DUNMAN HIGH SCHOOL

H1 Preliminary Examinations 2013

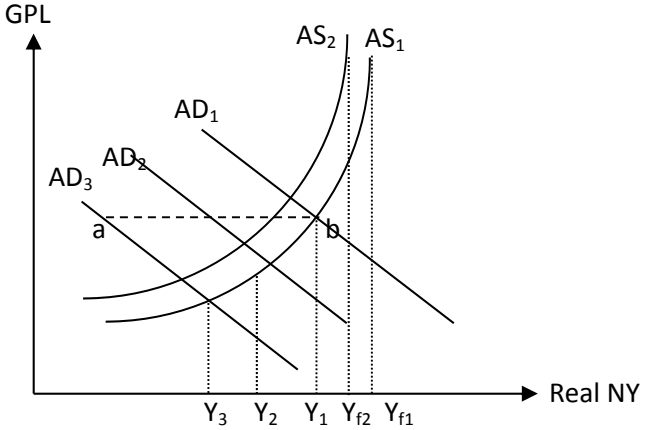
Economics **8819**

Answer and Mark Schemes

Suggested Answers

Case Study Question 1

(a)	Using Figure 1, compare the trend in food and fuel prices between March 2001 and March 2011.	[2]
	This question requires candidates to describe the *1. similarity in the general trend observed for food and fuel prices over the stipulated period, and* *2. difference in the trend* Generally, both increased [1], but fuel price rose and fell more sharply than food prices. [1] ✓ 1 mark for similarity and 1 mark for difference	
(b)	With reference to Extract 1, explain why the Thai government must intervene in setting up infrastructures as such canals and flood control systems for a more efficient allocation of resources.	[4]
	This question requires candidates to *1. identify that these infrastructures exhibit the characteristics of public goods* *2. explain how these public goods cause the market to fail, which justifies why the Thai government must intervene to achieve a more efficient resource allocation* • Infrastructures such as canals and flood control systems are public goods that exhibit the characteristics of non-rivalry and non-excludability. • Non rivalry – A good is non-rivalled in consumption when the consumption of the good by one person does not diminish the quantity available for others to consume and benefit from. When the canals and flood control systems are built, all citizens who live in the vicinity of these infrastructures benefit from reduced risks of flooding, and such benefits will not be reduced with every additional consumption. Thus the marginal cost (MC) of preventing flooding via construction of infrastructures to an additional resident within the country is negligible. Since the allocative efficient outcome is at price = MC, where the value (price) that consumers place on these infrastructures is the same as the cost of the resources used to produce an additional unit for additional consumption, the price to charge for an efficient allocation of resources to the production of these infrastructures should be at zero. • Non excludability – A good is non-excludable when it is impossible or prohibitively expensive to prevent or exclude anyone including non-payers from consuming the good once it is produced. When these infrastructures are built, it is likely that there is less risk of flooding during the monsoon season. Even if one does not pay for these infrastructures, he / she will still be protected from flooding risks. Since there is enjoyment of protection without paying, this leads to the problem of free-riding, which is supported by the evidence in Extract 1 “a good that cannot be confined to those who have paid for it”. • Under the market forces, there will be no provision of these infrastructures because the price mechanism is unable to function, since consumers are not willing to pay for these infrastructures due to the ability to free-ride. This means that there is no effective demand for these infrastructures, causing profit-motivated producers to have no incentive to produce these infrastructures at all since there is no revenue to be earned, leading to no supply of these infrastructures by the private producers. This leads to complete market failure where there is zero production of infrastructures such as canals and flood control systems.	

	• However, these infrastructures are desirable and beneficial to the society. Therefore, since the free market fails to allocate resources efficiently within the economy as no resources are allocated to the production of these infrastructures which leads to severe welfare loss for the society, the Thai government which acts in the interests of her citizens must intervene in setting up these infrastructures to bring about a more efficient allocation of resources. ✓ 2 marks for a well-developed explanation on each characteristic of public good ✓ Cap at 3 marks without referring to evidence and / or not applying to the context of infrastructures such as canals and flood control systems	
(c)	With reference to Extract 1 and Table 1, to what extent will the Thailand flood bring about harmful effects on its macroeconomic performance?	[6]
	This question requires candidates to *1. identify and explain the impact of the Thailand flood on the 4 macroeconomic goals* *2. sieve out the relevant information from the case materials to determine if the harmful impact is to a large or small extent* Macroeconomic performance – need to link to 4 macroeconomic goals <u>Thesis: harmful effects to a large extent</u> • As seen from Extract 1, the Thailand flood has claimed more than 300 lives and may lead to long-term loss of foreign direct investment (FDI) due to a lack of adequate infrastructure to handle flooding and poor governance that hurt Thailand's reputation as a reliable and conducive business environment for foreign investors. With a reduction in quantity of resources as well as a loss of FDI results in less transfer of technology and management expertise respectively, these will cause the aggregate supply (AS) to shift from AS_1 to AS_2, reducing the productive capacity of Thailand's economy from Y_{f1} toY_{f2}. Potential growth is thus hindered. Also, a fall in FDI causes aggregate demand (AD) to fall from AD_1 to AD_2, there exists a surplus leading to accumulation of inventories, and firms producing capital goods cut back production in the next production cycle. In the process, less workers are employed (rise in cyclical unemployment) who receive lower factor incomes, resulting in income-induced consumption to fall, thereby reducing AD further to AD_3. This is the reverse multiplier effect, which continues until the initial fall in injections equal total fall in withdrawals. The final outcome is a rise in cyclical unemployment from Y_1Y_f to Y_3Y_f.  • Furthermore, the Thailand flood is likely to have destroyed capital machinery in factories, hence disrupting the production of goods and services, causing firms to incur heavy losses. In order to minimise losses, firms lay off workers as evidenced from '14,000 companies employing more than 600,000 workers were forced to shut	

down', especially the computer disk drive industry and the automotive industry which is one of the hardest hit industries. Given that the former is a leading exporting industry, Thailand's balance of trade (BOT) is expected to worsen as well. Coupled with a fall in FDI from 2010 to 2011 as seen from Table 1 where the net inflow of FDI fell both in percentage and absolute terms, the financial account of the balance of payments (BOP) declines, worsening Thailand's BOP.

Anti-thesis: harmful effects to a small extent

- According to Table 1, between 2008 and 2012, exports increased by the greatest percentage (5.6%) in 2011. Even though the leading export industry – computer disk drive industry was hit by the flood, exports did not face an adverse impact. Ceteris paribus, BOT improves.
- Components of AD – private consumption expenditure and gross fixed capital formation still increased both in absolute and percentage terms albeit the Thailand flood. This is further supported by the rise in real GDP in 2011, which shows that economic growth did not decline despite the flood.
- In the subsequent year 2012, Thailand received more net inflows of FDI both in absolute and percentage terms, reflecting that foreign investors still had confidence in Thailand economy, and still deems Thailand as an attractive investment country. Thus, potential growth is unlikely to be hindered, and the financial account of BOP improves.

In conclusion, the Thailand economy is affected adversely by the flood in the short run, but it recovered in 2012. However, for a more complete / accurate assessment as to whether the Thailand flood will bring about harmful effects on its economy to a large or small extent, more data such as the macroeconomic indicators over a longer time period after the 2011 Thailand flood is required.

Level	Mark	Descriptors
L3	5 – 6	2-sided, well-developed explanation of the impact of the Thailand flood on Thailand's economy based on at least two macroeconomic objectives / aims, supported with the use of contextual evidence from the case materials. Cap at 5m for an answer without any mention of FDI.
L2	3 – 4	- Undeveloped explanation of the impact of the Thailand flood on Thailand's economy based on at least 2 macroeconomic objectives / aims OR - Rigorous explanation of the impact of the Thailand flood on Thailand's economy but only for 1 macroeconomic objective / aim OR - 1-sided viewpoint on adverse impact to a large extent or adverse impact to a small extent OR - Theoretical explanation without the use of evidence from the case materials
L1	1 – 2	Identifying / stating the impact of the Thailand flood on Thailand's economy

(d) (i) What is meant by price elasticity of demand? [1]

Price elasticity of demand measures the responsiveness of a change in quantity demanded of a good to a change in its price, ceteris paribus.

(ii) Comment on whether rising food price 'will reduce families' expenditure on other goods and services' (Extract 2). [3]

		This question requires candidates to *1. identify that expenditure is measured by the product of price and quantity* *2. explain how rising food price reduce families' expenditure* *3. determine if other factors apart from price affects families' expenditure* Comment – 2-sided viewpoint <u>Thesis – yes, rising food price will reduce families' expenditure on other goods and services</u> The demand for food is price inelastic, as there are no close substitutes for food, and food is a basic necessity. Hence, a rise in food price leads to a less than proportionate fall in quantity demanded for food, resulting in an increase in total expenditure on food, which is calculated by the product of price and quantity. **For any given income**, the rise in food expenditure will thus 'reduce families' budget on other goods and services such as healthcare and education, especially the poor who spend 60 per cent of their household budget on food', as stated in Extract 2. <u>Anti-thesis – no, rising food price will not reduce families' expenditure on other goods and services</u> It is assumed that the incomes of families remain unchanged, hence the rise in food price will reduce families' expenditure on other goods and services. If the incomes of families rise, for e.g. general rising trend of real GDP in Thailand between 2008 and 2011, despite the rise in food price, families' expenditure on other goods and services will not fall. ✓ 2 marks for thesis, and 1 mark for anti-thesis. Candidate will still get the 1 mark for anti-thesis even if it is written as an assumption "for any given income".	
(e)	**(i)**	Using supply and demand analysis, identify and explain reasons to account for the 'sharp increase in the region's food prices' (Extract 2).	[6]
		This question requires candidates to *1. identify and explain the demand and supply reasons attributing to the rise in food prices* *2. sieve out the relevant demand and supply reasons from the case materials* *3. explain the extent / magnitude of the food price increase using PED & PES* <u>Supply reasons</u> • From Extract 2, extreme weather events such as droughts and floods across Southeast Asia caused production shortfalls due to destruction of agricultural crops. In addition, higher oil prices cause transport costs to rise, raising production costs of the food supply chain. • Therefore, farmers are less willing and able to produce agricultural crops at each and every price level, thereby reducing the supply of food. • Also, there were export bans by some food-producing countries to protect domestic supply, causing global supply of food to decline since farmers are less able to sell food on the global market. <u>Demand reasons</u> • Due to rising income in emerging economies such as China and India, consumers in these countries face higher purchasing power, causing them to	

be more willing and able to buy more normal goods and services at each and every price level. Hence, the demand for normal goods like food increases. This is supported by the evidence in Extract 2 "growing appetites for grains, oil, seeds, sugar and livestock in emerging economies such as China and India".

- With a fall in supply of and rise in demand for food, there exists a shortage at the original price level, causing an upward pressure on price of food.
- Furthermore, demand is price inelastic due to lack of substitutes and high degree of necessity. A price inelastic demand means that for every price increase, quantity demanded falls by less than proportionately, ceteris paribus.
- Supply is also price inelastic in the short run as it takes time to grow and harvest agricultural crops / rear livestock to maturity. A price inelastic supply means that for every price increase, quantity supplied rises by less than proportionately, ceteris paribus.
- Hence, coupled with price inelastic demand and price inelastic supply, to eliminate the same shortage, price has to increase more sharply.

Level	Mark	Descriptors
L3	5 – 6	2-sided, well-developed explanation of why food price rise sharply. Cap at 5m for an answer without explaining price inelasticity of demand and supply.
L2	3 – 4	- Undeveloped explanation of why food price rise OR - 1-sided but rigorous explanation of why food price rise OR - Theoretical explanation without the use of evidence from the case materials
L1	1 – 2	Identifying / stating the reasons for food price increase

(ii) As a consultant economist, what options would you present to the Singapore government in response to the high inflation in Singapore as described in Extract 4, and what would you recommend? Justify your answer. [8]

This question requires candidates to

1. *sieve out at least two pertinent and relevant policies from the case materials that help to reduce high inflation in SG*
2. *explain how these policies work*
3. *sieve out relevant information from the case materials for evaluation of the policies, and thus come to a reasoned judgment as to which policy should be chosen in response to the high inflation in SG*

- Inflation is defined as the sustained increase in general price level. There are two main types of inflation, namely, demand-pull and cost-push inflation. Different policies are required to alleviate both types of inflation. The policies stated in the case materials are: (1) a broad range of supply side policies to reduce bottlenecks in commodity-based industries [Extract 2], (2) reduction of trade barriers [Extract 2] and source diversification [Extract 3] (through signing of more FTAs), (3) increasing productivity [Extract 2], (4) appreciation of Singapore dollar (SGD) against major trading partners of SG [Extract 3] and (5) technological innovation and internet [Extract 4]. The more relevant policies for Singapore are (2), (3), (4) and (5).

1) Broad range of supply side policies to reduce bottlenecks in commodity-based industries → not so relevant to Singapore that does not have much commodity-based industries

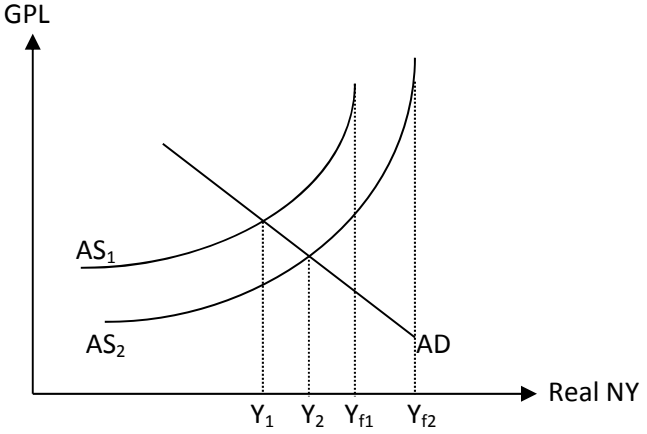
2) Reduction of trade barriers and source diversification (through signing of FTAs)

- Further reduction of trade barriers such between countries → SG firms are more able to gain access to a greater availability of factor inputs from abroad. Should there be local food shortages, lower trade barriers allow SG firms to import from surplus producers as stated in Extract 1. This reduces the possibility of cost-push inflation.
- Diversification of import sources. In light of the Thailand flood causing a supply shock of rice, a staple food for Asians, SG can still import rice from a variety of sources – including Vietnam, India and the United States. In addition, this helps to ensure a resilient supply of food and minimise volatility in food import prices caused by short-term supply shortages, thereby mitigating imported inflation.

<u>Pros and Cons of policy</u>

- This policy is more effective in relieving external sources of inflation. Nevertheless, if the inflation is domestically induced by "higher prices of cars and housing as well as higher wage demands due to tight labour markets" as stated in Extract 4, this policy is unlikely to alleviate the high inflation in Singapore. Other policies targeted at the specific markets will be more useful in reducing inflation caused by internal sources.
- If the inflation is a global phenomenon like what happened during 2007 food and oil inflation, this policy is of limited use to curb imported inflation, since all countries will be facing inflation.

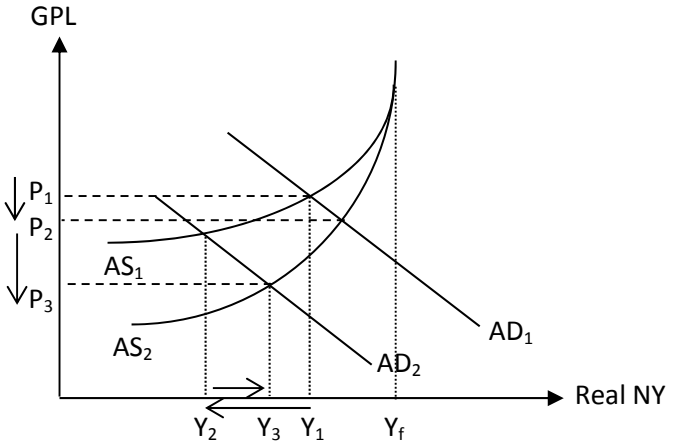
3) Increasing productivity (through supply-side policies) → e.g. SG implements policies such as:
   - Continuing Education and Training (CET) to boost productivity of the labour force → increase amount of output produced within a shorter time → c.p. reduce unit cost of production → AS shifts downwards
   - Productivity and Innovation Credit (PIC) Scheme to encourage firms to raise productivity through automation or sending workers to upgrade their skills respectively
   - Workfare Training Support (WTS) Scheme that encourages older low-wage workers to go for training to ensure that workers are constantly equipped with the necessary skills for the knowledge-based and rapidly changing economy → increases employability of workers → increases productive capacity of Singapore → AS shifts rightwards. These aim to raise the productive capacity of the economy from Y_{f1} to Y_{f2}, enabling SG to achieve non-inflationary sustained economic growth in the long run.



Pros and Cons of policy

- The success of this policy depends on the receptiveness of the labour force in wanting to upgrade their skills and their ability to learn new skills. Given SG's ageing population, it may be increasingly difficult to equip the elderly with new skills through retraining, as they may need more time to pick up these skills with relative ease.
- Training may take a while to completed (thus not a short term measure), which may increase the reluctance of the unemployed to undertake training. If inflation is of an immediate concern to SG, other short-run measures need to be implemented.
- If there is only one sole breadwinner for the family, during the course of training, the family may have to live on savings as there is no income received. Thus, employees may not be willing to take up the training course, especially for the WTS Scheme (for the low-wage workers).

4) Appreciation of SGD against SG's major trading partners → price of imports in SGD falls, and since Singapore lacks natural resources, the demand for imports is price inelastic. Hence, a fall in import price leads to a less than proportionate rise in quantity demanded for imports → total expenditure on imports (including factor inputs) fall → fall in unit cost of production (COP) → AS shifts downwards from AS_1 to AS_2 → firms pass on lower unit COP in the form of lower price to consumers from P_1 to P_2 → curbs imported inflation.



At the same time, price of exports in foreign currencies (SG's major trading partners) rise → quantity demanded for exports falls more than proportionately due to many available substitutes in the global market. Coupled with fall in domestic consumption assuming that consumers switch away from domestic goods to relatively cheaper imported goods, AD falls. Via the reverse multiplier effect as explained in part (c), the multiple fall in production of goods reduces demand and hence competition for factor inputs → decreases prices of factor inputs → unit COP of firms fall → pass on as lower price to consumers from P_2 to P_3 → fall in demand-pull inflation

Pros and Cons of policy

- This policy is particularly effective in relieving external sources of inflation. Given the sharp rise in food prices, this policy targets at the root cause – imported inflation, supported by Extract 3 evidence "helped to dampen the rise in prices of our food imports". Nevertheless, if the inflation is domestically induced, as explained earlier, other policies targeted at the specific markets will be more useful in reducing inflation caused by internal sources.
- However, a strong SGD reduces price competitiveness of SG's exports,

causing foreigners to switch away from consuming more expensive SG exports to relatively cheaper exports of other countries, causing actual growth to fall from Y_1 to Y_3. According to Extract 3, "the strong SGD could have played a significant part in July's poor figures, where electronics exports dived 16.9 per cent in July from the same month last year'.

5) Technological innovation → helps to raise productive capacity of the SG economy, thereby relieving inflationary pressures in the long run as explained earlier.

The Internet can quickly distribute information and knowledge to anyone in electronic format to anywhere in the world very quickly and easily at virtually no cost → reduces the quantity of resources such as land, labour and /or capital machinery used to:

- manufacture paper
- publish information / content on books,
- transport these books to distribution centres and subsequently to bookstores

In turn, scarce resources can be used to produce more of other goods and services, increasing productive capacity of the SG economy. Also, since information can be efficiently disseminated at virtually no cost → help to greatly improve productivity and reduce unit COP → shifts AS downwards. As explained earlier, SG achieves non-inflationary sustained economic growth in the long run.

Pros and Cons of policy

- Policy takes time to take effect.
- Given the size constraints of SG, it is not possible to merely rely on technological innovation and internet to push production frontiers. As stated in Extract 4, 'every economy and country has physical limits, especially for a small economy like Singapore; … only so much that technological innovation and the Internet can do to push Singapore's production frontiers'. Other policies are required to complement this policy.

Conclusion

Choice of policy depends on:

- ✓ Root cause of inflation – internal (domestic) or external source
- ✓ Time lag of policy – consider policies that take effect more immediately vs. those that require a long gestation period
- ✓ Side effects of policy – select policies with minimal side effects or result in minimal trade-offs with other macroeconomic goals

➔ Multi-pronged approach or complementary / combination of policies (both demand management and supply-side policies) should be implemented simultaneously to reduce high inflationary pressures in SG.

Level	Mark	Descriptor
L3	5 – 6	• Judicious reference to the case material. • A 2-sided well-developed discussion on at least two policies to reduce high inflation in SG, analysing both pros and cons of policies. • Well-illustrated AD / AS diagrams. Cap at 5m if no appropriate diagram is drawn and explained. • Must explain about exchange rate policy.

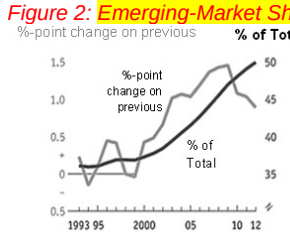
		L2	3 – 4	Undeveloped attempt at explaining points stated. Such an answer is likely to be: - 1-sided (i.e. only thesis or anti-thesis or explains + evaluates only one policy in great detail) or - lacks depth in explanation / analysis or - limited in making reference to case material - Cap at 3m if the candidate provides a purely theoretical analysis and evaluation of at least two policies without any reference to case material.	
		L1	1 – 2	• Undeveloped analysis of the policies. Some valid points.	
		E	1 – 2	• Evaluative judgement using economic reasoning to justify which policy should be chosen.	

Case Study Question 2

a. (i)	Compare the growth rates of the BRIC countries between 2009 and 2011 in Table 2.	[2]
	<table><tr><th></th><th>2009</th><th>2010</th><th>2011</th><th>2012</th></tr><tr><td>World</td><td>-2.2</td><td>4.0</td><td>2.8</td><td>2.2</td></tr><tr><td>Brazil</td><td>-0.3</td><td>7.5</td><td>2.7</td><td>0.9</td></tr><tr><td>Russia</td><td>-7.8</td><td>4.5</td><td>4.3</td><td>3.4</td></tr><tr><td>India</td><td>8.5</td><td>10.5</td><td>6.3</td><td>3.2</td></tr><tr><td>China</td><td>9.2</td><td>10.4</td><td>9.3</td><td>9.4</td></tr></table> The four countries experienced positive growth rate in general for the three year period except for Brazil and Russia which experienced negative growth at the start of the period in 2009. Except for India, the economic growth rate increased over the given period from 2009 - 2011 Their economic growth rates actually peaked in 2010 and fell after that. China consistently achieved the highest growth rate over the three year period (Any two comparison for 2 m)	
(ii)	Using Extract 5, explain how the growth rates in the BRIC countries affect the pattern of trade. *From Extract 5* *Among them, the four BRIC countries — Brazil, Russia, India and China — are identified as the future economic powerhouses. These countries are propelling the global recovery as their economic growth rates exceed global averages. With the 42% of the global population that reside within them becoming more affluent and seeking higher living standards, the rise of the BRIC consumer will only become more marked over the next decade.* *A new trend which has influenced the flow of goods and services is that of intra-BRIC trade. Previously, the BRIC countries were seen as the factories and commodity suppliers to the world, but now they are working together as consumers and producers and trading with one another. Should we see a slowdown in the developed world, the BRIC countries are well positioned to ride out the storm.* BRIC countries experienced positive growth rate and higher than that of the global average-> HH Ys increase relative to the rest of the world -> higher purchasing power -> greater ability to import goods and service. -> change in trade patterns in terms of volume, type of goods/svs trades and trading partners. Change in the types of goods traded (from exporting low-valued goods and commodities to exporting higher-valued consumer goods/svs; and perhaps	[4]

	from importing capital equipment to importing consumer goods/svs), change in trade volume (increasing imports) and change in trading partners (from BRIC-rest of the word trade to intra-BRIC trade) (Any two changes to trade pattern to achieve 2 m)	
(b)	Comment on whether Table 3 and Figure 2 support the view that emerging economies will be the 'Engines of Growth in the Global Economy'.	[6]

Figure 2: Emerging-Market Share of world GDP



Source: IMF Website

Table 3: Selected Economic Statistics, 2011

	Annual real % growth in GDP	*GDP per capita at 2005 market price in US$*	*Total trade as % of GDP*	*Exports as % GDP*	*Imports as % of GDP*
USA	*1.8*	*43,063*	*32*	*14*	*18*
Brazil	*2.7*	*5,721*	*25*	*12*	*13*
India	*6.3*	*1,107*	*54*	*24*	*30*
China	*9.3*	*3,348*	*68*	*31*	*37*

Source: The World Bank Website

Introduction

'Engines of growth in the global economy' means 'forces that drive economic growth in the global economy

Thesis

- Figure 2 – shows that the share of emerging countries' GDP as a % of total World GDP has been increasing and accounts for more than 50% of world GDP. Increase in relative GDP -> higher purchasing power -> higher demand for imports > helps in creating X dd for trading partners -> spur economic growth of its trading partners -> driver of global demand -> engine of growth
- Table 3 – real GDP growth for BIC in 2011 -> increase in PP -> increase in dd for M and hence drive global growth (consistent with Figure 2), their imports as a % of GDP are high compared to US too.

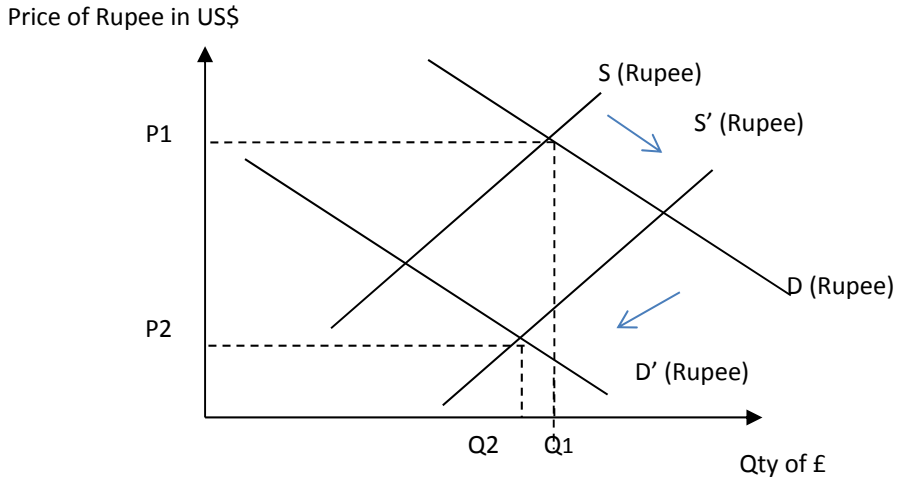
Anti-thesis

- Figure 2 also shows that rate of increase in emerging market's share of GDP has been falling since 2009 -> contradicting data as it raise question on the sustainability of emerging countries to drive economic growth
- Figure 2 only shows that share of emerging countries' GDP as a % of total World GDP. It does not show if GDP is increasing. .
- Table 3 does show the growth in GDP but restricted to only 3 of the BRICS countries and for one year only. Hardly conclusive -> insufficient data.
- Data on GDP per capita is not useful as population size is not given. It is the real GDP figures (i.e. aggregate figures) that reflect the purchasing power and hence importance of a country.

Judgment

Data from Figure 2 and Table 3 reinforce each other to show the

	increasing importance of emerging countries in stimulating global economic growth through increasing imports. However, it is difficult to gauge as data are contradicting and insufficient as well. L1 (1 – 2 m): Do not understand the meaning of 'engine of economic growth'. Answer it as 'whether the emerging economies can continue to achieve economic growth'. Do not understand the question requirement which is to critique the data. L2 (3 – 5 m): Understand the meaning of the term 'engine of economic growth'. A balanced discussion on whether the data is supportive of the view that emerging countries are indeed the engine of growth using evidence from the data provided. E1 (1 m): Judgment with stated criteria	
c. (i)	With reference to Table 3, which indicator would you use to assess the standard of living in a country? Justify your answer. GDP per capita at 2005 market price in US$. Takes into consideration the population size. Rep the average income per person -> average purchasing power -> average consumption per person which is a good indicator of the material SOL. (1m for identifying the indicator and 1 mark for justification)	[2]
(ii)	Explain two other pieces of information that would be useful in assessing the standard of living in a country. Highlight that there is both material and non-material SOL. To suggest two appropriate indicators, e.g infant mortality rate, literac (preferably one to assess material SOL and one to assess non-material SOC). For each indicator, explain how it can be used to assess the SOL of a country. • Education: literacy rate - With better education, the people in a country will be able to read and appreciate aesthetics or literacy work, enjoy the fine arts and engage in pursue of their own aspirations. This ability to pursue self-realisation is a non-material aspect of SOL. • Health: Infant mortality rate, life expectancy, quality adjusted life years, availability of medical infrastructure per 1000 person - Infant mortality measures the proportion of babies born who die before the age of one out of total births. A low infant mortality rate signals availability and accessibility healthcare services. This would indicate both material and non-material SOL. (2 m for each indicator which explain clearly how it can be used to asses a country's SOL)	[4]

(d)	With reference to Extract 6 and using appropriate diagrams, explain why the rupee fell in value as investors took flight and headed for the safety of the US dollar. Investors 'take flight' and head for the safety of US dollar-> hot money outflow from India to US -> Rise of Rupee SS in the exchange rate market; At the same time, there is less inflow of hot money -> fall in Rupee DD -> increase in SS and fall in DD -> excess ss of rupee in the market. Assuming free exchange rate system -> rupee depreciates until market clears.  (2m for diagram which are well-labelled and referred to 2 m for explanation. Must include effect of increase in ss of rupee due to capital flight given that it is in the question.)	[4]
(e)	Discuss the extent to which the factors highlighted in Extract 7 can help emerging countries sustain their economic growth.	[8]
	Explain how each of the factors will help emerging countries grow • Sound macro-economic policies to control of inflation rate and budget deficits -> build consumers' and investors' confidence -> ensure healthy C and I -> promoting both actual and potential Economic Growth through AD and AS • Investment in human capital and improvement of educational standards -> improve qlty of fop • Import new technologies from the west -> increase in qlty of fop -> as above • Finally, they must have young and growing populations -> increase in quantity of labour -> as above • Point 2 to 4 are similar -> increase productivity -> productive capacity -> reduce unit cost -> increase AS -> attract foreign investment -> facilitate restructuring of economy -> build up the value-added chain -> increase potential growth	

Discuss whether the factors can help emerging countries sustain its economic growth. Depends on

- Ability of macro-economic policies to help emerging countries sustain EG - Depends on effectiveness, sustainability, appropriateness etc of the policies
- Current economic condition of the economy – If there is an economic downturn / inflationary pressure / chronic budget deficit - Need to be resolved through demand-management policies and not supply
- Economic characteristics of the economy – urgent need to invest in human capital and import new technologies if the country is short of these resources. For example, India may not place this as the top priority given its abundance unlike other less developing countries like Mexico

L1 (1 – 3 m)	Merely explain how the factors affect economic growth
L2 (4 – 6 m)	Explain the factors may affect economic growth. Comment on the importance of each of the factors in affecting economic growth for the countries
E (1 – 2 m)	Make a judgment based on economic reasoning

3 (a) Using the production possibility curve (PPC) diagram, explain the central economic problem that all societies have to address. [10]

(b) China is moving towards investment in clean technology and tradable pollution permits system. These policies also address rising concerns of China's air pollution blown eastward over to Japan.

[15]

Adapted from *Asahi Shimbun, AJW*, 4 February 2013

Discuss the view that tradable pollution permits is the best policy to correct China's air pollution problem.

Suggested Answers

Part (a)

Introduction

- State and explain the central economic problem.
- The problem of scarcity arises because human wants are unlimited, but limited resources are not enough to meet all of society's wants.
- Resources are limited because the world has only a given amount of them at any given period of time constrained by the level of technology at that time period. Examples of resources are land, labour, capital and entrepreneurship. On the other hand, there are unlimited wants where the desire for even higher levels of consumption to gain greater utility occurs once a particular consumption level is achieved. Similarly, desires increase over time as old wants are satisfied and new wants are created to gain greater utility.
- As a result, scarcity necessitates choice, such that the society allocates limited resources to produce a certain combination of goods and services that satisfies maximum wants.

Paragraph 2

- Explain the concepts of choice and opportunity cost
- Individuals are assumed to be rational in their decision making by weighing the benefits and costs carefully when making a choice, which involves sacrifice. Choice is the act of selecting among alternatives and it involves the need to make sacrifices. For example, the country can choose to allocate resources in numerous ways to produce different combinations of consumer goods and capital goods, i.e. the country can choose to produce more consumer goods but less capital goods or to produce less consumer goods but more capital goods.
- The sacrifice of alternatives in the production or consumption of a good or the carrying out of an action is known as its opportunity cost, which is the next best alternative foregone. This represents the real cost of the good consumed or produced or the activity being carried out. For example, given the amount of resources and the state of technology, an additional unit of consumer goods produced implies giving up the opportunity to produce capital goods. The more consumer goods a nation produces, the less resources available to produce capital goods, due to scarce resources.
- Scarcity of resources puts a limit on how much goods and services an economy is capable of producing to satisfy maximum wants and thus contribute to the living standards of people. Every time an economic agent makes a choice, there is a trade-off for the use of that resource for one or more alternative use(s). The extent of the trade-off is known as the opportunity cost.

Paragraph 3

- The concepts of scarcity, choice and opportunity cost can be illustrated graphically by using a production possibility curve (PPC) or production possibility frontier (PPF).
- Explain the PPC / PPF.

- Figure 1 is the PPC / PPF that shows all the possible combinations of two goods (for e.g. capital goods and consumer goods) that a country can produce with all its available resources / factors of production fully and efficiently employed within a specified period of time with a given state of technology.

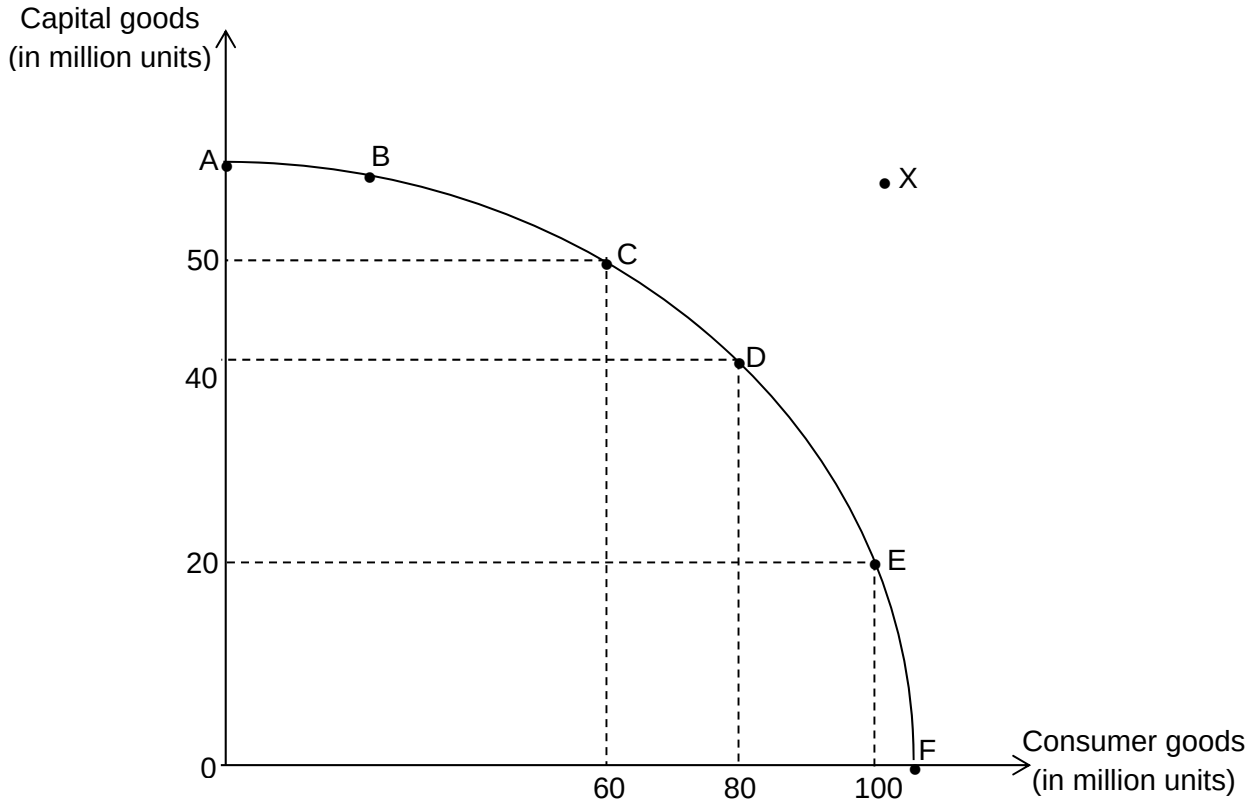


Figure 1: Production Possibility Curve (PPC) or Production Possibility Frontier (PPF)

➢ Explain the central economic problem, using the PPC diagram.

- By definition, the PPC indicates the maximum quantity of one good that can be produced for a given quantity of the other good produced. Thus, combinations beyond the boundary are unattainable with the economy's given resources and current state of technology. Hence, the central economic problem is represented by the unattainable combinations of consumer goods and capital goods, which lie outside of the PPC (e.g. Point X).
- Movement along the PPC represents the concept of choice. For example, the country can choose combination A that consists of all capital goods and no consumer goods produced or combination F that consists of all consumer goods and no capital goods produced. Combinations B, C, D and E consist of both capital goods and consumer goods produced, with the amount of each good differing. Since it is impossible to increase the production of consumer goods without reducing the production of capital goods, the movement along the PPC also represents the concept of opportunity cost.
- The concept of opportunity cost is also illustrated by the negative slope of the PPC. The PPC is downward-sloping from left to right illustrating that scarce resources have alternative uses and the trade-off as we move resources from one industry into the other. If the country wishes to produce more of consumer goods, it will have to give up some units of capital goods. Referring to Figure 1, suppose the country is currently producing at point C and it wishes to increase the production of consumer goods by 20 million units. To do so, it will have to divert resources away from the production of capital goods, thereby reducing the output by 10 million units, moving from point C to D. If the country wants to further produce another 20 million units of consumer goods, it will have to divert resources away from the production of capital goods, and this time reducing the output by 20 million units, moving from point D to E. As the country wants to produce equal

successive increases in the amount of consumer goods, it has to have up increasingly greater amounts of capital goods, reflecting the law of increasing opportunity costs (which is represented by the increasingly negative slope of the PPC).

- The opportunity costs increase because factor inputs are not perfect substitutes of one another, hence are not equally suited for producing different goods.
- As an economy increases the production of consumer goods, e.g. agricultural goods, eventually it has to use resources (e.g. labour) that are less suitable for producing agricultural goods (but are better suited for producing capital goods e.g. machinery). This means that increasingly more resources must be used to produce additional equal amounts of agricultural goods. Consequently, increasing number of machinery is given up to obtain additional equal amount of agricultural goods.
- Similarly, if the country moves upward along the curve and produces more capital goods, this also involves increasing opportunity cost as it would have to use resources which are less suitable for producing capital goods but more suitable for producing agricultural goods. The first resources that are transferred from agricultural / crop production to machinery production will likely be those that are least suited for crop production. For example, the least suited labour in growing crops (e.g. highly skilled labour) is first transferred from growing crops to machinery production. Subsequently, progressively more proficient labour that grows crops well such as farmers will have to be foregone to produce more machinery in order to produce additional units of capital goods.

Conclusion

All societies face the problem of scarcity because resources are limited and human wants are unlimited. Scarcity forces society to choose between the competing uses of the limited resources. It is scarcity that gives rise to the central economic problem i.e. the allocation of resources among competing uses for the satisfaction of maximum human wants.

Mark Scheme

Level	Marks	Descriptors
L1	1 – 4	For an answer that shows some knowledge of what scarcity is but lacking in economic analysis.
L2	5 – 6	For an answer that • Explains the central economic problem but unable to link the related concepts of scarcity, choice and opportunity cost to resource allocation. • Makes scant or unclear reference of the above economic concepts to the PPC diagram.
L3	7 – 10	For a well-developed answer that demonstrates • Scope and detailed economic explanation of the central problem using the PPC framework linking to concepts of scarcity, choice, opportunity costs and resource allocation. • Clear reference of the above concepts made to the PPC diagram.

Part (b)

Introduction

China has experienced rapid economic growth rate which has raised material standard of living (SOL) of her citizens. However, with increased production of goods and services coupled with lax legislation, in 2009, China was the most polluted country in the world, adversely affecting the non-material SOL of the Chinese citizens. Inevitably, the negative externality of pollution as a by-product of production processes has led to rising concerns in Japan due to China's polluted air blown eastward over to Japan.

Body

Market failure occurs when the free market does not allocate resources efficiently. Efficiency is concerned with the optimal production and distribution of these scarce resources.

Economic efficiency is the situation in which it is impossible to generate a larger welfare improvement from the available resources. It is a situation where some people cannot be made better-off by reallocating the resources or goods, without making others worse-off. From society's perspective, economic efficiency refers to both productive and allocative efficiency being attained.

Productive Efficiency

Productive efficiency occurs when the firm operates at a level of output consistent with minimum average total cost. There is minimisation of wastage of resources in the production process.

Allocative Efficiency

Allocative efficiency occurs when firms produce the combination of goods that is most preferred by consumers. Resources are allocated in such a way that the right quantity of every commodity is produced. It is achieved when every market produces the social optimum output, where marginal social benefit (MSB) = marginal social cost (MSC). At this output level, welfare to society is maximised.

- Negative externalities or external costs occur when third parties who are not directly involved in the consumption of production of the goods are affected adversely.
- In the absence of government intervention, both consumers and producers only take into account private costs and private benefits, ignoring the negative costs incurred by third parties.
- Oil refinery producers or factories that burn fossil fuels to generate electricity to power machinery / industrial processes gain private benefits of earning revenue from the final products sold.
- The private costs of producing refined oil incurred by oil refinery producers include production costs of refining oil and opportunity costs such as leisure foregone.
- There are however, external costs of producing refined oil on third parties. With increased refined oil production, profit-motivated producers employ cheapest production method and do not clean up air pollution that arise from production. The increased air pollution results in third parties who are not involved in the economic transaction (production and consumption) of refined oil to suffer from respiratory issues / breathing difficulties, eye infection, poor health etc. when they get into contact with polluted air, or even global warming issues. Furthermore, China's air pollution has escalated into a transnational issue – China's polluted air being blown eastward over to Japan, causing the Japanese to suffer from adverse third party effects.

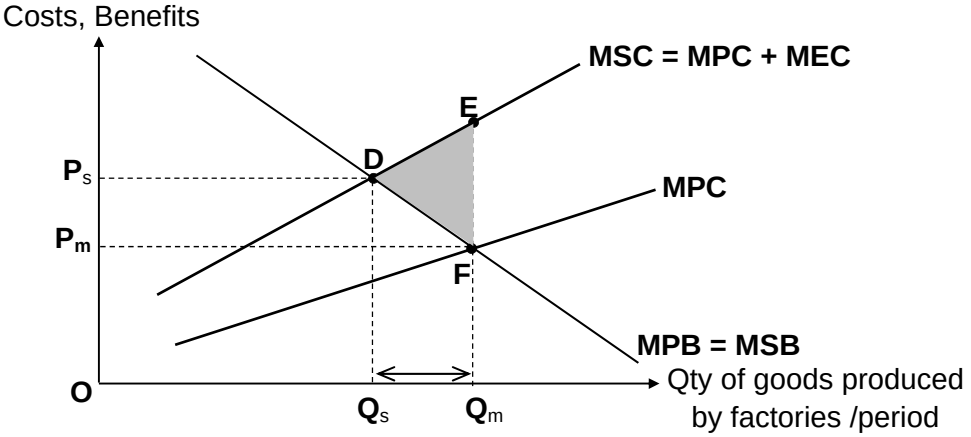


Figure 2: Market Failure due to Negative Externalities

With reference to Figure 2, assume that production of refined oil does not confer positive externalities on third parties, that is, MSB = MPB. Since refined oil production confers negative externalities on third parties, at every output level, MSC > MPC, where the vertical

distance between MPC and MSC is the marginal external costs (MEC). Since rational individuals only consider MPB against MPC and ignore external costs, profit-motivated refined oil producers will produce goods up to the quantity Q_m, where MPB = MPC. However, if all possible benefits and costs were accounted for, the optimal quantity of production occurs at quantity Q_s, where MSB = MSC. Hence over-production of Q_sQ_m amount occurs, where there is an over-allocation of resources to oil refineries and under-allocation of resources for other markets. This leads to a deadweight loss of area DEF as the additional costs (area DEQ_mQ_s) exceed the additional benefits (area DFQ_mQ_s).

Explain how tradable pollution permits help to correct China's air pollution problem

- The system of tradable pollution permits is a combination of command-and-control and market-based system of resolving externalities, based on the concept of property rights. The government owns, on behalf of the people, the right to pollute the atmosphere in its country. The government may then decide that some pollution is allowable – for example to emit a given number of tons of pollution (e.g. carbon) because the costs of eliminating all air pollution outweigh the benefits.
- Once the total allowable pollution has been calculated, the government subdivides the allowable emissions in the form of permits among industries. Firms are allowed to trade permits. If the firm produces less emission than what they are legally permitted to produce, the firm is given a credit. This credit can then be sold to another firm, allowing the other firm to exceed its original limit. Similar to indirect taxes, the external cost is internalised in the form of price paid for the permit

Pros of policy

- The trade in pollution permits allows pollution reduction to be concentrated where it can be achieved at the lowest cost. Firms that are able to reduce pollution cheaply will do so and sell their unused credits to firms that find it more costly to reduce pollution. If it costs firm B more to reduce its pollution than firm A, the permits could be sold from A to B at a price that is profitable to both, i.e. at a price above the costs of emission reduction to A, but below the costs of emission reduction to B. Hence, pollution is reduced in the cheapest possible way.
- In addition, the total amount of pollution by the whole industry can be fixed at a certain socially acceptable level, since the price of the permit will vary automatically with changes in demand to pollute as the permits are traded among the firms.

Limitations of policy

- Nevertheless, a main problem of the cap-and-trade system is deciding how to allocate the permits to firms – should permits be equally distributed to all firms? To all industries? Which firms should get more? Based on how important the firm is to the country? Or based on the size of firm? How much more?
- Furthermore, it is difficult to determine the socially optimum level of pollution as there is imperfect information about the monetary value of the external costs. If there is wrong estimation by the government, the issue of China's polluted air will still be significant.
- This policy is likely to allow the more polluting firms to continue producing and polluting (instead of investing in clean technology – see the sub-bullet below), since firms whose methods are more polluting usually also have very high clean-up costs. These firms may find it cheaper to outbid the less polluting firms in order to get the permits, rather than to incur the cost of cleaning up the pollution or to reduce production which decreases firms' revenue. Also, if many firms choose to produce lesser output, China's real national output falls, affecting China's economic growth negatively.
- Unlike the case of a pigouvian tax where the firms know for sure how much the cost savings from each tonne of emission reduction is, the returns from investment in green technology is more uncertain under the cap-and-trade scheme. The cost savings to be had from investment in green technology depends very much on the price of the tradable permits which fluctuates from year-to-year depending on the demand and supply

conditions. It is this uncertainty that is keeping firms from spending on R&D and investing in green technology.

- With this policy in place, it is more expensive for firms to produce goods due to the extra costs incurred (either clean-up costs or costs to purchase the tradable permits). This may hence deter foreign direct investments into China, causing economic growth to decline.
- The government incurs monitoring costs to ensure that firms do not pollute beyond the allowable emissions. Especially for China which is such a big country that has many factories, the monitoring costs are likely to be high. As such, given the high monitoring costs, this policy is more applicable to the relatively fewer number of firms rather than the extensive mass of households and automobiles that pollute the air as well.
- Profit-motivated firms may want to be free riders, hence apply political pressure (lobby) to the government for greater amounts of permits to be issued. If the Chinese government gives in to such pressure, China's air pollution can only be reduced by a small extent.
  - For instance in 2010, a European business lobby group remarked that extra "permits" to pollute the atmosphere should be given to corporations investing in areas near tropical rainforests.[1]
  - In addition, the EU's Emissions Trading System has not been effective in reducing CO_2 emissions due to a huge oversupply of permits, owing to the economic downturn and lobbying by industry, which has caused the price paid to emit a tonne of carbon to crash in recent years.[2]

Explain how clean technology help to correct China's air pollution problem

- The shift towards clean energy investment could mean that the Chinese government is channelling resources to solar and wind energy projects, such as installing solar panels and wind turbines, as such technologies have become cheaper over the years.
- China advanced its position as the epicentre of clean energy finance, drawing $65.1 billion clean energy investments – 25% of the worldwide investments in solar, 37% in wind and 47% of other types of renewable energy, from small hydropower to geothermal.[3] Furthermore, China is already investing $375 billion dollars in energy savings and emissions reduction in the 5 years through to 2015.[4]
- Fundamentally driven by improvements in technology and economies of scale throughout the supply chain, photovoltaic (PV) module prices have fallen 80 percent since 2008, 20 percent in 2012 alone.[5] This fall in unit cost of production due to cheaper factor inputs incentivises firms to be more willing and able to switch towards the use of solar panels.
- Such clean energy investments can help to fuel economic development of China, yet reduce the negative environmental impact, since the demand for burning of fossil fuels will decline as producers switch to the use of clean energy.

Pros of policy

- Unlike the tradable pollution permits system which may compromise on economic growth, firms can continue using clean energy to produce goods.
- With government investment in the solar panel and wind turbine industries, AD rises, and via the multiplier effect, creates new employment opportunities and generate more economic growth for China.

Limitations of policy

- As long as there is no disincentive on firms such as heavy fines if they continue to burn fossil fuels to generate electricity, pollution will continue to be a problem for China.[4] Especially since pollution discharge is too cheap compared to the cost of installing and

[1] http://www.upi.com/Science_News/2010/09/16/EU-business-lobby-eyes-pollution-permits/UPI-74191284690710
[2] http://www.bristolgreenparty.org.uk/news/small-step-towards-fixing-eus-emissions-trading-scheme-say-greens
[3] http://www.forbes.com/sites/uciliawang/2013/04/17/china-japan-lure-big-clean-energy-investments
[4] http://www.abc.net.au/news/2013-08-13/china-to-invest-more-in-clean-technologies/4882244
[5] http://www.triplepundit.com/2013/05/bloomberg-new-energy-finance-explains-cleantech-investment-down

running the pollution alleviation equipment[4], it is likely that this shift towards clean energy will take a much longer time than expected to materialise.

Explain how legal regulations help to correct China's air pollution problem

- Governments may impose direct regulation (backed by fines or other forms of punishment) to influence firms' or consumers' behaviour. These are command and control measures that do not merely raise or lower prices but also compel firms and consumers to moderate their actions as a result.
- In this case, the Chinese government may impose 'emission standards' on automobile and factories that emit polluting greenhouse gases to limit the externalities generated.
- With this law, car owners may install catalytic converters on their cars to convert toxic by-products of combustion in the exhaust of an internal combustion engine to less toxic substances by way of catalysed chemical reactions. This thus reduces the problem of air pollution in China.
- In order to avoid being fined by the government, factory owners may switch to cleaner methods of production so as to reduce carbon emissions.

Pros of policy

- Regulations are easy to understand, implement and monitor. Random spot checks or checks based on public complaints can be made, and those who flout the regulations are then heavily fined or punished, for example car license revoked for a few months, or firm is forced to stop production for a few months. Set high enough, these penalties act as an effective deterrent to prevent the undesirable behaviour that imposes negative externalities.

Limitations of policy

- Like the tradable pollution permits, this policy also incurs high monitoring costs, which may make this solution inefficient in achieving the desired result.
- There is a lack of an incentive for firms to do better. Emission standards only give firms the incentive to do enough to meet the standards but not to reduce the externalities any further once the standards are met.
- Furthermore, emission standards do not result in reducing pollution at the least cost, unlike tradable pollution permits.

Conclusion

With the atmosphere / air being a common / shared resource among individuals, who act independently and rationally according to one's self-interests, it is inevitable that the tragedy of the commons[6] occur, despite their understanding that depleting the common resource is contrary to the group's long-term best interests. With the air surrounding us that cannot readily be fenced and impossible to be assigned property rights, the tragedy of the commons must be prevented by different means.[7]

Any solution requires that we, as a society, change our values of morality. For example, we may decide that unlimited use of air is no longer morally acceptable. Hardin states one solution is "*Mutual Coercion Mutually Agreed Upon*." We, as a society, agree that some actions are not allowed (the mutual agreement), and that violations of the agreement leads to fines or prison terms (the Coercion)[8], such as laws or taxing devices that make it cheaper for the polluter to treat his pollutants than to discharge them untreated.[7] For example, the US Environmental Protection Agency that regulates the amount of pollutants that can be

[6] In the 1960s, ecologist Garrett Hardin invoked the analogy of a "commons" in support of his thesis that as human populations increased, there would be increasing pressure on finite resources at both the local and particularly the global levels, with the inevitable result of overexploitation and ruin. He termed this phenomenon the "tragedy of the commons." More specifically, this phrase means that a rise in human population creates an increased strain on limited resources, which jeopardises sustainability.[7]

[7] http://www.sustainable-environment.org.uk/Earth/Commons.php

[8] http://oceanworld.tamu.edu/resources/oceanography-book/tragedyofthecommons.htm

released into the air. Failure to comply with the regulations leads to fines or prison sentences.[8] Another example of mutual agreement include concerted efforts by different governments who have recognised the importance of taking care of the atmosphere, to sign international agreements to reduce carbon emissions. The Kyoto Protocol, which has attempted to bring nations together in reducing greenhouse gas emissions and slowing global climate warming. Multiple nations recognised that everyone had an interest in preserving this common resource for the future and agreed to look beyond short-term gain and immediate self-interest to a sustainable future.[9]

Choice of policy depends on:

- ✓ Time lag of policy – consider policies that take effect more immediately vs. those that require a long gestation period → clean energy investment is likely to take effect more in the long run than short run, hence the Chinese government ought to implement multi-pronged approach or complementary / combination of policies (both short-run and long run measures) simultaneously to reduce China's air pollution
- ✓ Side effects of policy – select policies with minimal side effects or result in minimal trade-offs with other macroeconomic goals

Mark Scheme

Level	Marks	Descriptors
L1	1 – 5	For an answer that shows some knowledge of how the market fails and / or the policies that can be implemented but lacking in economic analysis.
L2	6 – 8	For an answer that • Only addresses part of the question, i.e. provides a developed analysis of the various benefits and costs applied to the context of the question as well as how the deadweight loss area is derived, but only explains how the policies (at least three) work, without evaluation of the policies OR • Provides a well-developed explanation and evaluation of the policies (at least three) but does not explain how the market fails OR • Provides a well-developed explanation on how the market fails and the policies, including evaluation (but only two policies) • Makes scant or unclear reference of the above economic concepts to the market failure diagram. • Cap at 8m if policies explained are not those stated in the preamble
L3	9 – 11	For a well-developed answer that demonstrates • Scope and detailed economic explanation of China's air pollution using the market failure diagram linking to concepts of benefits, costs and deadweight loss. • Well-developed explanation and evaluation of at least three policies (including those stated in the preamble)
E1	1 – 2	Unexplained assessment on which is the best policy that should be undertaken by the Chinese government to reduce air pollution.
E2	3 – 4	Economic justification on which is the best policy that should be undertaken by the Chinese government to reduce air pollution.

[9] http://www.dummies.com/how-to/content/ten-reallife-examples-of-the-tragedy-of-the-common.html

4 There are gains from globalisation as world trade and global production networks create opportunities for Singaporeans and domestic firms. However, globalisation could potentially lead to an increase in unemployment.

Adapted from *The Straits Times*, 23 September 2010

(a) Explain the benefits of globalisation. [10]

(b) Discuss the policy options that the government can adopt to reduce unemployment in Singapore. [15]

Part (a)

Introduction

Definition of globalisation: Globalisation is the increasing integration of economies around the world, particularly through the movement of goods, services, capital, people (labour) and knowledge (technology) across international borders.

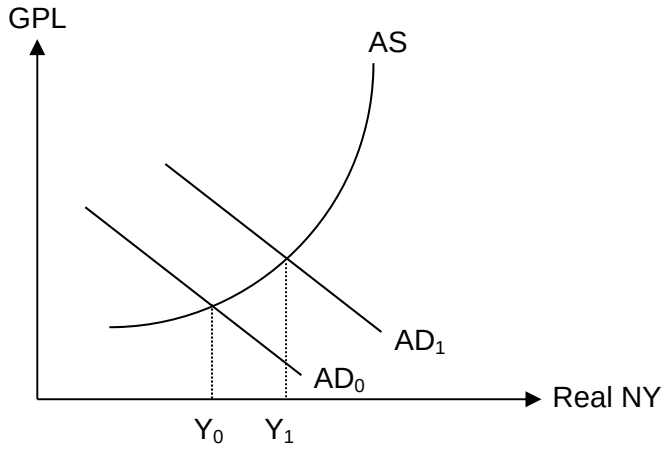
- Increase in international trade at a much faster rate
- Increase in international flow of capital including foreign direct investment
- An increase in movement of labour across boundaries
- An increase in international outsourcing and offshoring by multinational corporations (MNCs)

Body

(i) Freer flow of trade in goods and services

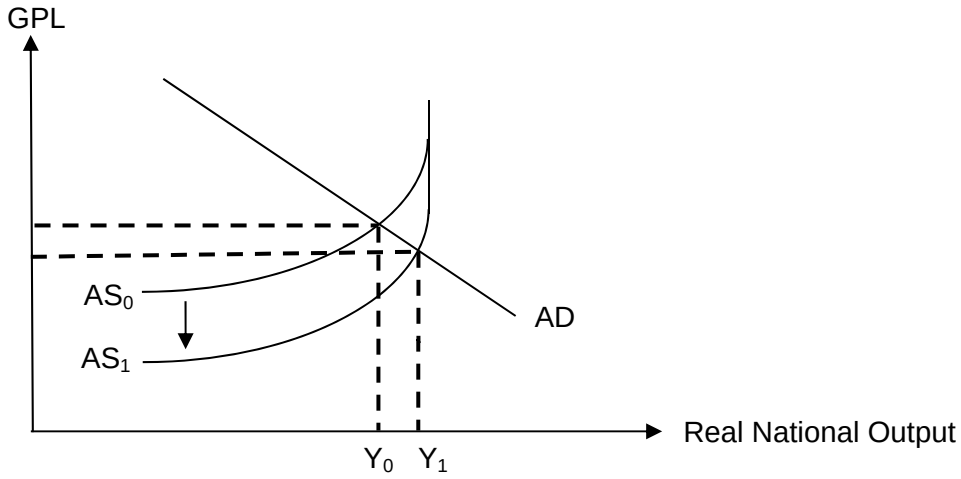
- The reduction / removal of trade barriers enables Singapore to specialise and trade in line with the Theory of Comparative Advantage. As Singapore divert resources to produce goods and services that they can produce at lower opportunity cost than other countries (i.e. in which they enjoy comparative advantage) and using these goods and services to exchange for others which they can only produce at higher opportunity cost, the total quantity of good and services available for consumption increases. The goods and services are produced in countries which opportunity cost is lowest. This means that the world can produce more output with its given resources. With a mutually beneficial TOT, Singapore and her trading countries can consume outside their PPC, ↑ material SOL. <benefit to Singaporeans>

- Removal of trade barriers across countries allow Singapore to specialise and export goods that it has comparative advantage in. These include products such as semiconductor chips, pharmaceuticals and petrochemicals. On the other hand, Singapore imports low value added manufactured goods such as textiles from emerging economies such as China and India. ↑ in DD for exports in petrochemical, pharmaceutical sectors ➔ ↑ in export revenue and rise in net X, ceteris paribus, rise in AD, NY and actual growth, employment (please explain with the aid of AD-AS diagram, including the multiplier effect).



- The increase in X will lead to an increase in AD from AD_0 to AD_1. There will be excess demand at the given level of NY at Y_0. As firms drawn down inventories to meet the excess demand, unplanned disinvestment occurs. Firms will receive signal to produce more. They will employ more factors of production (FOP), including more units of labour. <benefit to Singaporeans> The increase in employment of FOP will lead to increase household income, and they will spend part of their additional income earned on domestically produced good and services, which would be reflected as an increase in C_d, the extent of which depends on the size of MPC_d. However, the increase in C is lesser than the increase in additional income due to the presence of leakages, where part of the additional income is spent on imports, used to pay tax or kept as savings. The increase in C_d will lead to further increase in AD and subsequently excess demand. The firms will again employ more FOPs to expand production. This process continues and multiple increases in C ensue. Note however that this process does not continue indefinitely due to the existence of leakages (S, M, T) that does not feedback into the circular flow of income.

- Trade also allows Singapore to import semi-finished goods and raw materials from other countries, thus allowing Singapore to enjoy low unit cost of production (COP), reducing AS. <benefit to domestic firms and lower price of goods, benefit to Singaporeans>



- Rise in NX also improves BOT, ceteris paribus, improves current a/c and BOP. This is assuming that the increase in X revenue is larger than the increase in M expenditure.

- Other benefits of ↑ competition: (i) there will be greater variety of goods and services available to consumers, <benefit to Singaporeans> (ii) there will be economies of scale to be gained where producers/firms experience fall in unit COP as they produce more output due to specialisation based on comparative advantage theory to serve both the export and domestic markets. (explain and exemplify, relate to gains to different groups of stakeholders) <benefit to domestic firms>

(ii) Freer flow of capital

- Freer capital flow will lead to FDI inflows. MNCs may outsource their production process into Singapore to take advantage of the cheaper high-skilled labour and other resources to lower their production costs. <benefit to Singaporeans> This will lead to increase in investments in Singapore. The net inflow of FDI ➔ AD increases ➔ NY increases (through the k-process) ➔ EG (actual growth), lower UN rate. There will also be to an improvement in the capital account and BOP in the short run.

- FDI inflow will help Singapore to develop its physical infrastructure and benefit from technology transfer at a faster rate. <benefit to domestic firms> This will help accelerate its rate of sustaining economic growth over time (increase AS → non-inflationary growth), especially in view that Singapore is already operating very near full employment and needs to expand its AS. [include a well-referenced diagram]

(iii) Freer movement of labour

- Augment talent pool as increase in the supply of skilled and talented labour in Singapore if MNCs send skilled professionals to manage the local business activities. Influx of foreign talent → enhances quality of labour → Increase in productive capacity ➔ increase in AS ➔ potential growth

- Influx of foreign talent allows Singapore to develop new niche areas especially in diversifying the economy by allowing the economy to move up the higher value-added manufacturing ladder, or move into the services sectors. <benefit to domestic firms and Singaporeans>

- The influx of low skilled labour will also help Singapore manage its labour force and allow jobs that locals normally shun to be filled up. This helps to ensure that firm operations can be managed and completed at a low cost, contributing to the overall competitiveness of the economy. <benefit to domestic firms>

<u>Conclusion</u>

Not all economies are the same and hence would benefit from globalisation to different degrees:

- Small and open economies like Singapore benefit from globalisation more than large and less open economies as they are less likely to be able to be self-sufficient in goods and services in the event of no trade. <benefit to Singaporeans> The small domestic markets will restrict the growth of local firms and it will be beneficial for firms to be able to outsource or expand their operations into other countries. <benefit to domestic firms>
- Whether there are policies to (i) manage the costs of globalisation, (ii) ensure that the benefits of growth is distributed to the wider population, (iii) maintain the growth in the LR

Knowledge, application, understanding, analysis		
L1	• For an answer that is descriptive and lacks the use of economic framework/concepts in analysis • Glaring conceptual errors • Lacks application to Singapore context	1-4
L2	• Use of appropriate economic framework/concepts in analysis → AD-AS diagram • Sufficient scope of coverage ➔ At least 2 aspects of globalization discussed ➔ If only 1 aspect of globalization well explained – Max 5 marks ➔ Ability to link to at least 2 macroeconomic effects • Sufficient depth of analysis • Some application to Singapore • Lacks application to Singapore context – Max 6 marks	5-6
L3	• Good use of economic framework/concepts in analysis → AD-AS diagram • Good scope of coverage • 2-3 aspects of globalisation discussed • Ability to link to both macroeconomic and microeconomic effects • Good depth of analysis • Good application to Singapore context.	7-10

Part (b)

Introduction

Define unemployment (rate): The unemployment rate is a measure of the percentage of the labour force of legal working age who are without jobs but are available for work, willing to work and actively seeking work at current wage rates.

Types of unemployment that Singapore suffers from:

(i) Cyclical unemployment
(ii) Structural unemployment
(iii) Frictional unemployment (optional)

Body

Thesis: The policy options that can reduce unemployment in Singapore

(i) On cyclical unemployment

Globalised countries are susceptible to the problems of volatility in EG and cyclical unemployment. These shocks can be transmitted from one country to another through various channels – trade, financial and investment spill overs.

Being open to free trade, Singapore will be more prone to contagion effects of other countries' economic crisis, resulting in AD to fall significantly, causing economic growth to fall and cyclical unemployment to rise by a larger extent. By contagion effect, it means that if the NY of Singapore's trading partners fall, they are likely to buy less of Singapore's X and I lesser in Singapore. A large proportion of Singapore's AD is made up of X and foreign I; thus the fall in X and I is likely to result in AD falling by a significant extent.

Government can implement policies to adjust the rate of cyclical unemployment due to these contagion effects.

To introduce expansionary demand management policies to increase AD in the short run when there is a recession causing exports to fall. This can be achieved either through

1. increase in G and/or fall in T (expansionary fiscal policy),
2. devaluation of exchange rate (expansionary exchange rate policy) or

3. sign more FTAs.

(In Singapore context, it is not likely for Singapore to use interest rate as a policy tool due to the openness of economy leading to destabilising effects on its exchange rate.)

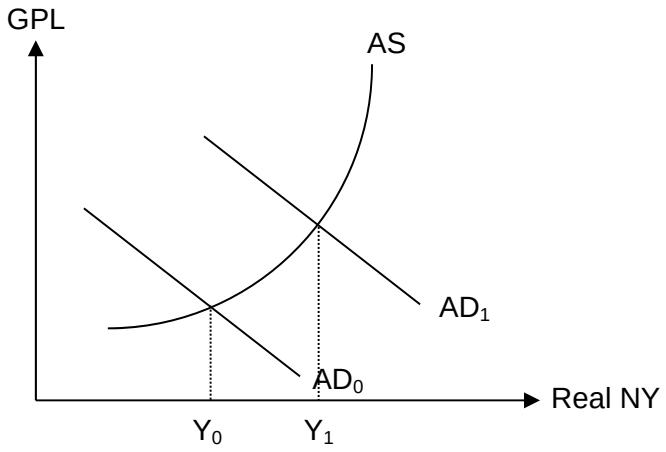
1. Increase in G
   The Singapore government has accumulated budget surpluses from previous years to finance increase G in the event of recession resulting in high unemployment. The increase in G directly increases the AD, causing the NY to increase. The increase in production of goods and services will lead to the employment of more factors of production, including labour.

2. Devaluation of exchange rate
   Singapore can consider allowing the exchange rate to depreciate. In view that SGD is likely to experience reduced upward pressure due to the weakened demand for SGD by trading partners falling into recession and purchasing lesser Singapore exports, Monetary Authority of Singapore (MAS) can adjust the policy band downwards, allowing SGD to depreciate.

   The depreciation of the SGD will result in Px to fall in terms of foreign currency, thus increasing the Qd of Singapore exports. On the other hand, Pm will rise in terms of SGD, reducing the Qd of foreign imports. This prompts locals to switch to local goods which are substitutes to these foreign imports. The increase in X and Cd increases the AD, causing the NY to increase. The increase in production of goods and services will lead to the employment of more factors of production, including labour.

3. Sign more FTAs
   To sign more FTAs with many different countries so as to diversify trading partners. If a particular trading partner is experiencing a recession, the country can still fall back on other trading partners for exports – decoupling effect. The signatory of FTAs with other countries is to secure the quantity of X Singapore has with her trading partners. This will aid in stabilising the fall in X during external led recession. The increase in X and Cd increases the AD, causing the NY to increase. The increase in production of goods and services will lead to the employment of more factors of production, including labour.

   (Explain the above with reference to a graph)



There will be excess demand at the given level of NY at Y_0 when AD increases. As firms drawn down inventories to meet the excess demand, unplanned disinvestment occurs. Firms will receive signal to produce more. They will employ more FOP, including more units of labour. This helps to reduce unemployment in Singapore. The increase in employment of FOP will lead to increase HH income, and they will spend part of their additional income earned on domestically produced goods and services, which would be reflected as an increase in C_d, the extent of which depends on the size of MPC_d. The increase in C_d will lead to further increase in AD and subsequently excess demand. The firms will again employ more FOPs to expand production. This allows unemployment to fall further. This process of unemployment reduction continues until there is no more increase in C_d.

(ii) On structural unemployment
If the globalisation leads to rapid economic changes, this can result in various negative outcomes / costs such as high unemployment in the sunset industries that have lost CA. During boom times, Singapore is also likely to suffer some form of structural unemployment. Structural unemployment occurs when the structure of the economy changes, which leads to changes in the skills and knowledge required to perform certain jobs, or, a change in the location of jobs. Employment expands in certain industries and contracts in others. Retrenched workers in the contracting industries may not have the relevant expertise to find jobs in the expanding industries, leading to structural unemployment.

Government can implement interventionist supply side policies in view of structural unemployment.

This involves retraining and upgrading the skills of displaced workers whose skills have become obsolete. Governments can provide tax incentives or subsidies to firms to induce them to send their workers for upgrading courses.
E.g. The enhanced training support scheme for SMEs is extended to local employees of SME establishments (not hiring more than 200 employees) registered or incorporated in Singapore. More than 8,000 courses fall under this scheme including certifiable courses supported by WDA and academic CET courses offered by the five Polytechnics and Institutes of Technical Education. Under the 3-year initiative that took effect from 1 Jul 2012, SMEs can enjoy greater training support which includes:

- Higher Course Fee Funding of 90% when SMEs sponsor their employees for the above-mentioned CET courses; and
- Increased absentee payroll cap of $7.50 per hour. Absentee payroll rate remains unchanged at 80% of basic hourly salary.

In addition, the government can revamp and gear the education system towards the needs of the global economy.
E.g. Develop higher valued-added industries; establish tertiary institutions to overcome the shortage of skilled labour.

Antithesis: The limitations of policy options used to reduce unemployment in Singapore

Expansionary Fiscal policy

(i) The extent of fall in cyclical unemployment depends on the size of the multiplier. The larger the multiplier, the larger the amount of national income generated from the G; hence more jobs created to reduce cyclical unemployment.
(ii) In Singapore, G takes up only around 10% of GDP. The increase in G during times of recession may not result in significant increase in AD. This will limit the extent of boost to AD in reducing cyclical unemployment. This is especially a concern when X could have

fallen rather extensively, and that X takes up a large proportion of AD; the increase in G is unable to offset the fall in X.

Expansionary Exchange Rate policy
Singapore manages a modest, gradual appreciation of SGD in order to rein in cost-push inflationary pressures from imported sources. The depreciation of SGD may result in an increase in unit COP as essential imported raw materials and semi-finished goods are now higher priced in SGD, resulting in cost-push inflation. It will be a conflict for Singapore as unit COP is raised while the depreciation of SGD was meant to make exports cheaper. If the firms pass on the higher costs in the form of higher export prices, this will negate part of the lowered export price achieved through depreciation.

Sign more FTA
A shortcoming of this policy is that it merely slows down the contagion effect, but it may be unable to prevent an export-oriented economy from slipping into a recession, especially when there is a global recession which affects all economies.

The effectiveness of such policies is limited since the recession is externally induced, and especially since Singapore is highly dependent on trade. Although such policies may be ineffective to offset the negative impact of a fall in exports, they are still important and necessary as they help to cushion the adverse impact that could be sustained in Singapore.

Interventionist Supply Side policies
(i) Workers may not be receptive to such schemes hence such measures may not decrease structural unemployment significantly. Workers could resist such schemes due to lack of motivation or language barrier in pursuing the courses, especially in the case of workers in the older age group. The government may have to come up with campaigns to promote life-long learning and benefits of skills upgrading, and to provide bridging courses to improve the language or IT skills of these workers before they can access actual skills upgrading courses.
(ii) Retraining takes time. In the short run, the unemployed and their families may face difficulties maintaining basic standards of living. The Singapore government has adopted schemes such as rebates on conservancy charges, freezing of repayment of housing as well as education loans to help low-income families.

<u>Conclusion</u>
Type of policy implemented depends on economic conditions of Singapore economy, which determines the type of unemployment faced.
The economic characteristics of Singapore economy are likely to cause Singapore to be highly susceptible to cyclical unemployment.
The depreciation of exchange rate is likely to be limited in the Singapore context due to the balance required in managing cost-push inflation and maintaining X competitiveness.
Supply side policies are suggested as it can also be used to manage cyclical unemployment as well. However, these policies are likely to take time for results to be seen.

Knowledge, application, understanding, analysis		
L1	• For an answer that is descriptive and lacks the use of economic framework/concepts in analysis • Glaring conceptual errors • Lacks application to Singapore context – Max 5 marks	1-5
L2	• Use of appropriate economic framework/concepts in analysis → AD-AS diagram • Sufficient scope of coverage ➔ T-A structure, at least 2 policies aimed at reducing unemployment discussed • Sufficient depth of analysis • Discussed only cyclical unemployment • Some application to Singapore context.	6-8
L3	• Good use of economic framework/concepts in analysis → AD-AS diagram • Good scope of coverage on both cyclical and structural unemployment • Good depth of analysis • Good application to Singapore context.	9-11
Evaluation		
E1	• Unexplained judgement that is not supported by economic analysis	1-2
E2	• Evaluative assessment and judgement supported by economic analysis. Excellent synthesis in which the student is able to justify and arrive at a convincing stand (based on earlier arguments and counter arguments)	3-4