus need to spend substantially to promote their app so that existing Grab users will find it worthwhile to switch. This raises the sunk costs and hence exit barriers for the new firm as such promotional costs are non-recoverable if the new firm were to eventually exit the market.
- Furthermore, Grab may engage in predatory pricing by charging fares which are even below their own cost to make competitors suffer losses too and eventually exit the market. If the new entrant were to retaliate, this may trigger a price war where both parties continually undercut each other. This is likely to result in heavy losses for both parties.

**Note:** Limit pricing is not predatory pricing. Limit pricing means charging fares which are below its own profit maximizing price and if such fares were below the average costs of potential entrants, they will be deterred from entering as it will be unprofitable for them to do so.

**Conclusion**

- With strong monopoly power and substantial financial resources, Grab will most likely employ various anti-competitive pricing strategies to deter entry. Together with the high promotional costs incurred from efforts to attract users away from Grab, these potential barriers are likely to be insurmountable for smaller and less established firms. Given the limited market size in Singapore and even a large company like Uber has exited the market probably due to limited profit, new entrants will need to think carefully how they can better Uber.
- However, for firms like Gojek which are already well established in other countries like Indonesia, these problems are likely to be much less challenging. They should also have ample expertise and resources to copy Grab's app or tweak their existing app and also attract key personnel from Grab to assist in their operations, so the benefits and ease of entering the Singapore market are likely to be much higher. Hence these firms are more likely to enter Singapore's ride hail market to challenge the current dominance of Grab.

**Mark Scheme**

**L3: Analyses both potential benefits and costs of potential new entrants and applies to the context of ride hailing market with Grab's market dominance**

**E3: Justify substantially whether a new ride hailing firm could enter and survive with Grab as the dominant firm.**



### 2019 Essay Question 2

A firm in Singapore is facing an increase in demand for its goods which has led to an increased demand for labour. Its demand for labour is also inelastic. In addition, large numbers of its workers born in the 1960s ('baby-boomers') have been retiring, reducing the number of workers available to the firm.

- (a) With the aid of a diagram, explain how this firm's total expenditure on its workforce will have changed as a result. [10]  
 (b) Discuss whether making changes to the foreign worker levy is likely to be the most effective way the Singapore government can address the labour shortages experienced by such firms. [15]

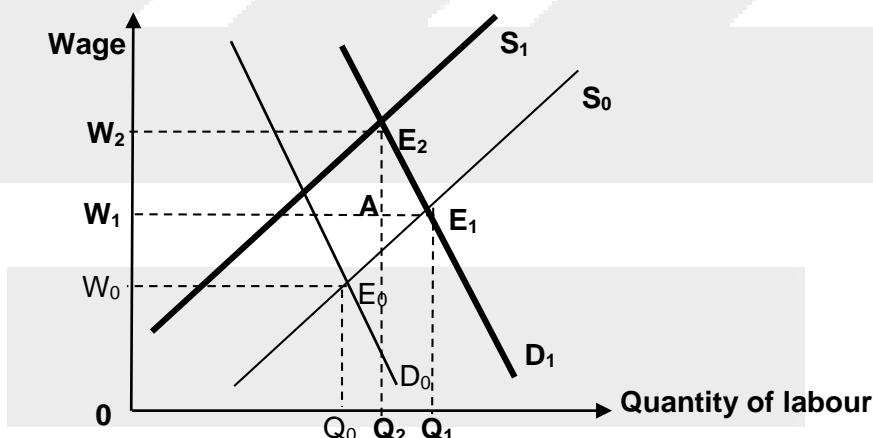
#### Introduction

- Total expenditure on workforce  $TE_L$  = total amount a firm pays to employ its workers = wage per worker ( $W$ ) x number of workers employed ( $L$ ).
- The rise in total expenditure on its labour force is due to a rise in demand and a fall in supply for labour.

#### Body

- Demand is the willingness and ability of consumers to pay for a good/service at given price levels and demand for labour will be the willingness and ability of employers to pay for the labour service at given wage levels. Demand for labour is **derived** from the demand for the goods  $\Rightarrow \uparrow DD$  for goods  $\rightarrow \uparrow DD$  for labour  $\rightarrow \uparrow$  in equilibrium  $P_L = W$  &  $Q_L \rightarrow \uparrow (W \times Q_L) \rightarrow \uparrow TE_L$  (1)
- Supply of labour will be the willingness and ability of workers to provide service at given wages. When large number of workers retiring  $\rightarrow \downarrow SS_L \rightarrow IPED_L < 1$  as mentioned in the preamble  $\rightarrow \% \downarrow \text{in } Q_L < \% \uparrow \text{in } W \rightarrow \uparrow (W \times Q_L) \rightarrow \uparrow TE_L$  (2)
- (1) + (2) =  $TE_L$  surely rise – both a rise in demand together with a fall in supply with a price inelastic demand will reinforce each other to cause  $TE_L$  to rise. They will also cause  $\uparrow W$  but  $Q_L$  may  $\uparrow$  or  $\downarrow$  depending on whether  $DD$  or  $SS$  shifts more. Assume  $\uparrow DD > \uparrow SS$ ,  $Q_L$  also will rise.
- Illustrate with  $DD$ - $SS$  diagram.
- With reference to Figure 1, demand for labour increases from  $D_0$  to  $D_1$ , causing an increase in wage from  $W_0$  to  $W_1$  as well as an increase in quantity of labour from  $Q_0$  to  $Q_1$ , hence the total expenditure on workforce to rise from  $0W_0E_0Q_0$  to  $0W_1E_1Q_1$  since both wage and quantity increased. The fall in supply will cause  $S_0$  to fall to  $S_1$ , resulted in a rise in wage from  $W_1$  to  $W_2$  but a decrease in quantity of labour from  $Q_1$  to  $Q_2$  though it is higher than  $Q_0$  as it is assumed that rise in demand has more impact on  $Q_L$  than fall in supply and  $TE_L$  further increases to  $0W_2E_2Q_2$ . Since gain of  $W_1W_2AE_2$  is greater than the loss of  $AE_1Q_1Q_2$ .

Figure 1: Market of Labour



#### Mark Scheme

**L3: Explains how a rise in demand AND a fall in supply together with a price inelastic demand will result in a rise in TE.**



(b)

### Introduction

- With rising labour demand due to sustained economic growth and falling labour supply due to an aging population, firms in Singapore are likely to experience chronic labour shortages.
- If left to the free market, such shortages will drive up wages, production costs and hence product prices, causing the economy to suffer from high inflation and consequently the erosion of international trade competitiveness.
- The foreign worker levy (FWL) is essentially a tax that is imposed on the employment of foreign low and mid-skilled workers. The aim is to make it more expensive for domestic firms to hire such foreign workers, thus causing them to switch to hiring domestic low-skilled workers. The levy raises the demand and wages for domestic low and mid-skilled workers, which then raises their incomes and material living standards, thus improving income and welfare distribution.
- Given the shortages in the local labour market force due to high demand and low supply of local workers, we will examine how reducing the foreign worker levy can help alleviate such shortages and its limitations and explore two other policy options and their limitations before assessing which policy is most effective in addressing this problem.

### Body

#### Explain how reducing the foreign worker levy addresses Singapore's labour shortages

- Cutting the FWL will reduce the cost of hiring foreign low-skilled workers, thus enabling domestic firms to hire more of such workers and reduces its demand for local workers, alleviating the shortages problem.
- HOWEVER**, the Singapore government imposes Dependency Ratio Ceilings (DRCs), which are ratios of foreign to domestic workers that firms need to adhere to. Once such a ratio is met, a firm will not be able to employ more foreign workers unless it employs more local workers. The aim of this policy is to ensure that firms will always need to hire local workers, thus protecting the employment and incomes of local workers from foreign competition. So even if it is less costly to hire foreign workers due to lower FWL and firms indeed want to hire them to support their higher production, the demand for local workers may not fall and might still increase and rendering it ineffective.

#### Explain two other policies to reduce the shortages of domestic workers

- The government can reduce the demand for local workers through increased automation, as this enables less labour to be used to produce the same amount of output.
- To promote such automation, subsidies and grants can be given to firms to co-fund their purchases of labour saving equipment and the training of workers to use such equipment. By reducing the demand for labour, this allows firms to better cope with the shrinking domestic labour force, thus enabling Singapore's shortages of low skilled labour to be alleviated.
- HOWEVER**, for firms to automate their production, they will need time to restructure their processes and operations, purchase or build the necessary equipment, and also retrain their workers. Thus, it may take some time for the benefits of this policy to be achieved. Besides, it also depends on whether labour can be substitutable by machines.
- Another policy is to increase the supply of local labour and this could be done by raising the retirement age or to encourage housewives to join the workforce be it full or part time which can be done via arrangements for more flex-working hours, work from home and more students-care services.
- HOWEVER**, elderly who do not need the income to maintain their standard of living, may choose not to work even if retirement age is increased or employers still prefer to hire younger workers. Women who have placed family above work and not been working may still be unwilling to join the workforce or find it difficult to adjust.

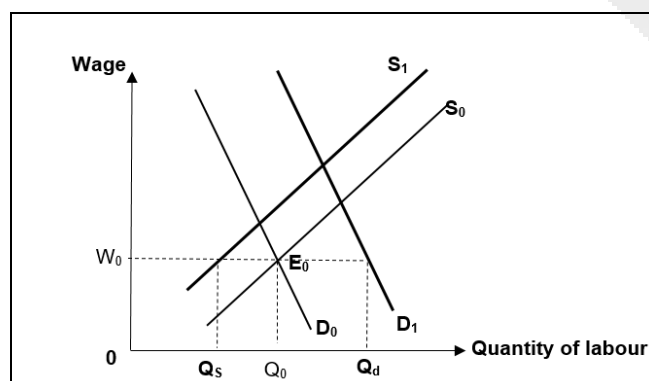
### Conclusion (which policy is most effective)

- For cutting FWL to be effective, it has to be accompanied by raising DRC to contain the demand for local workers. But cutting FWL and raising DRC will result in the influx of foreign workers and this depresses the wages of the locals and put a strain on the country's infrastructure leading to overcrowding public transport, malls and parks especially Singapore is a very small country with limited land. This is not only politically unpalatable but may even worsen non-material living standards. Due to the unintended consequences, cutting FWL can at best be used as short-term measures to temporarily address any labour shortages.
- Increasing retirement age can at most delay the fall in local labour force and still need younger workers to enter the labour force to replace the older workers which is difficult to achieve due to the low birth rates in Singapore. As for housewives to join the workforce, a work-life balance will be critical and arrangements for flexi-working hours or/and telecommute lie in the hands of the private firms' human resource policies and not exactly within the control of the government though it could lead by setting example in statutory boards hiring and via persuasion.
- In the longer term, Singapore firms must wean themselves from low and even mid-skilled workers. Automation is the only way this can be achieved without sacrificing long run growth. Hence automation rather than reducing the FWL and raising retirement age, is in my opinion, the most effective policy for addressing Singapore's labour shortages, especially in the long run.

### Mark Scheme

**L3: Explains how reduction in foreign levy would solve the problem of labour shortage in Singapore and its limitations and two other policies with 1 targeting demand for labour and another supply of labour and their limitations.**

**E3: Justify substantially whether foreign levy is the best policy as compare to the others.**



**For illustration purpose and need not be included in the answers**

- A higher DD and lower SS + disequilibrium at  $W_0$  will mean a shortage of  $Q_s - Q_d$  of labour.
- As the market clears, wages will be pushed up and shortage will be reduced.
- BUT, labour can be immobile for various reasons and supply may not rise in time to meet demand and thus shortages remain as a concern especially if demand keeps rising.



### 2019 Essay Question 3

There was a serious outbreak of flu (influenza) across the world at the beginning of 2018. In many countries, vaccinations were provided free of charge to the most vulnerable people and various Health Authorities urged the elderly and children to get vaccinated as soon as possible.

- (a) Explain why vaccinations against infectious diseases, if left to market forces, might be allocated undesirably. [10]  
 (b) Suppose the government decides to intervene in the market and subsidise vaccinations against infectious diseases. Discuss whether government subsidy is the best policy to ensure vaccinations are allocated desirably. [15]

#### Part (a)

**Note:** The question is about 'desirability' and not just efficiency. Hence, beside positive externality, imperfect information and market dominance, inequity could also be included.

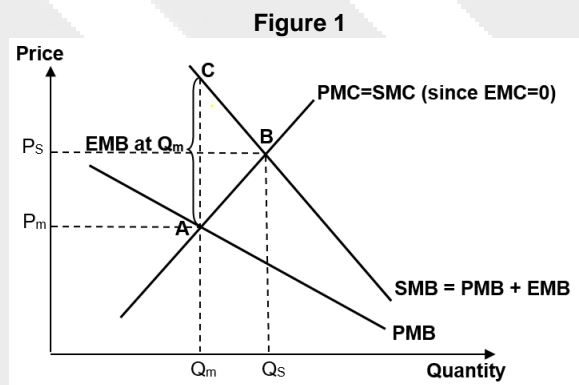
#### Introduction

- Vaccinations against infectious diseases, if left to market forces, might be allocated undesirably - i.e. resulting in market failure when the allocation of resources in the market for vaccines is inefficient, as well as an inequitable distribution of vaccines.
- This essay will explain why this is so as a result of (1) positive externalities, (2) imperfect information, and (3) inequality of income.

#### Body

##### Positive Consumption Externalities

- Positive consumption externalities occur when the consumption of a good positively affects the well-being of third parties.

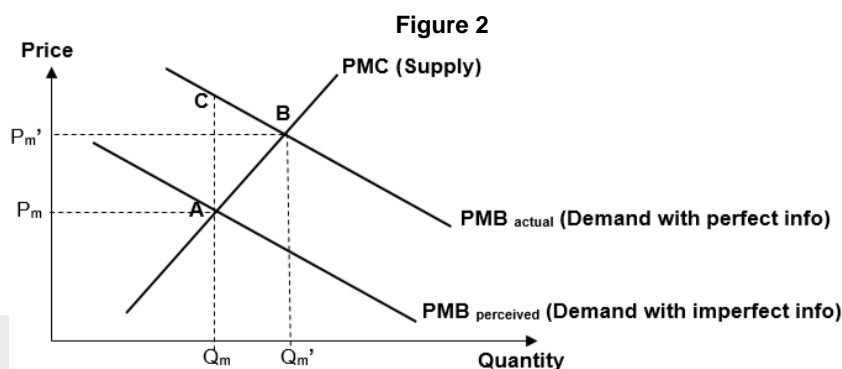


- When deciding how much vaccines to consume, consumers only consider their private marginal cost (PMC) and private marginal benefit (PMB). They will thus consume at  $Q_M$  where  $PMC = PMB$ .
- However, vaccine consumption generates external benefits to third parties. For each unit of vaccine consumed, third parties who do not immunise themselves will also benefit in the form of a lower risk of contracting the illness (e.g. influenza) as there will now be less people who they can potentially contract the illness from. This also translates into a healthier and more productive workforce for the economy which benefits employers too.
- As a result, external benefits cause a divergence between private and social benefits with social marginal benefit (SMB) lying above PMB.
- The socially efficient level of consumption of vaccines lies at  $Q_S$  where  $SMB = SMC$ .
- Hence, when left to the free market, there is under-consumption of vaccines by  $(Q_S - Q_M)$  and an under-allocation of resources to the vaccines market.
- As a result of the under-consumption by  $(Q_S - Q_M)$ , society suffers from a deadweight welfare loss represented by area ABC, thereby resulting in market failure.

##### Imperfect Information

- Consumers may also underestimate their true private benefits from being vaccinated against infectious diseases because they underestimate the risks of contracting the illness. They may also have doubts about the effectiveness of the vaccine in protecting them from contagious diseases.





- Hence, the actual PMB lies above consumers perceived PMB (Figure 2).
- Without perfect information, consumers would consume at  $Q_M$  where  $PMB_{\text{perceived}} = PMC$ .
- However with perfect information, consumer demand for vaccines would be higher at  $PMB_{\text{actual}}$ , and they would actually consume at  $Q_M'$ , where  $PMB_{\text{actual}} = PMC$ .
- As a result, there is an under-consumption of vaccines by the amount  $(Q_M' - Q_M)$ , giving rise to deadweight welfare loss of area ABC in Figure 2, and hence, market failure.

### Inequitable Distribution

- When left to market forces, the price mechanism would allocate vaccines according to consumer preferences reflected by their willingness and ability to pay; i.e. their purchasing power. This would form an effective demand for vaccines.
- However, in reality, due to income inequality, consumers do not have equal purchasing power.
- Hence, the free market would fail to provide vaccines for those without the means to pay for it; i.e. those without effective demand and as a result, the lower-income consumers often lack access to these vaccines - which are considered as essential goods in many societies because of its significance to public health - resulting in an inequitable and hence undesirable distribution of vaccines.

### Conclusion

As a result of the positive externalities generated, consumers' imperfect information about the true MPB of vaccines, and income inequality, the allocation of vaccines is often undesirable when left to market forces.

### Mark Scheme

**L3: Explains at least two source of market failure or one source of market failure together with inequity with appropriate diagram(s) to ensure rigour.**

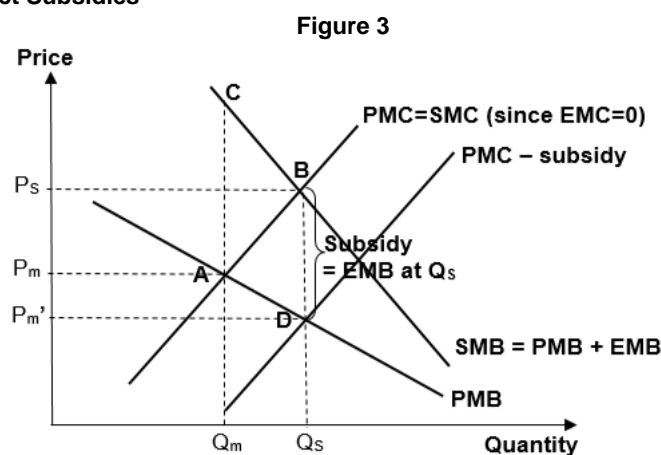
### Part (b)

#### Introduction

As a result of the causes of market failure explained in part (a) - positive externalities and imperfect information - as well as the issue of inequity, governments in many countries often intervene in the market for vaccines via providing subsidies, education, and legislation. This essay will discuss whether government subsidy is the best policy to ensure vaccinations are allocated desirably.

#### Body

##### Subsidies to Producers / Indirect Subsidies







## Suggested Answers to A Level 2019 H2 Economics (ESSAYS) by Hwa Chong Institution Economics Unit

- By giving a subsidy to producers corresponding to EMB at  $Q_s$  on each unit of vaccine, PMC will be  $PMC - \text{subsidy}$  (Figure 3).
- The new market equilibrium where  $PMB = PMC - \text{subsidy}$  would then coincide with the socially efficient quantity  $Q_s$ , where  $SMB = SMC$ .
- The externality would be internalised, removing deadweight loss to society and hence, achieving an efficient allocation of resources in the market for vaccines.
- For vaccines with significant external benefits, such as those against diseases with high outbreak potential; e.g. hepatitis B and measles, governments might consider giving full subsidy; i.e. provide these vaccines free of charge, in order to achieve the socially efficient quantity.
- In order to also ensure an equitable distribution of vaccines, where the most vulnerable people such as the elderly and children are not denied access to these vaccines, full subsidies can be targeted at these demographic groups.
- *Limitations/Trade-offs: However, as a result of imperfect information on the external benefits of various vaccines; e.g. measuring how contagious the infectious diseases are; governments could end up under or over subsidising certain vaccines, resulting in over and underconsumption of vaccines respectively. Furthermore, government budget is limited. In order to increase spending on subsidising vaccines, the government would incur opportunity cost in terms of expenditure in other sectors such as education that is foregone.*

### Education

- In order to correct consumers' misinformation about the true private benefits of vaccines, governments can make use of public education to encourage the consumption of vaccines. This can be in the form of public talks and exhibitions to engage parents of young children as well as the elderly to inform them about the benefits of vaccines.
- As a result, consumers' perceived PMB will shift upwards to  $PMB_{\text{actual}}$  (Figure 2), shifting the market equilibrium quantity to  $Q_M'$ , and eliminating the DWL, hence correcting the market failure due to imperfect information.
- *Limitations/Trade-offs: However, changing consumers' mindsets using education can take a long time. This can be especially difficult given the common misconceptions about vaccines that a number of consumers have. For instance, some consumers may still think that vaccines cause many harmful side effects, illnesses, and even death even though vaccines are actually very safe. Thus, the effectiveness of public education on the benefits of vaccines ultimately depend on the responsiveness of consumers to the information provided.*

### Legislation - mandatory vaccination

- Governments can also consider making certain vaccinations mandatory by law, especially vaccines for diseases that are highly contagious, such as measles. For instance, nine out of thirty European countries have mandatory vaccination for measles.
- Making certain vaccinations mandatory by law would increase consumer demand for these vaccines, and thus, bring the market equilibrium quantity closer to the socially efficient level.
- *Limitations/Trade-offs: Making vaccines mandatory for everyone within a certain demographic group (which is usually the case in many countries) would require it to be enforced rigorously in order to achieve a high coverage. This is likely to result in high administrative and compliance costs. Also, making vaccinations mandatory could actually backfire and result in lower vaccination rates as it can potentially encourage parents who are skeptical about vaccines to skirt vaccination requirements.*

### Conclusion

- For vaccinations to be allocated desirably, I do think that subsidy is the best policy as not only can it correct the problem of underconsumption be it due to positive externality or imperfect information, it also improves equity issue, making vaccines affordable to those lower income groups.
- What needed to be examined will be the exact amount of subsidy to be given, who will receive it and whether it is mandatory. These will be highly dependent on how critical is the disease.
- For very serious illnesses that are highly contagious, everyone should have access to free (100% subsidy) immunisation and government should make it compulsory for all and it will be easier to monitor and harder to circumvent the law.
- To prevent overconsumption and wastage of resources, subsidies will still need to be coupled with public education on the safety of vaccines and their true benefits. Government also can conduct means testing to ensure the most needy will get more subsidy or the vaccines free while the more able ones will get less subsidy.

### Mark Scheme

**L3: Analyses how subsidy works to address the causes of market failure in the market for vaccines and two others as well as their limitations & trade-offs where applicable**

**E3: Justify substantially whether subsidy is indeed the best policy as compare with the others that are being analysed.**



#### 2019 Essay Question 4

In 2017, the annual rate of inflation in Singapore was significantly lower than the average rate for Southeast Asia.

- (a) Explain a possible demand side reason and a possible supply side reason for a rise in the rate of inflation. [10]  
 (b) Assess whether policies design to prevent a large and continuing rise in inflation in Singapore are the most appropriate policies for all economies. [15]

Singapore in 2017

- Wage push inflation: <https://www.straitstimes.com/business/economy/singapore-inflation-at-06-for-2017-after-consumer-prices-edge-up-04-in-december>
- Global recovery growth: <https://www.imf.org/en/Publications/WEO/Issues/2018/01/11/world-economic-outlook-update-january-2018>

(a)

#### Introduction

There are various reasons that results in a rise in inflation rate. Causes can be categorized to either demand pull inflation (AD rising) or cost push inflation (SRAS falling).

#### Body

- Demand reason due to global recovery growth:
  - With the world economies' recovery since 2016, the world's income would increase in general. Singapore being a country reliant on trade, would see that there will be an increase in the export demand, assuming the YED of our exports are generally positive i.e. normal goods.
  - So if the world recovery faster, we are more likely to face a faster rise in net exports and hence in AD and thus a rise in the rate of inflation. Strong growth also can lead to optimism and boost consumption and investment.
  - Draw AD-AS diagram to show and explain GPL increase with AD increasing (with economy near FE).
- Supply Side reasons could be due to rising imported inflation (significant for Singapore since it imports almost everything) or wage-push inflation in which wages rise faster than productivity, increase the cost of production and thus decrease the SRAS.
  - Draw AD- AS diagram to show and explain GPL increasing with SRAS decreasing.

#### Conclusion:

Demand and supply sides can result in an increase in the GPL.

#### Mark Scheme

**L3: Explains both demand-pull and cost-push inflation with the use of AD-AS**

(b)

#### Introduction

Singapore uses both demand and supply management policies to rein in inflation. However, these tools may not necessarily be appropriate to other economies. It will depend on their sources of inflation, limitations and constraints within their economy.

#### Body

**Explain at least 2 types of policies to solve both demand and cost push inflation in Singapore and their limitations/trade-offs**

#### Appreciation of SGD to tackle import-price push (main aim) and demand-pull inflation

- Singapore adopts an exchange rate policy of a gradual and modest appreciation of the S\$. Appreciation of S\$ will make imports relatively cheaper in terms of our domestic currency, directly reducing the price of imported goods. Since Singapore has limited natural resources and is heavily reliant on imports of necessities, raw materials and semi-finished goods for consumption and production of goods for exports, cheaper import prices will lower cost of production for firms in general hence tackling import price push inflation.
- In addition, our export becomes relatively more expensive in foreign currency and this will help to dampen the export demand especially with the global recovery.
- Thus it will deal with both import price push inflation and demand-pull inflation
- **Limitations/trade-offs:** A strong S\$ implies that our exports will be less price competitive, *ceteris paribus*. And hence net exports will fall, leading to slower economic growth. However, a less price competitive export is partially mitigated by high import content of our exports. With appreciation, imported raw materials and semi-finished goods will be cheaper, reducing cost of production of exports. This helps to partially offset the increase in export prices and it is reasonable to assume that Singapore's demand for imports is price inelastic and hence quantity demanded may only increase less than proportionately, partially mitigating the negative effects of appreciation on growth.



### Income Policy to tackle primarily wage-push inflation (revise since this is most unfamiliar)

- An income policy is an attempt to reduce wage push inflation. It is a form of government intervention either directly or indirectly to influence wage setting. - e.g. government passing legislation to limit rises in wages. Such a policy can be classified as a supply side policy. It could take various forms such as a wage freeze or even wage reduction in the public sector. The impact of such a policy will shift SRAS to the right.
- In the context of Singapore, our industrial relations are managed differently from other economies. Our trade unions work closely with the employers' association and the government in the National Wages Council (NWC) to determine appropriate annual wage increases. It meets annually to recommend wage increases *that do not exceed productivity gains*, thereby maintaining our unit labour costs in Singapore. It also ensures the SRAS curve does not shift to the left, thereby preventing wage-push inflation. With the curtailing of trade union power and a low inflation rate environment in Singapore, there has not been any wage explosion. This has prevented the rise in production costs and has ensured low inflation.
- **Limitations/trade-offs:** *However, wage freeze is politically unpopular as it harms households who may already be suffering from high inflation. Also effective wage controls tend to interfere with the allocative functions of the price mechanism. Factor prices must be allowed to fluctuate freely and fully in response to changing market conditions, i.e. to changes in demand, changes in factor supplies, and changes in technology, in order to achieve allocative efficiency over time. Effective wage controls would thus undermine the market mechanism from making these adjustments. What this means is that firms will not be able to attract specific labour they require through higher wages. And when the markets are deregulated (e.g. the restraints are removed), wages and prices often resume to the level they would have reached without the restraints, making the initial policy ineffective.*

### Supply-side policies to tackle BOTH cost-push and demand-pull inflation

- Non-Inflationary economic growth is the situation where potential growth grows in tandem with the actual growth. In such instances, the economy will have adequate resources to meet rising demand for goods and services. Hence there is no upward pressure on prices to rise. This could happen when actual growth is accompanied by increased productivity through supply-side policies. The increase in productivity if faster than the increases in wages would also aid to reduce wage-push inflation.
- Elaborate on various aspects on policies to increase productivity in Singapore.
- **Limitations/trade-offs:** *The benefits of such policies take time to kick in. However, in Singapore the government is far-sighted and has implemented policies to continually raise productivity via skills training, adoption of better technology; more efficient workplace management practices and R&D.*

### Conclusion: Whether policies are appropriate for other economies

- Appreciation of currency: This will have to depend on the nature and openness of the country's economy. If the country does not depend heavily on the import of raw material or intermediate components, then the import price push inflation might not be an issue with the economy and the need to deliberately use appreciation to rein in inflation may not be appropriate. Besides, if the countries are highly depending exports to drive growth, a strong currency will not be favourable. Appreciation should only be used if their external demand causes significant demand-pull inflation. But generally, for big and less open economies, they opt for more traditional contractionary fiscal or monetary policies to bring down domestic demand to reduce inflation.
- Wage-freeze + Tripartite relationship: If labor union is strong which is the case in many developed countries, it would be more challenging to limit wages increases. The bargaining power for labor has been weakening due to globalization trends of outsourcing and offshoring, so this provides room for more discussion amongst the unions, employees and government. But, it is generally not feasible for those sectors such as public transports that serve the domestic market and trade union power remains strong and can always use strikes as their bargaining chip.
- Supply-side policies: In general, any increase in AS will always help inflation no matter what the cause is. Though it may not deal with the inflation at the root of its problem, it will at least serve to mitigate the situation and thus in general, a good to adopt policy for most countries. Nonetheless, they may be less feasible/appropriate for other countries if they face tighter budget constraints as such spending requires long-term commitments and funds.
- In Singapore, due to the uniqueness of its economy and the multi-causal nature of its inflation, multi-dimensional and calibrated approach has to be taken on the demand as well as supply side and they have worked favorably for Singapore keeping its inflation low for most years. In the long run, the most appropriate policy of reducing inflationary pressures is still to adopt long-run supply-side policies to increase the productive capacity of the economy for most economies. Other countries who might want to adopt similar policies will have to first determine the nature and openness of their countries, their own government policy constraints and also the effectiveness of the policies in their countries' unique context which will be determined by factors like multiplier size, price elasticity of the export and import, interest rate sensitivity etc.

### Mark Scheme

**L3: Explains at least two types of policies to address both cost-push and demand-pull inflation for Singapore and their limitations & trade-offs.**

**E3: Justify whether the policies are appropriate for Singapore and other countries.**



### 2019 Essay Question 5

There is potential for governments to achieve both inclusive growth and sustainable growth.

- (a) Explain what is meant by inclusive growth and sustainable growth [10]  
(b) Discuss the extent to which it is possible for a small, open economy such as Singapore to achieve both inclusive growth and sustainable growth. [15]

#### Introduction

- Economic Growth refers to rising GDP or expansion in the nation's real output over time.
- Ideally economic growth should be sustained, inclusive as well as sustainable.

**Note:** While the question did not explicitly ask for sustained growth, without this, a mere explanation on inclusive growth or/and sustainable growth will miss out the growth portion and will be descriptive in nature.

#### Body

##### Explain what is meant by sustained economic growth

- Illustrate with AD-AS diagram in which AD and AS rise in tandem, actual growth moved in tandem with potential growth as output increases.
- In other words, both the AD curve and the AS curve should shift rightwards in tandem such that the economy is able to produce at the full employment output without creating inflationary pressures.

##### Explain what is meant by inclusive growth

- Inclusive growth is economic growth that is distributed fairly across society and creates opportunities for all.
- The aim of inclusive economic growth is to ensure a more equitable distribution so that none is left behind or excluded from enjoying the fruits of economic success. This is sometimes described as a "rising tide lift all boats"
- A sign of inclusive growth is falling income inequality between the rich or high income and poor or low income households as measured by the Gini coefficient.
- Statistically, the Gini coefficient is used as a common measure of income inequality with the value of 1 representing perfect equality and value of zero perfect inequality. Inclusive growth is characterised by stable or falling Gini coefficient over time.
- On the other hand, rising Gini coefficient signifies widening or sharp income disparity. If left unchecked may lead eventually to disunity and social tension between rich versus poor. In practice, inclusive growth invariably involves government redistribution of income such as transfers and taxes to mitigate widening income disparities over time.

##### Explain what is meant by sustainable Growth

- Sustainable Growth refers to economic growth that is compatible with the non-depletion of non-renewal resources which is measured by a concept called the Green GDP.
- The aim of measuring green GDP is to ensure that economic growth does not lead to excessive environmental degradation which may override the benefits of economic growth in the long run and adversely affect the welfare of future generations.
- Environment degradation occurs in several forms such as air pollution from industrial waste and burning of forests, CO<sub>2</sub> emissions from vehicles and factories causing global warming and harmful disposal of food, plastics bags and containers and electronic waste. Marine life is destroyed by fish ingesting plastic waste and food waste emits methane which further exacerbate global warming.
- Green GDP is a term used generally for expressing GDP after adjusting for environmental damage. It is calculated by subtracting resources depletion, environmental degradation from the traditional GDP figure.
- Formula:  $\text{Green GDP} = \text{Traditional GDP} - \text{Net Natural capital consumption}$

#### Conclusion:

To sum up, whilst the key objective of economic growth is to boost society's welfare there is a clear difference between inclusive and sustainable economic growth. The former pertains to fair distribution of the fruits of economic growth whilst the latter pertains to the sustainable use of non-renewal resources.

**L3:** Explains sustained, inclusive and sustainable growth. Includes the use of AD-AS for sustained growth, Gini coefficient as a key measure of income distribution for inclusive growth and Green GDP and/or environmental degradation for sustainable growth





## Suggested Answers to A Level 2019 H2 Economics (ESSAYS) by Hwa Chong Institution Economics Unit

### Part (b)

#### Introduction

In Singapore the government aims to achieve sustained, inclusive and sustainable economic growth. Singapore is a small and open economy. To achieve these macro-goals there are challenges and vulnerabilities due to the small and openness of the economy. Notwithstanding these challenges the extent it is possible to achieve these macro-goals is also dependent on the type of policies adopted to overcome them.

#### Body

##### Explain Singapore policies to help achieve sustained growth and limitations/trade-offs.

- Long-run supply-side policies to boost LRAS to support growing AD, together with signing of Free Trade Agreements to improve global competitiveness in terms of trade and FDI to drive growth.
- MAS takes the stance of a gradual and modest appreciation of the SGD to rein in inflation.
- Limitations/Trade-offs: Singapore has no domestic sources of energy, mineral deposits, forestry, fisheries and is dependent on the world for resources to sustain growth. Its vulnerability is so stark that Singapore's dependence on external sources of supply extend to even drinking water and sand for construction. Any major disruption to global supply chain would certainly threaten Singapore's ability to sustain economic growth. Besides, strong economic growth can lead to larger income disparity and environmental degradation.*

##### Explain Singapore policies to help achieve inclusive growth and sustainable growth and limitations/trade-offs.

##### Inclusive growth policies

- In recent years the rising global trend of income inequality has been attributed to the combined forces of globalisation with greater factors mobility and rapid technological changes. These have led to the situation of rising wages for skilled workers in selected sectors while wages of low-skilled workers tend to fall with influx of blue collar workers or those working in 'sunset' industries experience stagnated wages. Being a very open economy, these have accentuated income or wage disparity between skilled and unskilled workers in Singapore.
- To narrow the income inequality gap and improve social mobility/levelling up, the government has invested heavily in providing access to education from pre-school to tertiary level for every eligible person so that none is denied access to education because of lack of financial means. It also heavily subsidises skill training and upgrading programmes to help unskilled workers move up the income ladder. The progressive wage model is used for security guards, cleaners and gardeners and wage subsidy such as workfare Income supplement (WIS) for low-income earners.
- Medical services are also made accessible to every citizen via government subsidies and means-testing. The HDB or affordable public housing scheme has successfully housed 90% of households including many middle and low-income families.
- However unlike western developed countries, the Singapore government eschews the use of steep progressive taxes on personal incomes and welfare hand-outs such as unemployment benefits to redistribute incomes as they are deemed as sapping the incentive to work. So while the pie might have grown for most Singaporeans, the gap could still remain big.*

##### Sustainable growth policies

- As a small island state, Singapore is particularly vulnerable to potential catastrophic floods due to rising sea levels caused by global warming.
- Thus Singapore has adopted a slew of "green policies" to promote greener living.
- Notably the government has put in place stringent regulations to control industrial and vehicular pollution and deter littering and dumping of waste into rivers and waterways. Singapore has implemented a carbon tax which is the first in Southeast Asia and which it applies economy-wide with no exemptions. Being a small country, Singapore is disadvantaged in alternative energy, with limited sources of renewables other than solar energy. In view of this, Singapore is installing large-scale solar panels that float in its reservoirs and off its shores.
- On the consumer front the government has also stepped up the promotion of green lifestyle – "reduce, reuse and recycling" and promote the use of electric or green cars (e.g. blue SG car-sharing) to reduce CO2 emissions.
- Limitations: Takes time for habits to change and for firms to see the benefits of turning green and not just focusing on costs.*

#### Conclusion

- Singapore has been successful in achieving non-inflationary growth for most years except years when there was worldwide recession that adversely impact its exports leading to recession or high oil or food prices that spiked imported inflation. Supply-side policies, FTAs and a strong SGD do work favourably for Singapore's interest despite their limitations. The government has leveraged on technology to overcome over-reliance on key imported resources such as sand and water and also started to build up its capacity on necessities and source for more suppliers to withstand disruptions in global supply chain better.
- The focus now is to make economic growth more expansive to benefit most sectors, reducing income inequality and moving towards greener sustainable growth.
- Whilst Singapore may not have the world's lowest Gini Coefficient, it has made significant improvement in income redistribution especially after government tax and transfers. Singapore also ranks highly for Global Social Mobility Index (*In 2019, Singapore was ranked #20 out of 83 economies and is significant given that it is one of the only 2 Asian economies in the top 20 ranking.*) This shows that the policies to level up those from less privilege backgrounds are working well.
- Moreover, the government has not only control pollution and congestion successfully but also adopted green lifestyles from switching to green energy, green buildings and even green cars. In fact, its contribution to global warming or CO2 emission is a mere 0.03%, not just a result of our smallness since we produce for a global market, but government efforts to greener growth.
- All these indicators clearly show that sound economic policies can be implemented to overcome the inherent vulnerabilities associated with a small and open economy.

#### Mark Scheme

**L3: Briefly explains policies in Singapore that aim at achieving non-inflationary growth (rise in both AD & AS), inclusive and sustainable growth and their limitations & trade-offs.**

**E3: Justify whether Singapore despite being small and open could indeed achieve inclusive and sustainable growth.**

*Note: For this question, the breadth is more important than the depth as there are many aspects of growth.*



**2019 Essay Question 6 (CLT)**

Globalisation has been a major influence on Singapore's economic performance. The uncertainty and instability happening around the world in recent years could threaten the economic benefits that globalization brings.

(c) Explain two different factors that have enabled globalization to occur. [10]

(d) Assess whether current global economic developments will have a positive or negative effect on Singapore's future economic performance. [15]

(a)

**Introduction:**

- Globalisation refers to the integration or inter-connectedness of national economies through trade of goods and services, foreign direct investment, capital flows, spread of technology and labour migration and many factors have contributed to the trend towards globalisation.
- While the main factor is the comparative advantage of nations, improvements to technology and communication links have made international transactions more seamless.

**Body**

Explain one of the main factors that gives rise to globalization is international trade.

- Free trade is the ability to exchange goods across borders without any restrictions. In accordance to the theory of comparative advantage, there will be an increase in economic welfare for countries if they specialize in producing goods where they have a lower opportunity cost.

	Production of textiles and cars before specialization and trade		Opportunity Cost of producing 1 unit of		Production with: US: Partial Specialize with 75% resources in cars and 25% in textile China: Full specialization in textile		Consumption after trade by exchanging 12T for 12C TOT: 1T:1C	
Countries	Textiles	Cars	Textiles	Cars	Textiles	Cars	Textiles	Cars
US	20	30	3/2 C	2/3 T	10	45	22	33
China	15	10	2/3 C	3/2 T	30	0	18	12
World	35	40			40	45	40	45

- Based on the table above, although US is able to produce more of both goods than China, both countries can still gain from trade if they specialize according to their comparative advantage.
- Before specialization, US has to give up 3/2 unit of cars for 1 unit of textile or 2/3 unit of textiles for 1 car. On the other hand, China has to give up 2/3 unit of cars for 1 unit of textiles or 3/2 unit of textiles for 1 unit of car. This implies that US and China have a lower opportunity cost or comparative advantage in producing cars and textiles respectively.
- If US partially specializes in cars using 75% of resources and 25% of resources in textiles while China goes into full specialization in textiles, and agree on the terms of trade of 1 unit of textiles to 1 unit of cars (TOT has to lie within the opportunity costs ratios for textiles and cars:  $2/3C < 1T < 3/2C$  or  $2/3T < 1C < 3/2T$ ) and exchange 12 units of textiles for 12 units of cars, US gains 2 and 3 units of textiles and cars respectively and China gain 3 and 2 units of textiles and cars respectively. The world output also increases by 5 units each for textiles and cars. After trade and specialization, both countries can consume outside their PPC.
- If countries then traded these goods, free trade becomes mutually beneficial, assuming that there are no transport costs and no barriers to trade. Countries can gain from trade by being able to consume beyond its production possibilities. Globalization occurs when nations are more inter-connected through cross border trade.

Explain another factor that gives rise to globalization is international trade.

- Technological factor: Digital technologies are changing how business is done across borders and broadening participation – lowered barriers to entry and cost of production. Even as global flow of physical goods and finance flattens or declines, cross-border use of bandwidth has grown rapidly. This has presented unprecedented opportunities to SMEs to become global players. Digital technologies have contributed to the rise of e-commerce such as that increased cross-border exchange of goods, ideas and data which enabled globalization to occur. E-commerce (electronic commerce) is the activity of electronically buying or selling of products on online services or over the Internet.
- Institutional factor: In today's globalised world, it is much easier for workers to move from one country to another to seek employment. Countries generally welcome foreign labour which are needed to supplement the local workforce and contribute to economic growth. Singapore allows the inflow of foreign workers to take up jobs which Singaporeans "cannot do" such as highly-skilled jobs like researchers and those that Singaporean "don't want to do" such as low-skilled unpopular jobs like cleaners and construction workers.

**Mark scheme - L3: Explains the benefits of trade based on CA theory and ONE other factor. CA theory includes the concept of specializing on product or service with lower OC, and gain by being able to consume beyond one's PPC.**



(b)

**Note:** This essay should focus on the potential effects of current global economic developments such as the US/China trade war and 'Brexit' on Singapore future economic performance and not the benefits and drawbacks of globalisation.

### Introduction

- International trade particularly benefits small countries with limited domestic market such as Singapore. Export is an important source of economic growth for Singapore and competition from imports could also cause domestic producers to be more efficient. Moreover, the inflow of FDI and foreign talents can reduce cost of production which increase Singapore's productive capacity, giving rise to actual and potential growth as well.
- But deglobalisation sentiments are on the rise in recent years which are seen in some of current global economic developments such as Trump's anti-free trade stance, Brexit and protests in Hong Kong.

### Body

#### Negative impact of deglobalisation on the Singapore economy

- Since some countries such as the US and the UK, feel that globalisation and free trade have not benefitted them, protectionist sentiments abound leading to more inward-looking policies. Such rise in nationalism and protectionist stance served to restrict trade in the form of trade barriers among Singapore's major trading partners.
- For instance, the US-China trade war, not only has adversely affected China's employment and income, it also has a negative contagion effect on Singapore as countries are inter-connected via global supply chain relationship.
- The fall in exports of China to US would mean less related component parts would be exported from Singapore to China. This would reduce export and investment in Singapore, retarding actual growth and lead to unemployment. Illustrate with AD-AS diagram.
- Singapore balance of trade could also be dampened since a fall in demand for export result in a fall in both price and quantity of exports.
- Unlike bigger countries such as US or China, Singapore's domestic market would be too small to support expenditure switching policies like tariffs and quotas which sought to reduce imports and encourage consumption of domestic goods and services. In view of the US-China trade war, and a more polarised world, it is difficult for US' partners and allies such as Singapore to decouple from China if they are being forced to take side.

#### Positive impact of deglobalisation on the Singapore economy (future developments)

- In view of US's tariff on imports from China, many firms had relocated their operations from China to other low- cost countries such as Vietnam and Brazil. The loss in export orders from China can be compensated by making trading links with new supply chain partners of such emerging economies. Diversifying our trading partners not only could provide opportunities for Singapore economy to experience sustained growth, it also helps to mitigate any negative contagion effect caused by over-dependence on any export market.
- Moreover, Singapore's political and social stability would enhance its attractiveness as a financial centre in comparison with Hong Kong in the light of the latter's series of ongoing protests.
- Such uncertainties in global developments might hasten the pace of Singapore to restructure the economy to be less dependent on export of goods to export of services which are less susceptible to trade restriction in view of the trend towards protectionism. Hence, Singapore's participation in the World Trade Organisation efforts to promote trade through updating rules to suit the digital economy, is an effort to expand its digital economy.

### Conclusion:

- Being a highly trade dependent country, the current global economic developments towards rising protectionism and a more polarized world had resulted in slow global economic growth. The openness of Singapore's economy would make it difficult for her to be totally shielded from the negative repercussions of the contraction of global trade and growth. Hence the impact of de-globalisation on Singapore's economy is **more negative than positive**.
- However, the negative impact can be mitigated by Singapore's multilateral trading relationship and maintenance of friendly relationship with many countries. Singapore's size and non-partisan approach are assets in a pessimistic global environment. Being small, Singapore can stay nimble and relevant in its global strategy by keeping digital trade open and building a network of over 24 FTAs with 36 trading partners that account for over 85 per cent of global gross domestic product and more than 90 per cent of Singapore's trade. FTAs collectively could save Singapore businesses millions in tariffs and provide legal certainty which help to safeguard the interests of Singapore business in overseas markets.
- In response to a highly polarized world and in view of the increasing deterioration of China-US relation, Singapore can mitigate any negative fallout by standing together with common like-minded partners to make our voices heard globally. Examples of such partners are ASEAN, and other small countries around the world, who have open outlook on trade and multilateralism. Singapore is part of the 30-member Global Governance Group, which provides inputs to the Group of 20, and the UN's Forum of Small States, which Singapore founded and still leads. In view of rising protectionism and even the possibility of unfair trade, there will be times when Singapore has to make decision when national interest is at stake. It is important for Singapore to be acting on the principles of fair trade and work together with international institutions such as the WTO to resolve any trade conflicts.

### Marking Scheme

**L3:** For an answer that is able to provide a correct, clear in-depth and **2-sided views** of whether current global economic developments will have a positive or negative effect on Singapore's future economic performance. Answers are with reference to the impact of current global economic developments such as the growing anti-globalisation & protectionist stance as in the US/China trade war, 'Brexit' and the Hong Kong protests.

**E3:** Justify substantially why Singapore will overall experience positive or negative impact from the current global economic developments.