Suggested Answers for H1 CSQ 1

(a) Compare the trends in domestic and industrial electricity consumption in the UK from 2010 to 2014. [2]

Both domestic and industrial electricity consumption in the UK decreased overall from 2010 to 2014. [1]
However, domestic electricity consumption saw an increase from 2011 to 2012, but industrial electricity consumption decreased throughout the period. [1]

(b) (i) Using Tables 1 and 2, what can you infer about UK households' price elasticity of demand for electricity? [4]

Price elasticity of demand measures the responsiveness of quantity demanded of a good to a change in its price, ceteris paribus. [1]

From Tables 1 and 2, it can be seen that households' expenditure on electricity increased although the quantity consumed decreased. [1] This implies that the price of electricity had risen across the period.

Since households' expenditure on electricity increased with higher prices and reduced consumption quantity, it suggests that households' demand for electricity is price inelastic. [1] The increase in expenditure from higher prices outweighs the fall in expenditure from less electricity consumed. [1]

(ii) Comment on the likely price elasticity of supply for electricity. [2]

Any justified stand on the likely Es value is accepted, such as:

The supply of electricity is likely to be price inelastic [1], as it is difficult to obtain more inputs for electricity production such as due to a limit on how much coal can be mined. [1]

OR

The supply of electricity is likely to be price elastic [1], as power plants are likely to have spare output capacity and inputs such as coal are readily available as they can be stockpiled. [1]

(c) Using demand and supply analysis, explain one supply-side reason that accounts for the rise in the use of renewable energy sources for electricity production in the UK. [3]

Any ONE of the following reasons:

Increase in supply [1]

Lower marginal cost of production due to renewable energy subsidies from the UK government [1]
Evidence: “The Government has encouraged the shift to green energy through subsidies for renewable generation” (Ext. 1) [1]

OR

Increase in supply [1]
Lower marginal cost of production due to cheaper imported solar panels from China for renewable energy generation [1]
Evidence: “One decision had a significant part to play in the drop in solar costs: a few years ago, China’s government opted to subsidise its manufacturing sector to produce cheap solar panels” (Ext. 3) [1]

(d) Extract 4 highlights protectionist measures that the European Commission adopted in the solar panel industry. Comment on the arguments for and against such protectionism. [6]

For Protectionism [3m]

Protectionism can help to protect jobs in the solar panel industry in the EU. Given that China has been accused of ‘dumping’ solar panels into the EU by subsidising their manufacturing sector (Ext. 3), EU producers of solar panels would not be able to compete against Chinese imports, resulting in firms “going out of business and significant job cuts” (Ext. 3). Implementing protectionist measures can help EU-produced solar panels become relatively more competitive against Chinese imports, resulting in a shift in expenditure from imports to domestic production which will increase aggregate demand, leading to higher domestic output and generation of jobs.

Against Protectionism [3m]

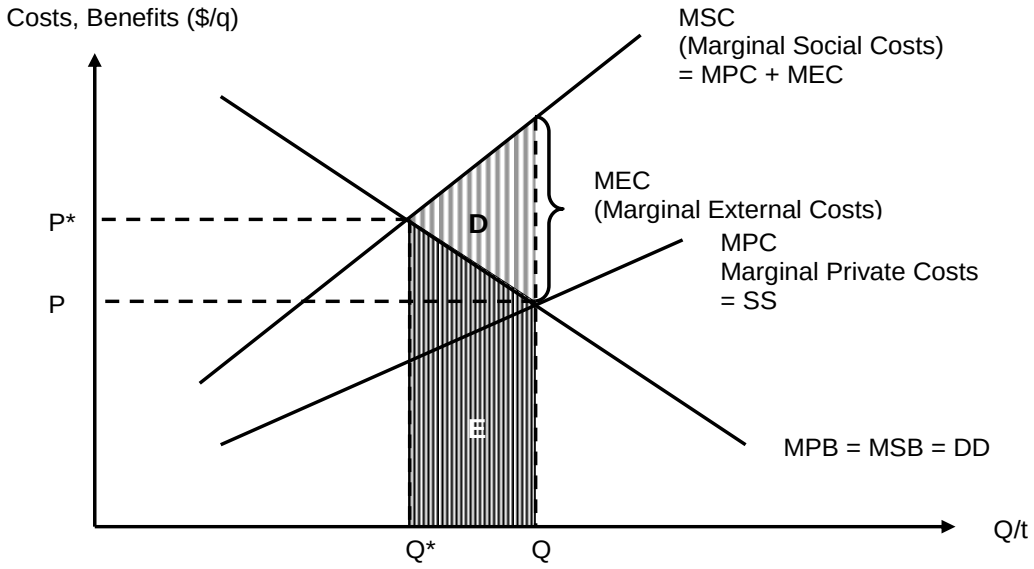
However, implementing protectionism would harm Chinese exports and China may in turn retaliate with trade barriers against the EU (Ext. 4: “could spark tit-for-tat retaliation”). This would result in EU losing export revenue, causing a fall in aggregate demand which results in lower national income and job losses. In addition, the EU benefitted from having Chinese solar panels at a lower cost (Ext. 3), and so protectionist measures imposed on imported Chinese solar panels would also cause the cost of such renewable energy infrastructure to rise. This could slow down the EU’s shift towards renewable energy.

(e) According to Extract 5, power generation creates “external costs that are not reflected in market prices”.

(i) Explain how these ‘external costs’ may lead to market failure. [5]

Power generation produces negative externalities which are external cost to third parties not involved in production or consumption of the good. [1]

The pollution generated from power generation (e.g. burning of coal) may give rise to harmful health effects to residents living near the power plant. (Ext. 5: “environmental and health impacts”) [1]



The existence of these external costs causes a divergence between the Marginal Private Cost (MPC) and Marginal Social Cost (MSC), where MSC > MPC. [1]
If left to the free market, producers would produce at Q where Marginal Private Benefit = Marginal Private Cost, since they only consider the revenue and input costs for power generation. However, since society considers all costs and benefits, the socially optimal level of power generation is at Q* where Marginal Social Benefit = Marginal Social Cost. This results in an overproduction of Q-Q*. [1]
A deadweight welfare loss results as for Q to Q*, the total social costs (area D+E) is greater than the total social benefits (area E). [1]

(ii) Discuss the relative effectiveness in addressing this market failure problem by using renewable energy subsidies as opposed to taxation. [8]

To resolve the market failure problem caused by negative externalities from electricity generation, the government should implement policies to reduce electricity generation using ‘dirty’ methods such as coal-fired power plants.

<u>Policy 1: Renewable energy subsidies</u>

The government can provide subsidies for electricity generation using renewable energy sources. By subsidising renewable energy, it decreases the marginal cost of production for renewable energy which increases the supply and reduces the price of renewable energy. With renewable energy and coal

being substitutes as sources of electricity generation, electricity producers would now switch from using coal to the relatively cheaper alternative of renewable energy. This decreases the demand for electricity produced from coal plants, resulting in a lower output from coal-fired power plants and hence removing the welfare loss due to negative externalities.

However, the use of renewable energy subsidies would incur a burden on the government budget and its usefulness depends on how well renewable energy can be introduced into the existing electricity supply grid. As Extract 2 mentions, in the case of the UK it remains prohibitively expensive to connect renewable energy projects to the existing aged electricity grid. Furthermore, the UK government may find it difficult to finance spending to upgrade the electricity grid or subsidise renewable energy projects given the budget deficit that it is already facing.

Policy 2: Tax on electricity produced using coal

The government can impose a tax on production of electricity using coal. By imposing a tax, it raises the marginal cost of production for coal-fired power plants. The producer will now reduce its output to the socially optimal level, removing the welfare loss arising from negative externalities.
OR
The government can impose a tax on pollution generated from coal power plants. By imposing a tax based on per unit of pollution generated, it increases the marginal cost of production for the electricity firm. The firm is then incentivised to use cleaner methods of electricity production so as to reduce the amount of taxes it needs to pay. This would address the root cause of market failure as it directly targets the actual amount of pollution released.

However, in the absence of perfect information, it is difficult to measure the value of MEC / amount of pollution generated, therefore making it difficult to determine the optimal amount of tax to impose. Should the government over- or under-tax, inefficiency would still persist.
Furthermore, given that the demand for electricity is price inelastic due to a lack of close substitutes, the electricity firms may pass on a larger portion of the tax burden to consumers. This may worsen inequity as it may make electricity less affordable to lower-income households or increase their household expenditure burden.

Conclusion

In conclusion, using renewable energy subsidies is a more effective solution to the market failure problem caused by negative externalities from electricity production. In the long-term, the problem needs to be resolved by switching to cleaner methods of electricity production so that electricity can continue to be supplied without harming the environment and health of third parties. In order to finance the costs of supporting renewable energy projects, the government can make use of taxation on coal-fired power generation in order to generate revenue that can be channelled to funding the development of renewable energy

Suggested Answers for H1 CSQ 2

(a) (i) Compare the change in China's current account balance with that of the US for the period 2011 to 2015. [2]

The current account balance was consistently in surplus for China whereas for US, it was consistently in deficit. [1]

US current account deficit worsened whilst China current account surplus increased from 2011 to 2015. [1]

OR
However, there is a difference in magnitude: China's current account surplus increased substantially (by 142.9%) during the period whereas US current account deficit worsened marginally (by 5.1%). [1]

(ii) Explain whether the US should be concerned about the changes to her current account balance. [2]

US will be concerned about its current account deficit due to the persistence and size of the deficit. If the size of the deficit is large relative to the country's GDP, the country will not be able to service the deficit and over time, the need to borrow rises eventually leading to debt accumulation. [2]

Such debt financing / accumulation implies that the future standard of living of the country will fall as future incomes will need to be used for debt repayments i.e. borrow to finance current consumption at the expense of future living standards. [2]

Any of the above reasons with clear explanation are acceptable to gain full credit.

(b) (i) What conclusion would you draw from Table 4 about the overall economic performance of United States in 2015 compared with 2011? [2]

The overall economic performance of United States has improved. [1]

Even though the current account balance has worsened, there is an increase in real GDP growth rate from 1.6% in 2011 to 2.0% in 2015 which corresponds with a fall in unemployment rate from 9.0% in 2011 to 5.0% in 2015. [1]

(ii) Comment whether the US central bank's action of raising the interest rate is justified. [4]

The policy was justified to anticipate and prevent imminent demand-pull inflation. Extract 1 'domestic consumer spending has continued to rise and investment by firms have risen' suggested that there will be continued pressure for AD to increase in the successive quarters. Since the economy is operating near the full-employment level, any further increase in AD will lead to a sustained increase in the general price level. [2]

It may not be justified since the rate of inflation of 0.1% in 2015 is low, far from the central bank's 2% target. Moreover, the current account balance has worsened in 2015 which will also dampen the rise in AD caused by the rise in C & I. [2]

(c) Explain how the slowdown in China's economic growth will affect its government budget balance. [4]

As the economy slowed down from 9.5% in 2011 to 6.9% in 2015, China's government budget balance as a percentage of GDP worsened from an initial budget surplus of 0.1% of GDP in 2011 to a budget deficit of 2.6% of GDP in 2015. [1] OR widened the budget deficit to about 3% [1].

The budget balance has worsened due to a fall in government revenue and a rise in government expenditure. [1] From Extract 6, China's slowdown has 'add pressure on policymakers to take more steps to ward off a sharper slowdown'. This implies that the fall in C, I, G or (X-M) may have been countered somewhat by China's effort to lean more on fiscal policy to support growth this year. This will result in a fall in government revenue as a result of tax cuts. [1]There is also an increase in government expenditure as a result of "increased spending on infrastructure". [1]

(d) With reference to the data, discuss the likely impact of China's monetary policy (Extract 7) on the Singapore's economy. [8]

<u>Introduction</u>
China adopted an expansionary monetary policy approach which aims to boost actual economic growth via cutting interest rates (Extract 6: 'Central bank may still need to ease monetary policy'). With lower interest rate, the return to savings will be lower, so households will be encouraged to raise consumption (C) of domestic goods and services and imports.

<u>Impact on Singapore BOP</u>
Current Account Balance
With the lower interest rate in China, consumption of imports from Singapore will rise. Since China is Singapore's top trading partner, demand for Singapore exports will rise and assuming import expenditure remains unchanged, there

will be an improvement in Singapore's net export revenue and current account balance.

The impact on the current account balance will be significant since China is Singapore's largest export market, making up 13.8% of total Singapore exports according to Extract 8.

Evaluation

In China, the central bank adopted a managed-float exchange rate regime where it may allow the currency to depreciate in value as a result of the increase in the supply of Chinese yuan in the forex market (short-term capital outflows as investors search for higher rate of returns overseas) to boost her export competitiveness in view of China posting its 'weakest economic growth in the fourth quarter of 2015'.

Due to the weaker Chinese yuan, the price of Singapore exports in terms of Chinese yuan will increase. So the Chinese consumers will purchase less of the Singapore exports, causing demand for Singapore's exports to fall. This results in a fall in export revenue.

On the other hand, the residents of Singapore will now find imported goods (e.g. China) cheaper in terms of S$. This leads them to purchase more foreign imports. If demand for imports is price elastic, expenditure on imports (in S$) will rise as there will be a more than proportionate increase in quantity demanded for imports. With export revenue falling and import expenditure rising, current account worsens.

Higher interest rate in the US means higher returns to savings, so households may save more instead of buying imports from Singapore, so the net improvement in Singapore current account balance may not be significant.

Capital Account Balance

If China buys more exports from Singapore and net export revenue rises, boosting Singapore economic growth since China is her largest trading partner and export revenue is a large component of Singapore GDP, the positive business outlook may spur capital inflows.

Evaluation

However, from Extract 7, there are 'risks of potential capital flight that could result from fears of further economic slowdown in China'. China's economic slowdown may lead to poor business outlook by foreign investors on the Singapore economy due to the country's high dependence on China as an export market. This may result in long-term capital flows out of Singapore to other developed markets such as US which has a lower reliance on trade.

From Extract 7, there are 'risks of potential capital flight that could result from further US rate hikes'. As US real interest rate increases, rewards earned by the owners of USD-denominated capital will increase. There will be short-term capital flows into the US from Singapore as funds in Singapore chase after the relatively higher rate of returns in USD-denominated financial assets.

Overall impact on BOP

Depends on the impact of China's expansionary monetary policy on its exchange rate which affects price competitiveness of Singapore exports.

Impact on EG, Unemployment & Inflation

Extent of impact on economic growth, employment will depend on the extent of the rise in (X-M). If the net export revenue rises, it will result in a rise in AD and at the initial equilibrium national income level, firms in the export sector will experience a fall in unplanned inventories. Firms will raise production and employment of resources causing the national income to rise by a multiplier and a fall in demand-deficient unemployment.

The extent of the rise in real GDP will depend on the initial state of the economy. From Table 1, Singapore's unemployment rate is at 2.8% in 2015 which suggests that Singapore is operating close to the full employment level. Therefore, the rise in AD is likely to lead to inflationary pressure. However, the impact may be cushioned by 'public-sector construction activities' (Extract 3) which help to boost potential growth.

Conclusion

China easing of monetary policy may result in a rise in purchase of imported goods and services from Singapore, boosting Singapore's trade balance, economic growth, and employment. However, the extent of the impact on Singapore economy will depend on the effect of the fall in interest rate on the Yuan which in turn will affect Singapore's export competitiveness. The rise in US interest rate may also have a negative impact on the Singapore economy since Singapore is an interest rate taker.

(e) Assess the effectiveness of China's supply-side reforms in facilitating a smooth transition to a knowledge-based economy. [8]

Introduction

A knowledge based economy places more reliance on intellectual capabilities like creativity and innovation to produce products that are more knowledge intensive. These products will be of higher value and so generate more exports revenue and economic growth.

Explain the impact of China's supply-side reforms

Impact of corporate tax cuts and infrastructure upgrade and effectiveness

From Extract 7, the cut in the corporate tax would lead to capital accumulation as it encourages both domestic and foreign direct investments (FDI). Local and foreign firms find it more attractive to invest in the country because they are able to retain a relatively larger portion of their profits earned (i.e. higher expected rate of return). FDI in the capital and service industries will help China to transit faster into the knowledge based economy.

The government also directly spends on 'upgrading the information and communication technology (ICT) and R&D infrastructure' which will increase the capital stock and productive capacity.
By boosting G and I, AD will rise, resulting in a multiplied rise in national income, hence achieving actual growth in the short-run. AS will also increase as there is increased accessibility and connectivity within China and with the rest of the world via an upgrade to the 'ICT and R&D infrastructure'. This will reduce business costs and improve productivity. Moreover, it will enhance the competitiveness of firms and attract FDI to invest in the knowledge-based economy. In addition, the growth in labour productivity from using better machineries and/or technology will raise the output produced per man hour and productive capacity.

However, as China is a large country, an effective ICT infrastructure will be very costly and will take time to develop. Moreover, both domestic entrepreneurs and foreign firms may be hesitant to invest if they are not able to rely on the 'clear rule of law and property rights' to protect the proprietary knowledge created.

Impact of removing barriers to encourage domestic entrepreneurship and FDI and effectiveness

With the removal of barriers such as limits on foreign ownership, complex rules, and regulations to start a new business and screening procedures on inward FDI, both local and foreign enterprises would now find it easier and more profitable (lower bureaucratic costs) to invest in different sectors of the economy, bringing much needed capital, skills, and technology.

The advantage of relying more on FDI in addition to domestic sources of capital accumulation is that FDI not only often brings in foreign capital, but also foreign technology and knowledge which can be transferred to the local workforce and facilitate China's transition to a knowledge-based economy.

Impact of privatization and its effectiveness

From Extract 6, the government 'strive to privatize big, highly inefficient state-owned enterprises into market-oriented institutions'. The profit motive of private

firms would lead to greater efficiency in production as these firms would look to reduce costs and develop better quality goods and services to increase profits. Market-oriented institutions will be more competitive as they are profit maximisers as compared to state-owned enterprises which may be X-inefficient as they are less profit-driven. These private firms also have higher tendency to innovate and move into growth industries such as the knowledge based industries.

However, privatisation of state owned enterprises may lead to higher unemployment as excess workers might be laid off to cut costs to stay competitive. In addition, the inefficient state firms may be unable to compete and face a declining industry. This will result in unemployment as firms' demand for labour falls. Thus, the Government will need to come up with retraining program to equip workers with the requisite skills in order to enable them to move into the growth industries such as the knowledge based industries.

Impact of education reforms and effectiveness.

Even though literacy rates had soared with higher spending on education, there is still overemphasis on knowledge transfer rather than the development of imaginative and creative capabilities. To move into a knowledge based economy, it is insufficient to just have the infrastructure but the soft-skills are needed as well. Without the skilled manpower, it will be difficult to move into an economy that relies on knowledge to create value.

Education will improve the skills of the workforce, increase their ability to adapt to new knowledge and improve productivity. However, education takes time and China will have to upgrade its curriculum to focus on imagination and creativity, without which it is difficult to transit into a knowledge based economy.

<u>Conclusion</u>

Whilst the supply side reforms provide some impetus for the transition into the knowledge based economy, more specific policies need to be implemented to enable China to move into a knowledge based economy.

The Chinese government needs to identify the type of knowledge based industries that the country is moving into and provide the institutional supports such as an advanced financial system, good network of high speed ICT infrastructure, educational reforms with a focus on innovation and creativity to develop a pool of skilled workforce. However, there may be huge inertia for state-owned enterprises to embrace the reforms due to their private interests. In addition, these policies often have a long gestation period and require a large financial outlay which will worsen China's budget balance.

Based on the case evidences, the effectiveness of the policies in helping China to transit into a knowledge based economy is limited.

Essay Question 3

(a) Explain why government intervention is needed for public goods and merit goods. [10]

(b) Discuss whether government provision is the best way to address market failure arising from merit goods. [15]

Suggested Answer to Part (a)

A public good has the characteristics of non-excludability and non-rivalry in consumption. Non-excludability means it is impossible or extremely costly to exclude any individual from the benefits of the good once it is provided. That is, the provision of the good to anyone, automatically makes it available to others.

An example is that of the street-lighting. When the light is on, it is difficult to prevent anyone from benefitting from street-lighting. Just like national defence, once provided, it is impossible to prevent any person from the benefits. In this case, since no one can be excluded from the consumption, consumers will not voluntarily offer payments for public goods. He will free ride. A free rider is someone who cannot be excluded from enjoying the benefits of the good once provided. No consumer will be willing to pay and thus, there is no effective demand. Without the price signal to producers, they will be unable to produce.

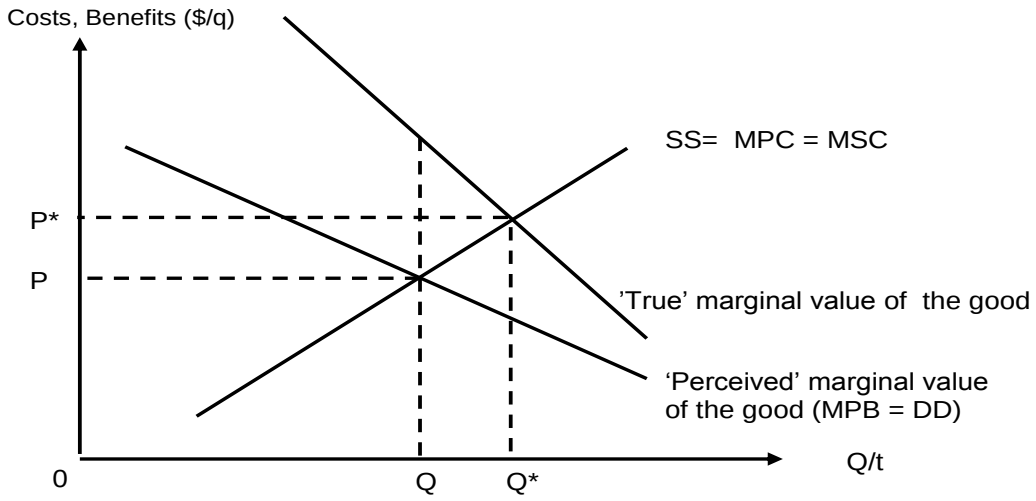
Non-rivalry in consumption means consumption of the good by one individual does not reduce the quantity available for consumption to others. The consumption of the good by one additional person does not require extra production cost. Thus, the marginal cost of providing the good to one more person is zero. With the same example of street-lighting, once the lights are on, the brightness is the same regardless of whether it is a single person or a thousand walking past the lights. This means that the total cost of production does not vary as the number of users varies.

Since non-payers (due to non-excludability) can enjoy the good just as much as someone who pays for it (due to non-rivalry), giving rise to free-rider behaviour, the private sector will not want to produce the good. If resource allocation is left to the free market, there will be no production of such goods and a missing market occurs. When there is a missing market for public goods, government intervention in the provision is necessary.

A merit good may be one associated with significant ignorance or lack of information about the private benefits and some consumers simply misunderstand (or underestimate) the “true” benefits which the consumption of the good may confer themselves. Ignorance is a result of lack of information. For example, an uneducated person may not be fully aware of the various benefits of education for his child and

chooses not allow his child to attend school, and hence has not accurately considered the benefits of education in his decision-making.

As a result, the demand for merit goods based on the perceived marginal value (MPB=DD) will be too low and there will be insufficient consumption of these goods at Q (MPB=MPC) rather than Qx.



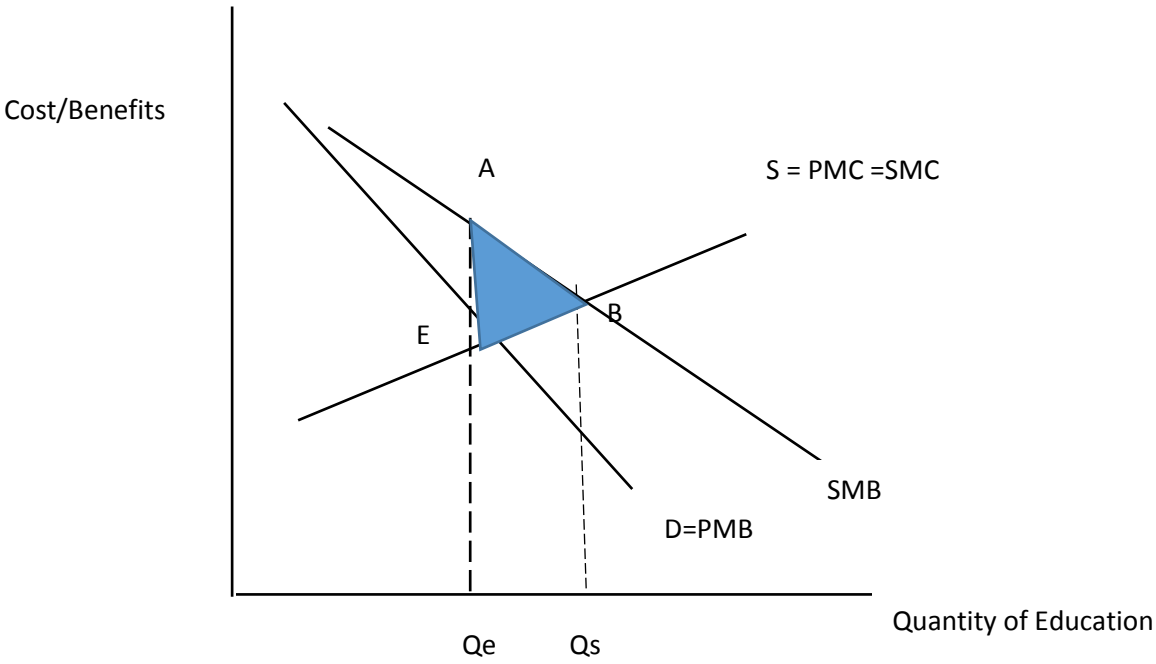
A merit good such as education may also be seen as one with significant positive externalities. It confers external benefits on third parties and if left to market forces, it will be under-consumed.

Often, these goods confer benefits to society in excess of the benefits to individual consumers, that is, there are external benefits or positive externality. The positive externalities are benefits to third parties who are not involved in consumption and production from the activity undertaken by someone else.

An example can be in education where the society will benefit more from the outcome of education than the private benefit. For the individual seeking education, he will only take into consideration his private costs of education which can be fees, books, etc. His private benefits will be improving his own literacy and possibly the rise in his career, gaining higher wages. Market operates only on private benefits and private costs. He will not consider the external benefit to society of higher education, like the rise in overall productivity of the economy, raising real growth and income for others in society. Leaving it to the price mechanism, there will be under-allocation of resources to produce merit goods because individual consumers and producers do not take into account the positive externalities arising from the consumption of such goods.

The positive externality of the merit good, education, will lead to the divergence of private benefit and social benefit (sum of private benefit and external benefit). In the diagram, the market equilibrium, is at Qe, where PMB=PMC. But at Qe, SMB is greater than SMC. Society values the extra unit of education more than what it cost

society to provide it. The social optimal level of the merit good for education is at SMC=SMB, which is at Qs.



The price mechanism under-allocates resources to produce the merit good, education. Area EAB represents the welfare loss to society due to the under-allocation of resources. Market has failed as the education is overpriced. Society as a whole could be made better off if the current level of education were increased to social optimal level at Qe. In Singapore, there is large provision of state grant for education at all levels to ensure that the consumption is at the social optimal level and not at the free market level. The benefits to society far outweigh the cost of providing those grants.

Suggested answer to Part (b)

Introduction

Merit goods such as education (explained in part a) or healthcare are under-consumed or under-provided but have benefits to society that the government deemed society should have more of, there are various policies to increase consumption and production of it.

Body: Government Provision of Merit Good to address market failure

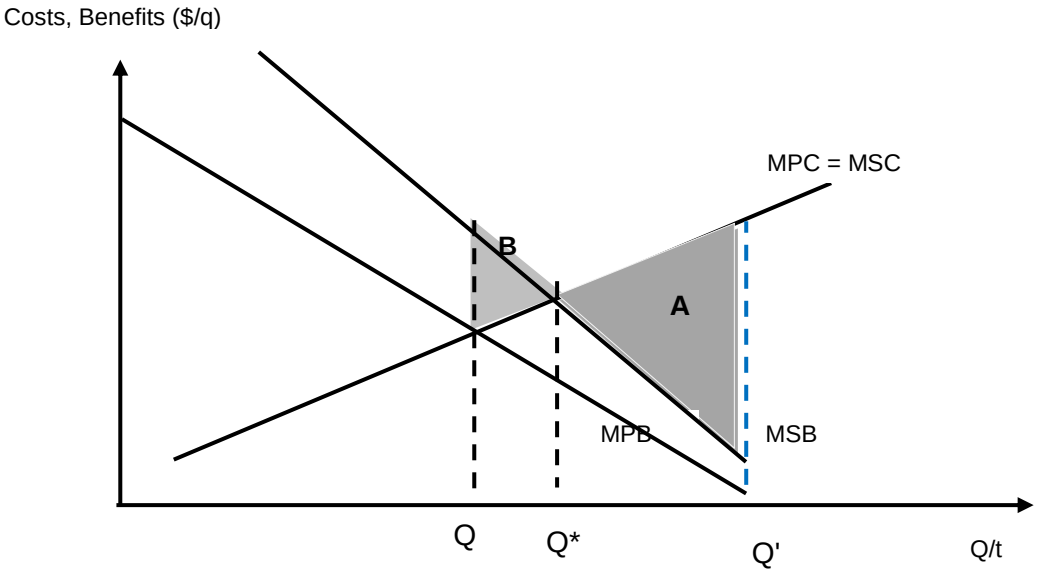
The government can either supply a public good directly or finance a private firm to supply it. As the government is non-profit oriented, it does not need to charge a price that will cover the costs of production. It can finance the provision of public goods through the taxes that it collects.

The intended consequence of this method of intervention is to produce the good that society wants and improve the welfare of society, bringing the production level closer to the socially optimal level where MSB=MSC.

Evaluation of State provision:

- Without the profit motive, public hospitals (in case of healthcare) lack the incentive to minimise costs and hence they tend to be productively inefficient.
- Without market pricing and costing to guide the state, mismanagement can occur resulting in misallocation of resources and poor quality of services provided. It is not uncommon for doctors in public hospitals to be paid below market rates and to be overworked. The lack of such qualified labour will then lead to chronic shortages and poor quality. (unintended consequence on the issue of quality)
- Over-consumption of such goods occurs, worsening the problem of allocative inefficiency.

Over-consumption of zero priced good



The socially optimal level of output is where MSB = MSC i.e. output Q*. If the good is provided free, consumers will demand Q' units. If the entire amount demanded is supplied, then the resulting deadweight loss is shown by area A. On the other hand if the good was supplied fully by the free market without state intervention, production will be where MPB = MPC at output Q. The loss in welfare will then be B.

Since area A is bigger than area B, if a good is provided free, there will definitely be over consumption possibly leading to a higher welfare loss as compared to the good being provided by the free market. Hence, the state's 'free' provision gives rise to even greater social inefficiency compared to a free market outcome.

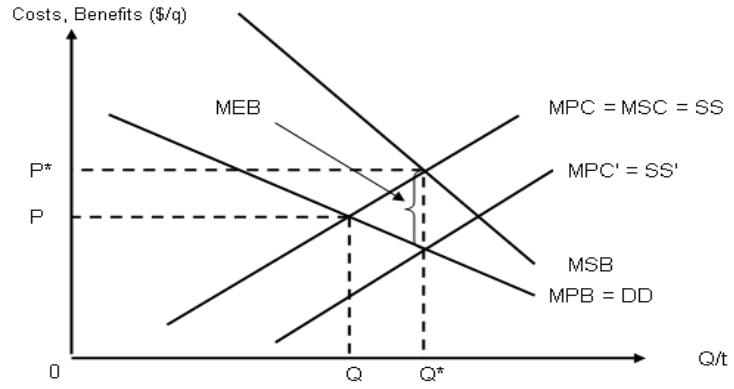
Alternative Intervention with the market failure - subsidy

The government may also seek to increase provision of healthcare or education by granting subsidies to lower the marginal costs of production. The real target is output rather than price. The subsidy used to increase production to the social optimal level will cause the price to be lower.

This works via the supply side where subsidies are given to public health care providers (training of doctors and other medical professionals) or even private General Practioners (GPs). (can apply the same for education)

This shifts the supply curve (MPC=MSC) rightwards, making the service available at cheaper price and hence increase consumption to the socially efficient level of output.

Subsidies and positive externalities



Social efficiency can be attained by giving a unit subsidy. When a unit subsidy equal to the MEB at Q* is given, MPC drops to MPC' as the private individual in consumption of healthcare internalises the external benefit to society. Market equilibrium (MPC'=MPB) now coincides with social equilibrium (MSB = MSC). At P*, the socially efficient output (or consumption) level of Q* is attained. Hence, there will be an improvement in resource allocation.

The advantage of a subsidy is it allows the market mechanism to continue operating by incentivising the providers of healthcare or education to internalise the external benefit. The subsidy is adjustable according to the magnitude of the externalities. Allocative efficiency could be better achieved since it is flexible.

However, it is hard to determine the value of the divergence between MSB and MPB. This would mean that an over-correction could happen, leading to a worsening of the market failure

Subsidies may encourage the increased production of what is deemed desirable for the overall good of the society, but it may also increases the producers' profits. Furthermore, the subsidised provision benefits both the poor and rich users of healthcare and education equally, though means-testing can minimise inequity in provision.

Alternative Intervention with the market failure - legislation

In the case of Singapore, the government may impose legal regulation to directly influence firms' or consumers behaviour. They do not change price but can compel society towards certain behaviour e.g. compulsory education.

Under the Compulsory Education Act passed in 2000, it is required that children born after Jan 1, 1996 receive at least six years of education. This regulation made it a criminal offence if parents fail to enrol their children in school and ensure their regular attendance. By legal regulation, the demand for education increases, moving the society closer towards social optimal output.

The advantage of imposing legal regulations is that they are relatively easy to comprehend and administer. For the law to be effective, the penalties for breaking the law can be made sufficiently harsh. One potential problem that could arise out of such a solution is that it can be costly to monitor the level of compliance. Singapore's literacy rate stand at close to 100% (Yearbook of Statistics Singapore, 2014), lending, perhaps, credence to the effectiveness of the Compulsory Education Act.

Conclusion:

To determine if government provision is the best way to address market failure arising from merit goods like healthcare or education, there is a need to assess whether it addresses both equity and efficiency. Once it does not, other policies like subsidy, government regulation, public education etc will be needed. Given the near 100% literacy rate in the case of Singapore for the various combination of policies for education (can do the same for healthcare), the government has addressed the current education case for merit good. Education at the compulsory level is affordable and consumption must be near social optimal level due to the level of literacy rate

Essay Question 4

Globalisation has helped Singapore attain actual economic growth and low unemployment through increased international trade; and kept inflation low. In addition, large amounts of foreign direct investment have helped Singapore achieve potential economic growth. Despite all its apparent benefits, globalisation has some downsides particularly in times of global recession.

Source: Adapted from *The Business Times,* Jan 24 2013

(a) Explain how globalisation has adversely affected the growth of the Singapore economy. [10]

(b) Discuss whether fiscal policy alone is effective for Singapore to overcome the effects of the global recession. [15]

Suggested answer to (a)

Introduction

Economic growth refers to both actual and potential growth. Actual growth is an increase in the capacity of an economy to produce goods and services, compared from one period of time to another. Potential growth, on the other hand is an increase in the productive capacity of an economy, usually dependent on the quantity and quality of factors of production available in the economy.

Globalisation is the increased integration of economies around the world, through the movement of goods, services, capital, labour and knowledge across international borders. Technological advancements and increasing liberalisation of trade and capital markets have resulted in an increasing trend toward globalisation.

Body

While globalisation has brought much benefits to Singapore in terms of economic growth and development, it has also resulted in more uncertainties because of her heavy dependence on trade and capital flows.

<u>Explain how actual growth is adversely affected</u>

Singapore's ***dependence on exports makes her vulnerable to negative economic conditions*** in other countries. If one of Singapore's trading partners were to experience a recession, demand for her exports would fall. This reduces AD which leads to lower equilibrium national output. Thus, the Singapore economy is susceptible to demand shocks.

While globalisation gives Singapore a bigger market for her exports, it also means that she could ***face more competition***. Developing countries, like China, are catching up quickly. Singapore has already lost her comparative advantage in low- to medium-end manufacturing to rapidly industrialising countries. If exports decrease due to

competition from low-cost countries, it will result in a fall in AD, which would lead to a drop in output.

In addition, Singapore's ***dependence on foreign direct investment (FDI)***, which comprise a significant portion of her AD implies that should there be a global recession, these MNCs may withdraw their investments.

The combined fall in net exports and investments would have a ***significant negative effect on Singapore's AD***, given the high composition of these determinants to the country's national income; resulting in a multiple fall in output via the multiplier process. Thus, actual growth is negatively affected.

Explain how potential growth is adversely affected

Furthermore, increases in Singapore's productive capacity brought about by globalisation might not be permanent because she is ***highly reliant on MNCs which are by nature internationally mobile***. They could shift operations to a lower-cost location, taking capital with them.

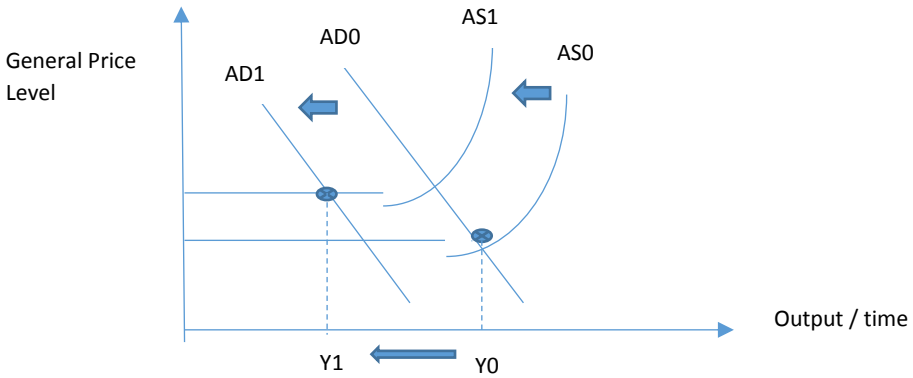
There is no guarantee that Singapore's "foreign talent" will stay in the country for the long term. Importing foreigners to increase Singapore's labour is also unsustainable in the long term given Singapore's small land size because the influx of foreigners, perceived to be ***competing with Singaporeans for jobs and space***, has become a major source of political and social discontentment.

The ***lack of natural raw materials*** in Singapore means that she is highly dependent on imported raw materials for production. Importing raw materials from abroad also leaves Singapore vulnerable to cost-push inflation, especially imported inflation.

The combined effects of rising cost of production and limited factors of production would ***affect Singapore's potential growth negatively***.

Explain how a fall in AD and AS affects economic growth

Thus, the fall in AD and AS would lead to a fall in economic growth. This is illustrated by a leftward shift in the AD curve and a leftward shift in the AS curve in Figure 1 below.



The ***combined effect*** of leftward shift in AD curve from AD0 to AD1 and AS curve from AS0 to AS1 will result in a significant fall in output for Singapore. In addition, there

may also be a rise in rise in general price level if cost of production rises in the short run.

Conclusion

Singapore's heavy reliance on exports means that she will experience high cyclical unemployment should her major trading partners enter recessions. In the long run, there could be an increase in structural unemployment as more jobs are outsourced or face competition from foreign workers willing to work longer hours and at lower wages.

Despite the drawbacks, globalisation has been largely beneficial for Singapore. This is mainly due to the way in which the government has managed to tap into opportunities offered by a globalised world by providing necessary infrastructure, low tax rates, and a highly-skilled workforce. At the same time, the government has been able to mitigate some of globalisation's downsides through her economic policies.

Suggested answer to Part (b)

Introduction

In a global recession, Singapore's trade partners will experience a fall in national income and face rising unemployment. Consequently, these trade partners are likely to reduce their demand for Singapore's exports as well as reduce the volume of FDI into Singapore. These would lead to falling AD and rising unemployment for Singapore.

As such expansionary fiscal policy may be adopted to tackle these effects of a global recession. An increase in government spending or reduction in direct taxes may be used in this case to boost Singapore's economy to some extent.

Body

Explain how expansionary fiscal policy works and its limitations

In order to boost the falling AD, expansionary fiscal policy through increased government spending (G) can help mitigate the fall in export revenue and FDI inflow. Direct government spending, holding all else unchanged, will result in a multiple increase in output via the multiplier process.

This rise in output will help to mitigate the fall in injections from falling export revenue and FDI inflow. At the same time, the rise in cyclical unemployment that comes from falling AD will also be reduced.

However, for a country like Singapore lacking in natural resources and small capital base, the reliance on external demand (in the form of export) and foreign capital (in the form of FDI) is significant relative to the expenditure of the government. Thus, in order to offset the fall from X and I, the spending by the government (G) needs to be significant which may be burden for the government in the future.

In addition, due to the high leakages from savings and import, the multiplier size is relatively small. This would affect the impact of direct spending (G) on the output.

Alternatively, expansionary fiscal policy can also come in the form of reduction in direct taxation. A reduction in income tax increases household disposable income while a reduction in corporate tax increases after-tax profits for firms.

As household disposable income rises, consumption expenditure (C) could rise. Holding all else unchanged, there will be a rise in AD. Similarly, firms now are able to increase their investments. This applies to both domestic firms as well as FDI. This implies that there could be a rise in the 'I' component of the AD as well; mitigating the fall in AD brought about by the global recession.

However, the level of households and firms' confidence in the economy during a global recession is important in determining the additional expenditure that these economic agents are willing to spend. In addition, in such adverse times, it is unlikely that the rise in C and I can offset the fall in AD as a result of global recession.

Moreover, there is always the issue of time lag for government policies and lack of information for intervention to be appropriate and timely. Usually, when any planned intervention is executed, the size or impact of the problems would have multiplied resulting in insufficient or inaccurate measures being adopted to address the consequences.

Explain alternative policies

Thus, in addition to expansionary fiscal policy, the Singapore government has adopted supply-side policy measures.

To maintain export competitiveness in a global recession, the Singapore government can control domestic costs of production. A reduction in the Central Provident Fund (CPF) contribution rate for employers will help reduce wage burden for domestic firms. This will in turn help firms control production costs. The lowered contribution will thus lower cost of production for domestic firms, allowing these firms to be more price competitive.

Other supply-side policy measures like subsidies for Research and Development, workers training like Workfare Credits and promotion of innovation like the Productivity Innovation Credits (PIC) can also help domestic firms improve on the quality of their goods and services. Such measures is also likely to attract and maintain the FDI inflow as foreign firms find it more attractive to invest in Singapore. This will also help maintain Singapore's export competitiveness in terms of the quality of goods and services as well as maintain business confidence.

Apart from helping to mitigate the fall in export and FDI, supply-side measures can also help reduce any structural unemployment because workers have the avenues and facilities to be equipped with the necessary technical knowledge and skills to remain occupationally mobile.

In addition, the Singapore government has also implement various trade policy to ensure that she is able to leverage on the access to larger markets for diversification and growth.

A small country with limited resources, Singapore relies heavily on imported raw materials and external demand for her production. As such, one of the trade policy thrusts is to sign trade arrangements like FTAs with her trade partners. Such FTAs would allow Singapore a wider base to source for raw materials, keeping prices of imported raw materials low. In addition, these arrangements also provide access for Singapore exports to larger markets. This will lead to greater Economies of Scale in production. The lower average cost therefore helps to maintain Singapore's export competitiveness.

Allowing the Singapore dollar to gradually appreciate against her trade partners can also keep imported cost of raw materials in check. A stronger S$ would mean that the imported raw materials measured in S$ becomes cheaper. However, it would also mean that Singapore's exports in foreign currency would become more expensive.

Hence, the supply-side policy measures to value-add to the production is critical in maintaining Singapore's export competitiveness.

In a global recession, where incomes and prices are falling globally, Singapore may not maintain the stance of gradual appreciation of the S$. Instead, she may need to devalue the S$ in order to raise export revenue. This is particularly so since exports are price elastic.

Evaluation

As the national income for Singapore falls due to the fall in exports and foreign investments, Singapore will also lose her ability to import goods and services abroad. This, in turn causes her trade partners' export revenue to fall further, worsening their recession. This spiral effect will affect Singapore significantly due to her ***heavy reliance on external demand***.

Rising unemployment, ***cyclical in the short run and structural in the long run***, are the main concerns when an economy faces a recession. While policy options aim to boost AD in the short run, they should also take into consideration concerns of structural unemployment. The concern of 'de-skilling', where retrenched workers lose their proficiency over time; and that of occupational immobility when job demands changes; can be serious if there are no re-training platforms available in the economy.

Conclusion

Thus, policy options adopted by Singapore need to address the root cause of these problems. However, a mix of policy options is usually used to ensure that certain policy limitations or consequences can be addressed. Thus, ***fiscal policy alone will not be sufficient*** to overcome the effects of a global recession.