JURONG JUNIOR COLLEGE

2013 JC2 ECONOMICS 8819 (H1)

PRELIMINARY EXAMINATION

ANSWER BOOKLET

Suggested Answers for 2013 J2 H1 (8819) Economics Prelim Case Study Questions

Question 1

(ai) Compare the change in government expenditure on education between primary schools/secondary schools/junior colleges and tertiary sector for the period 2006-2011. [2]

Government expenditure on education for primary schools/secondary schools/junior colleges **consistently** *increased* whereas government expenditure on education for tertiary sector **generally** *increased* **with the exception of Year 2007**.

[1] Overall change in direction.
[1] Refinement: Whether the change is consistent or not / Rate of change (faster increase on tertiary education of 66% compared to 40% on primary schools/secondary schools/junior colleges).

(aii) Identify the educational sector that has the highest government recurrent expenditure on education per student in Year 2011. [1]

Tertiary sector. [1]

(b) Extract 1 refers to the increased emphasis placed on private tuition as Asian parents try to give their children the best start in life.

Use demand and supply analysis to explain the impact of the increased emphasis placed on private tuition by Asian parents on the private tuition market. [5]

Step 1: Explain the demand factor

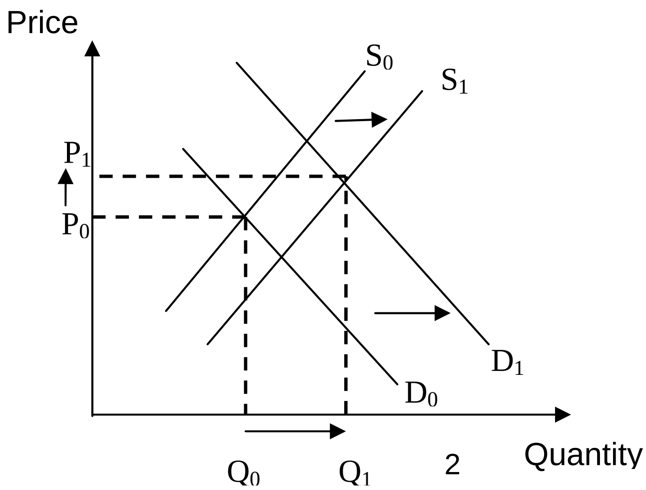
- As mentioned in Extract 1, there is an increased emphasis placed on private tuition by parents as they want to give their children a head start. This is reinforced by the lure of advertisements on the services of "star" tutors in mass media which entices consumers as seen in Extract 1. This has resulted in a **change in taste and preferences** towards private tuition resulting in an **increase in demand for tuition services**.

Step 2: Explain the supply factor

- There are also incentives to offer tuition services as it is a lucrative and profitable industry, resulting in an **influx of players** in the industry. The increase in the number of producers leads to an **increase in the supply of tuition services**.

Step 3 & 4: Dominating factor/Draw and describe diagram

- The above factors will result in an increase in demand for private tuition services as shown below by a rightward shift of the demand curve from D_0 to D_1 and an increase in the supply of private tuition services as shown by a rightward shift of the supply curve from S_0 to S_1.
- The increase in demand for private tuition services is more than the increase in supply because of the **large** change in taste and preferences towards private tuition services as seen by the increased willingness to spend on private tuition services by parents.
- This leads to both an increase in the price of private tuition services from P_0 to P_1 and quantity of private tuition services from Q_0 to Q_1.



Up to 3 marks *(1m for demand explanation, 1m for supply explanation and 1m for 2 pieces of evidence)* for a well-developed explanation of 1 demand and 1 supply factor with the use of case study evidence.
1 mark to be awarded for candidates who commented on the dominating factor (either demand or supply) with justification.
1 mark to be awarded for a fully-labelled diagram with explanation.

(ci) What is meant by price elasticity of supply? [1]

The price elasticity of supply measures the **responsiveness of the quantity supplied of a good** to a given change in the price of the good itself, ceteris paribus. [1]

(cii) Justify the value of the price elasticity of supply for tuition services. [2]

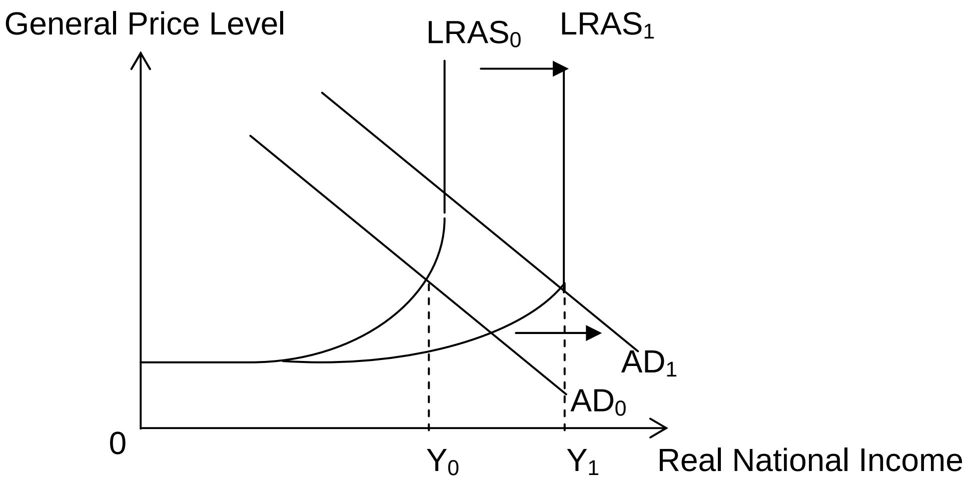
The supply for tuition services is price elastic and the price elasticity of supply value is **more than 1** [1] due to **high factor mobility** [1]. As evident in Extract 1, it is not difficult to employ private tutors, hence producers can increase the supply of private tuition services more readily.

(d) Explain how the policy options mentioned in Extracts 2-5 can help Singapore achieve a sustained and inclusive economic growth. [6]

With an increase in government expenditure on education, there will be more government projects available which might lead to recruitment of staff, hence increasing employment. This will lead to an increase in income, purchasing power and consumption. The increase in G and C will cause Aggregate demand (AD) to increase from AD_0 to AD_1, via the multiplier process, national income will increase by the multiple. Actual growth is achieved as a result.

With a more educated workforce, this will lead to an **increase in labour productivity and quality of labour.** A better-skilled workforce is also more responsive to changes, and is more willing to take up further training to upgrade skills or to acquire new skills. In addition, the promotion of entrepreneurship education in schools and support by ACE which includes internship opportunities, will encourage the birth of more entrepreneurs, leading to an increase in the **quantity of entrepreneurs.** Entrepreneurs organize factors of production, explore new markets, innovate and take risks in anticipation of demand. With greater labour productivity and more entrepreneurs, it will lead to an **increase in the productive capacity** of the economy and long run aggregate supply (LRAS) from $LRAS_0$ to $LRAS_1$. Potential growth is achieved as a result.

With an increase in AD and LRAS, sustained growth is achieved as shown in the diagram below. Real national income has increased from Y_0 to Y_1.



As evident in Extract 3, MOE has expanded the school-based dyslexia remediation and provided more resources to SPED schools. There will also be more support for students from needy families. Extract 5 also showed that more healthcare related courses have been introduced to cater to the needs of Singapore's aging population. With policies in place that aim to improve the welfare of the disadvantaged and less fortunate, it helps to achieve an inclusive growth for Singapore.

Mark Scheme

L2	Well-developed analysis of how actual, potential and inclusive growth is achieved, aided with a fully labelled/accurate diagram and with reference to the case study evidence. *Maximum 5 marks for answers without diagram.*	**4-6**
L1	Under-developed explanation of how actual, potential and inclusive growth is achieved *Maximum 3 marks for answers without reference to case study evidence.*	**1-3**

(e) With the aid of a diagram, explain how inefficient allocation of resources arises in the market for education. [5]

Education is a merit good that yields **positive externalities/external benefits** and is **deemed intrinsically desirable by the government**. Positive externalities are the **benefits to third parties** who are not directly involved in the production or consumption of a good. It is **not reflected in the price of the good**.

External benefits of education include a more **educated workforce** which will contribute to **greater efficiency and productivity** resulting in **potential growth**. **Marginal private benefit (MPB)** refers to the benefit like the knowledge gained by the consumer from an additional unit of the good consumed. **Marginal private cost (MPC)** is the cost incurred like school fees from an additional unit of the good consumed.

Figure 2 illustrates the situation where the consumption of a good generates positive externality. **Marginal social benefit** (MSB) is the additional social benefit from the last unit of a good consumed, MSB = MPB + MEB where MEB is the **marginal external benefit**. **Due to the presence of positive externalities**, which is shown by the MEB at a particular level of output, **MSB will be greater than MPB**, as shown by the divergence of MPB and MSB. This means that the benefits to society include not just the benefits to the consumer but also the benefits to 3rd party enjoying the positive spillover effects, shown as MEB at a particular level of output. **Assuming that MPC = MSC**. Since the consumers will only consider their private benefits and costs, while ignoring external benefits to third parties, they will **consume at output level Qp where MPB = MPC**. However, the **socially optimal level of output occurs at Qs where MSB = MSC**. Since **Qp is less than Qs**, it means that the price mechanism on its own cannot achieve an efficient allocation of resources. There is **under-consumption**. **Between Qp and Qs, the social benefits of an additional unit of good consumed is higher than the social costs**, resulting in **welfare loss** equivalent to the shaded area. Hence market failure occurs since the market mechanism is not able to achieve an efficient allocation of resources.

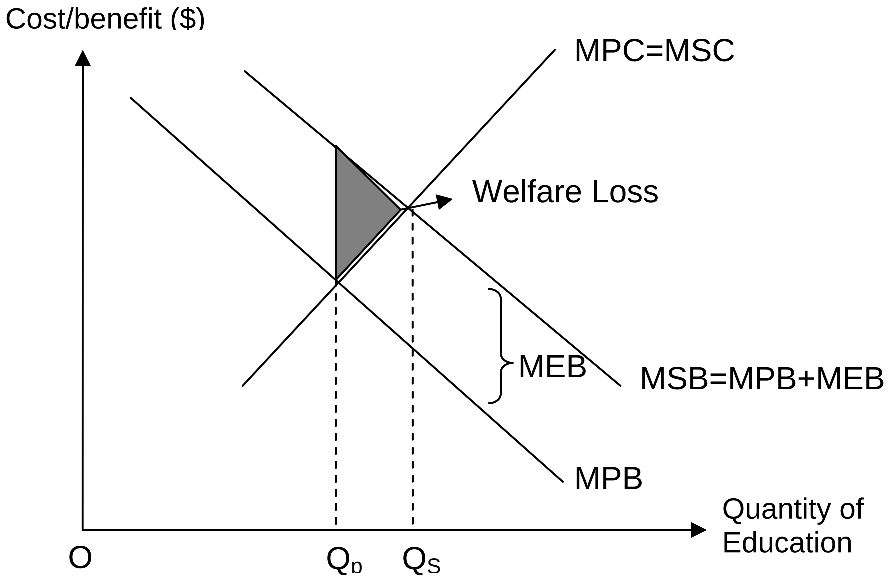


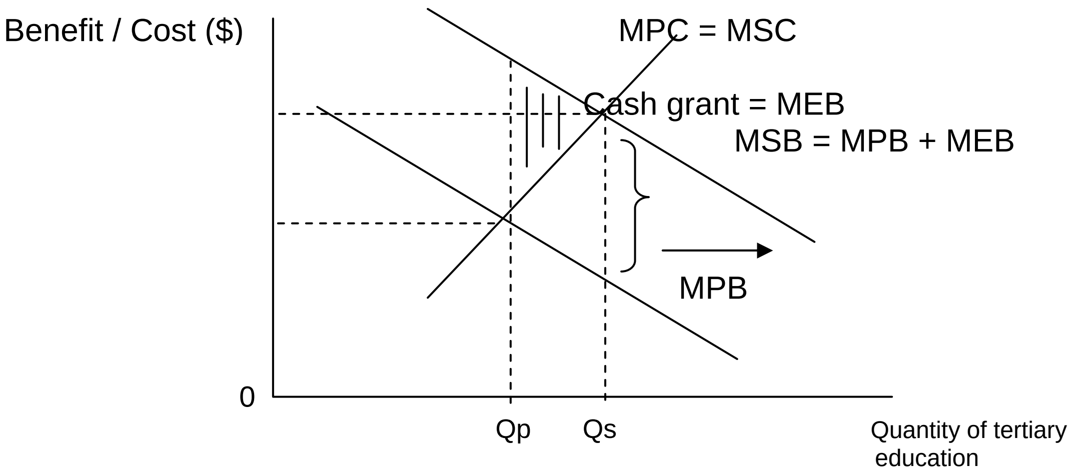
Figure 2

Mark Scheme

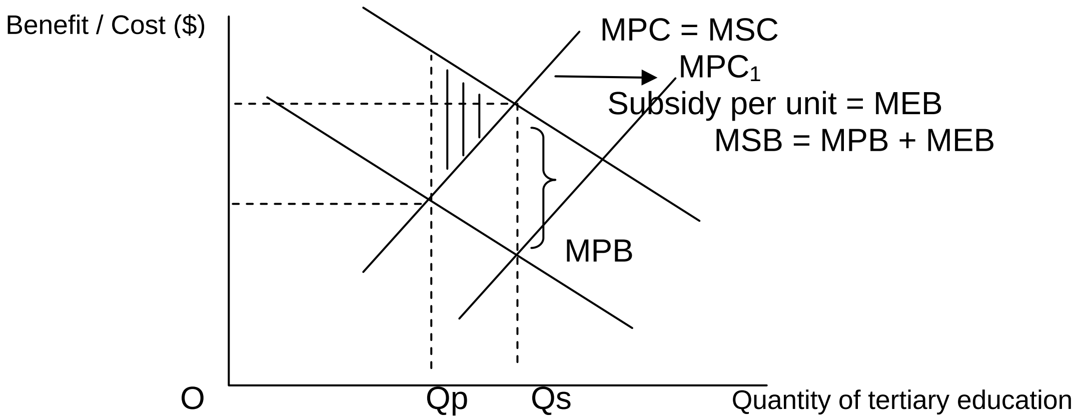
L2	Well-developed analysis of why the market fails, aided with a fully labelled/accurate diagram and with reference to the case study evidence. Max <u>4m</u> for a well-developed analysis with no reference to the context of education.	3-5
L1	Under-developed explanation of why the market fails.	1-2

(f) Evaluate the effectiveness of the policies used by the Singapore government to achieve an efficient allocation of resources in the market for tertiary education. [8]

<u>Explain how cash grant works</u>
According to Extract 4, the Singapore government topped up the PSEA for every Singaporean child aged 7 to 20 which ranged from $100 to $500. This cash grant is made available to consumers to encourage the consumption of goods with positive externalities. The government can give consumers a cash grant which is equal to MEB at Qs. This cash grant must be spent on tertiary education only. This measure has the effect of shifting the MPB curve to the right towards the MSB curve and hence increasing consumption from Qp to Qs.



Explain how subsidies works
Accordingly to Extract 5, MOE is offering undergraduate degree programmes at lower cost compared to similar programmes overseas. In this case, the government gives subsidies to the producers, which is equal to MEB at Qs. This will lower the cost of production, making the degree programmes available at a lower price, thus reducing MPC and shifting the MPC curve from MPC to MPC_1 and hence increasing consumption from Qp to Qs.



Explain the limitations
It is hard to measure in monetary terms many of the external effects due to tangible and intangible benefits like a more productive workforce; hence it is difficult and impossible to find the 'right' amount of subsidy or cash grant which will enable the market to consume tertiary education at the socially optimum level of output. If the government underestimates the external benefits, the subsidies or cash grant may be insufficient. In this case, there will still be a situation of under-consumption. If the government overestimates the external benefits, resource allocation is still inefficient.

The policy also incurs opportunity cost on the limited government resources available. The expenditure on tertiary education could have been channelled to other essential sectors like healthcare and defence.

Stand
As shown in Table 2, there has been an **increase in enrolment in the tertiary sector** which implies that the policies adopted by the Singapore government **have been effective** thus far.

Evaluation 1
It is necessary for the government to carry out a thorough cost-benefit analysis to assess whether its measures will lead to net welfare gain, so as to ensure that resources are optimally allocated and society welfare is maximised. Ultimately, a **combination of policies** that influence both the consumers and producers is needed to achieve an efficient allocation of resources.

Or Evaluation 2
The case in today's context is not to simply increase the consumption of education but also to increase the **quality of education** to meet individual's aspirations and the needs of the Singapore economy. Extract 4 also showed that there is a wider choice of courses made available by MOE through collaboration with overseas degree providers.

Or Evaluation 3
There may be **government failure** in terms of bureaucracy, red tape and information failure when government intervenes. Although the socially optimal level of output may not be attained due to limitations of the policies, government intervention usually ensures a better allocation of resources and results in an output level that is closer to the socially optimal level.

Mark Scheme

L3	Well-developed analysis of cash grant and subsidies with strong reference to the diagram and case study evidence + well-justified evaluation. Max <u>7m</u> for an answer without a well-justified evaluation.	6-8
L2	Under-developed explanation of cash grant and subsidies with some reference to the diagram and case study evidence. Max <u>3m</u> for a well-developed analysis of one policy with some reference to case study evidence.	3-5
L1	Smattering of valid points	1-2

<u>CS Question 2</u>

(a) Describe the trend of Singapore's real GDP for the period 2009 to 2012. [2]

Singapore's real GDP is increasing **(1)** at a decreasing rate **(1).**

(b) Using Table 3, account for the relationship between Singapore's net exports of goods and services and real GDP between 2009 to 2012. [4]

Both net exports of goods and services and real GDP increased between 2009 to 2011. **(1)** The relationship between Singapore's net exports of goods and services and real GDP is positive **(1)** from 2009 to 2011. However in 2012, net exports decreased while Singapore's real GDP still increased, showing a negative relationship. **(1)** This increase in Singapore's real GDP can be explained by the increase in the consumption and investment components of aggregate demand. **(1)**

(c) Explain one of piece of information that would be useful in explaining the slowdown in growth in China. [2]

Evi 1: **Lacklustre external demand (Extract 6)**. With a weakening of global demand for exports, Chinese exporters are exporting less. There is a fall in export revenue and ceteris paribus this will lead to a fall in net exports, thus AD falls. NY will fall by a multiple due to the multiplier. This will dampen the growth in China.

Evi 2: An **increase in labour cost (Extract 6)** will lead to an increase in cost of production for producers. As profit maximizers, they will not have incentives to increase production when the cost of production increases. This will lead to a cut back in production, leading to a fall in SRAS. NY will fall. This will dampen the growth in China.

Evi 3: **Appreciating Yuan (Extract 6)**: The price of exports will rise in foreign currency. Thus, China will experience a fall in her export competitiveness. If the demand for the exports is price elastic due to availability of substitutes, the quantity demanded will fall more than proportionately, hence export revenue for China will fall. With an appreciation of Yuan, the price of imports will become cheaper in domestic currency. Assuming that the demand for imports is price elastic, a fall in price for imports will lead to a more than proportionate increase in the quantity demanded, thus increasing the import expenditure. A fall in export revenue and an increase in import expenditure will lead to fall in net exports, causing AD to fall. NY will fall by a multiple due to the multiplier. This will dampen the growth in China.

<u>*Students need to mention that growth is dampened to get the full 2m.</u>

(d) Discuss the view that China should "rebalance its economy". [8]

Rebalancing China's economy means rebalancing away from exports towards consumption.

<u>Thesis: China should “rebalance its economy</u>”
Vulnerability to external shocks
The Chinese government needs to boost the level of domestic consumption so that it is less susceptible to external shocks.

The weak global economic environment may affect China’s economic progress as demand for her exports dampen which may worsen her balance of payment position. In addition, the fall in net exports will decrease AD and thus decrease NY by multiple times through the reverse multiplier process, slowing down growth.

Loss in Comparative Advantage
Extract 8 mentioned that China needs to reduce its reliance on exports as it has lost its comparative advantage due to increasing costs and rising wages. In addition, the gradual appreciation of the Yuan has reduced China’s export competitiveness. In order to sustain growth, China has to rebalance and focus on domestic demand as it is difficult for China’s exports to grow significantly due to these two factors.

Reduce pollution
Rebalancing slows down the economic growth, which slows down production and leads to less environmental degradation (Extract 8). This may improve the quality of air as less air pollutants are emitted, hence improving the qualitative aspect of SOL.

<u>Anti-Thesis: China should not “rebalance its economy</u>”
Small proportion of Consumption contributing to GDP
Although China is trying to rebalance its economy towards consumption as stated in Extract 7, consumption as a proportion of GDP is much lower than other major economies in the world despite it having a huge domestic market. Given that consumers are elusive and confidence remains low, consumption will not increase significantly. Thus rebalancing has limited success.

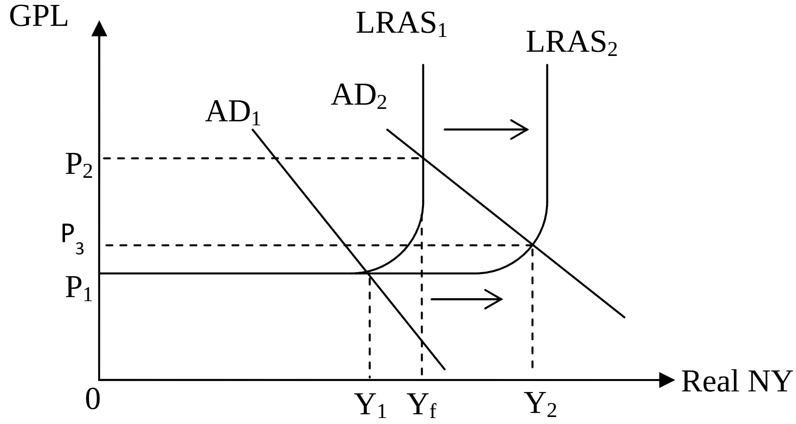
Structural unemployment
Extract 8 mentions that economic restructuring is a slow process, suggesting that there is a lack of available skilled labour to produce the type of goods required for domestic consumption. As displaced workers cannot find jobs in the sunrise industries due to a mismatch of skills, structural unemployment increases. As mentioned, high unemployment may also lead to social unrest.

<u>Conclusion</u>
Overall, China should rebalance the economy as it helps to sustain growth and reduce short term vulnerability. It seems that the Chinese government is committed to rebalancing as it is prepared to accept lower growth with rebalancing, as stated in Extract 8. China can no longer rely mainly on export demand as her major trading partners like the US are not doing well currently and are expected to be so for the next few years.

Mark Scheme

L3	Well-developed explanation of why China should or should not rebalance its economy, with strong use of case study evidence. **<u>Max 7m</u> for an answer without a well-justified evaluation.**	6-8
L2	Under-developed explanation of why China should or should not rebalance its economy, with some use of case study evidence. OR **<u>Max 4m</u>** for a well-developed one-sided explanation of why China should or should not rebalance its economy, with some use of case study evidence. *Maximum 4 marks for answers without reference to case study evidence.*	3-5
L1	Smattering of valid points	1-2

(e) With the help of an AD/AS diagram, explain the impact in both the short and the long run of a rise in foreign direct investment on the macroeconomic performance of China. [6]



Achieving actual growth and full employment

In the **short run**, when foreign direct investment rises, it will bring about an increase in investment. AD will rise as investment is a component of AD. The AD curve will shift from AD_1 to AD_2 and NY will increase by a multiple due to the multiplier from Y_1 to Y_f, thus achieving **actual growth.** The rise in NY will lead to an increase in production and demand for labour, thus **reducing unemployment.** If China is near full employment, the increase in AD will cause GPL to increase from P_1 to P_2, bringing about **demand-pull inflation.**

Achieving potential growth and internal price stability

In the **long run**, foreign direct investments will increase the quantity and quality of the factors of production like capital and labour in the economy. As mentioned in Extract 9, it will help develop China's infrastructure, increase resource availability and productivity, and enhance workforce skills. Hence, the productive capacity of the economy will increase and LRAS will shift from $LRAS_1$ to $LRAS_2$. There is **potential growth** in the Chinese economy. There will be lesser pressure on the general price level and general price level will fall from P_2 to P_3 even though NY increases to Y_2, hence **achieving price stability.**

Achieving healthy balance of payments

In the **short run**, an increase in inflow of FDI into China will increase long-term capital inflow and improve the capital account of China. Ceteris paribus, her **balance of payment position will improve.** In the **long run**, the FDI will repatriate their profits back to the home country, resulting in the outflow of investment income which will worsen the current account. Ceteris paribus, her **balance of payment position will worsen.**

Overall, the short and long run impact of an increase in FDI on the macroeconomic performance of China is largely positive.

Mark Scheme

L2	Well-developed explanation of the impact in both the short and the long run of a rise in FDI on the macroeconomic performance of China with a well explained AD/AS diagram. *Maximum 5 marks for answers without a diagram*	4-6
L1	Under-developed explanation of the impact in both the short and the long run of a rise in FDI on the macroeconomic performance of China.	1-3

(f) Explain, and comment on, the statement in Extract 10 that "free trade is and has always been an important source of national income for a country". [8]

Define free trade

Free trade refers to the international trade between countries without protectionist measures like tariffs, quotas or other restrictions.

(i) Thesis: Explain the benefits of free trade and why it is an important source of national income for a country.

One of the main gains of free trade for a country is the **expanded export market**. With an increase in market size, a country can benefit from increasing specialization based on her comparative advantage. This will allow the country to reap the benefits of more efficient allocation of resources and economies of scale which will help lower their average costs of production. This would improve her export competitiveness in the international market. Assuming that the demand for her exports is price elastic due to the availability of substitutes, cheaper exports will bring about a more than proportionate increase in quantity demanded. The increase in export earnings will increase X-M ceteris paribus, and AD will increase, bringing about a multiple increase in NY via the multiplier process, thus achieving actual growth (Extract 10). The increase in production will also result in more jobs (Extract 10) and higher employment.

Local producers facing competition from foreign imports will be forced to improve the quality of their products and efficiency. It may stimulate greater research and development and innovation (Extract 10), and the more rapid adoption of new technology to increase productivity that lowers their cost of production. This would improve her export competitiveness in the international market.

Hence the benefits of free trade imply that it will always be an important source of NY for a country.

(ii) Anti-thesis: Free trade is not always an important source of NY for a country

However, for a country like Singapore which is small and open, she is especially **vulnerable to various external risks** due to free trade as she is more closely integrated with other countries. For example, a recession in her major trading partners will cause a fall in demand for Singapore's exports, thus reducing her export revenue. The fall in X-M will reduce her AD and thus NY by a multiple, causing Singapore to suffer from recession and cyclical unemployment. China also suffered from a slowdown in growth due to lacklustre external demand (Extract 6). Thus free trade may not always be an important source of NY to an economy, especially when the global economy is not doing well.

(iii) Protectionism can be a source of economic wealth for a country

In times of recession for example during the Europe debt crisis, there were calls for protectionism (Extract 10) to safeguard jobs as unemployment was rising. Trade barriers can **increase domestic production and employment**. A tariff for example will make imports more expensive and cause consumers to switch to domestic goods. Without protectionism, the fall in employment will reduce the quantitative standard of living. A rise in employment will increase NY and stimulate consumption due to the rise in purchasing power. A rise in consumption will increase AD and thus NY by a multiple due to the multiplier, bringing about actual growth.

However, this argument does not take into consideration the **loss of consumer welfare** caused by higher prices and lower qualities of the local products. Using protectionist measures would only **perpetuate domestic inefficiency** and lead to a misuse of resources.

<u>Conclusion</u>

To a large extent, free trade is and has been an important source of NY for a country as there are significant benefits that can be gained. Nonetheless, there are situations when free trade may not help increase the NY of the country like during a global recession or when countries resort to protectionism. The benefits and risks from free trade will also affect different countries differently. For example, countries that are small and open like Singapore will reap more benefits due to the increase in export markets but will also suffer a greater risk from a slowdown in trade as she is not able to rely on her domestic consumption to prop up AD unlike a big economy like China.

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Mark Scheme

L3	Well-developed two-sided explanation of whether free trade is and has always been an important source of national income for a country with strong use of case study evidence. **<u>Max 7m</u> for an answer without a well-justified evaluation.**	6-8
L2	Under-developed two-sided explanation of whether free trade is and has always been an important source of national income for a country with some use of case study evidence. OR **<u>Max 4m</u>** for a well-developed one-sided explanation of whether free trade is and has always been an important source of national income for a country.	3-5
L1	Smattering of valid points	1-2

<u>Suggested Answers for 2013 J2 H1 (8819) Economics</u>

3a Explain the terms 'public good' and 'demerit good', making clear in each case how they cause the market to fail. [10]

b It is generally recognised that casino gambling generates a level of externalities that is unacceptable. Thus, the Singapore government has imposed an entry levy of $100, which is valid for 24 consecutive hours starting from the time of first entry into the casino, on the citizens and permanent residents of Singapore.

Discuss the view that the imposition of an entry levy is the best method to tackle this problem in Singapore. [15]

Level	Knowledge, Application, Understanding, and Analysis	Marks
L3	Well-developed explanation of how the existence of a demerit good and a public good result in market failure, with the use of appropriate examples. Max 7 marks if there are no examples given.	7 – 10
L2	Undeveloped explanation of how the existence of a demerit good and a public good result in market failure. OR Max 5 marks for a one-sided explanation of how a demerit good or a public good results in market failure.	4 – 6
L1	For an answer that shows descriptive knowledge of how the existence of a demerit good or a public good results in market failure.	1 – 3
Level	**Knowledge, Application, Understanding, and Analysis**	**Marks**
L3	Well-developed explanation and evaluation of <u>3 policies</u> that the Singapore government can use to correct market failure in the usage of casino.	9 – 11
L2	Under-developed explanation of any <u>2-3 policies</u> that the Singapore government can use to correct market failure in the usage of casino and their limitations. Max 8 marks for a well-developed explanation and evaluation of only <u>2 policies</u> that the Singapore government can use to correct market failure in the usage of casino.	6 – 8
L1	For an answer that shows descriptive knowledge of how the government can intervene in the casino market to correct the market failure.	1 – 5
E2	For an evaluative assessment based on economic analysis, i.e.: one that considers the <u>extent to which government intervention</u> is able to tackle the market failure.	3 – 4
E1	For an unexplained assessment or one that is not supported by economic analysis.	1 – 2

Introduction
Market failure occurs when the unregulated market mechanism fails to allocate resources efficiently. Efficient allocation occurs when **allocative efficiency** is achieved. An efficient allocation of resources is achieved when resources cannot be reallocated in the economy to raise the welfare of one person without simultaneously lowering the welfare of another person. This takes place when **marginal social benefit (MSB) is equal to marginal social cost (MSC).** Government intervention is needed in the case of externalities and provision for public goods. With such intervention and provision, the government aims to achieve a socially optimal resource allocation, ensuring that society's welfare is maximised.

Define Public good
In the case of a public good, the market will fail due to the characteristics of **non-excludability and non-rivalry** in consumption. One example of a public good is the lighthouse.

Explain non-excludability using an example
Non-excludability means that once a good is provided, it is impossible to exclude anyone from consuming a good even if he/she does not pay for it. In the case of the lighthouse, one cannot prevent other ships which did not pay for the service (light) to be excluded from its consumption.

Explain how market failure occurs due to non-excludability
In the case of non-excludability in consumption, even the non-paying users cannot be excluded from consuming the good. Hence, there will be a problem of free riders. No one will want to pay for the good and therefore **demand is concealed and preferences are not revealed.**

Explain non-rivalry in consumption using an example
Non-rivalry in consumption means that even if the good is consumed by one person, it does not diminish the amount available for consumption by other, i.e. **collective consumption is possible**. For example, the consumption of the light from the lighthouse by one ship does not reduce the amount of light available for other ships in the same vicinity.

Explain how market failure occurs due to non-rivalry
Non-rivalry in consumption means that the supply of the public good is not depleted by an additional user and hence the marginal cost of providing the public good for an additional user is zero. Thus the **price charged for the good must also be zero**, based on the condition for allocative efficiency where **price=marginal cost**. Thus, it is **impossible to charge a market price for the public good**. The free market does not provide the public good even if there is demand in principle for these goods. Hence there is market failure as the **private market fails to allocate resources to produce public goods.** These goods have to be **provided by the government** and financed by taxes.

Explain how the consumption of demerit goods results in market failure
In the case when market fails due to the existence of externalities in a demerit good, the government often has to intervene to ensure a more efficient allocation of resources. A demerit good is a good that is deemed intrinsically undesirable by the government and generates negative externalities. Government intervention is needed to correct the problem of over-consumption of a demerit good

Negative externalities are cost to the third parties who are not directly involved in the consumption or production of the good. Such costs are not reflected in the price of the good. For example, in the case of gambling, the external cost is the lower productivity of the workforce that is caused by the addiction to gambling. This will result in a lower economic growth. There will also be social disintegration if addiction to gambling and bankruptcy rises, resulting in higher crime rates.

MPC refers to the money spent on gambling due to an additional unit of casino usage while MPB refers to the thrill and satisfaction Singaporeans derived from an additional unit of casino usage. The Singapore citizens who gamble in the casinos would only take into consideration their marginal private cost (MPC) and marginal private benefit (MPB). The marginal external cost of using the casino is not taken into consideration. The true costs to society for the last unit of casino usage is reflected by marginal social cost (MSC), which is the addition of marginal private cost and external costs. MSC= MPC+ MEC

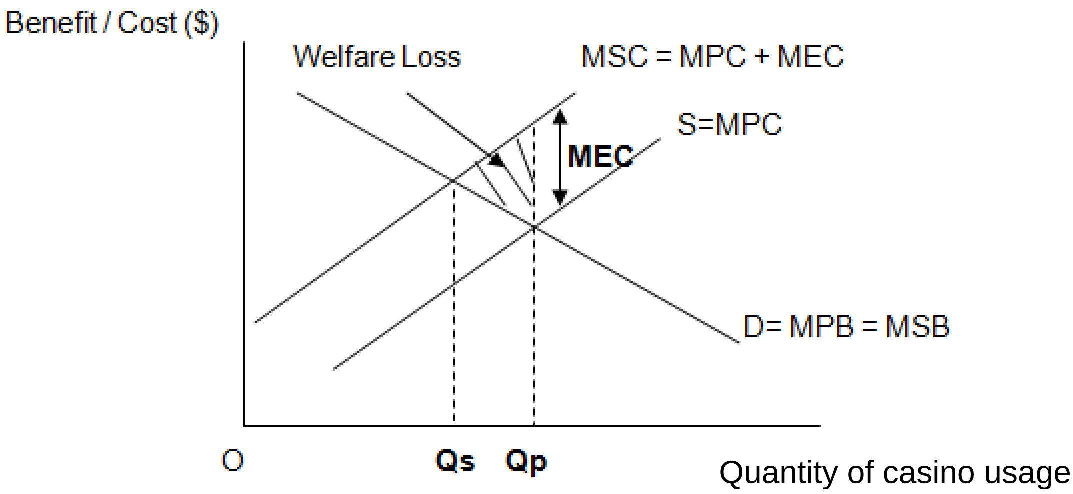


Figure 1: Market Failure due to Negative Externalities

Referring to figure 1, this results in a divergence of marginal social cost and marginal private cost. Assuming that MPB = MSB, when left to the free market, consumers pursuing their self-interest would use the casinos until OQ_p where marginal private benefit (MPB) equals marginal private cost (MPC). However, the socially efficient level is at OQ_s where marginal social benefit (MSB) equals marginal social cost (MSC). Since Qp is **greater** than Qs, it means that the price mechanism on its own cannot achieve an optimal allocation of resources. There is **overusage** of the casino by Singaporeans.

Between Qp and Qs, the social cost of an additional unit of casino usage is higher than the social benefits gain, resulting in welfare loss shown by the shaded area. Thus, the government would need to intervene in the operation of the casinos.

<u>**Conclusion**</u>
Market failure occurs in the case of public and demerit goods. Hence, government intervention is needed in both cases to bring about an efficient allocation of resources.

b) Discuss the view that the imposition of an entry levy is the best method to tackle this problem in Singapore [15]

The Singapore government has started the operation of two integrated resorts, Resort World Sentosa and Marina Bay Sands in Singapore in 2010. These integrated resorts consist of casinos and other attractions. This is seen as a strategic project to boost the Singapore tourism industry which has been facing competition from the neighbouring countries in Asia such as Thailand, Hong Kong and Malaysia. Therefore, the government has legalised casino in Singapore.

However, despite the economic benefits, there are unacceptable externalities, which are the negative externalities that arise from casino gambling as mentioned in part (a). Thus, the government needs to intervene by imposing legislations and coming up with awareness campaigns to safeguard against addiction to gambling among Singaporeans

<u>**Policy 1: Entry Levy on Casino Patrons**</u>
The first policy is to impose an entry levy of S$100 for every 24 hours spent in the casino to restrict the use of casinos to only citizens who are willing and able to pay for the tax. This entry levy is similar to a tax. The tax should be equal to **MEC at Qs**. By imposing this entry levy, the marginal private cost of using the casino will increase. As such, it is **more expensive to enter** the casino. As seen in Figure 1, **the MPC curve will shift to the left to MSC**, reducing **overconsumption of casino services**. This will reduce the usage of casinos from Qp to the socially optimal level at Qs.

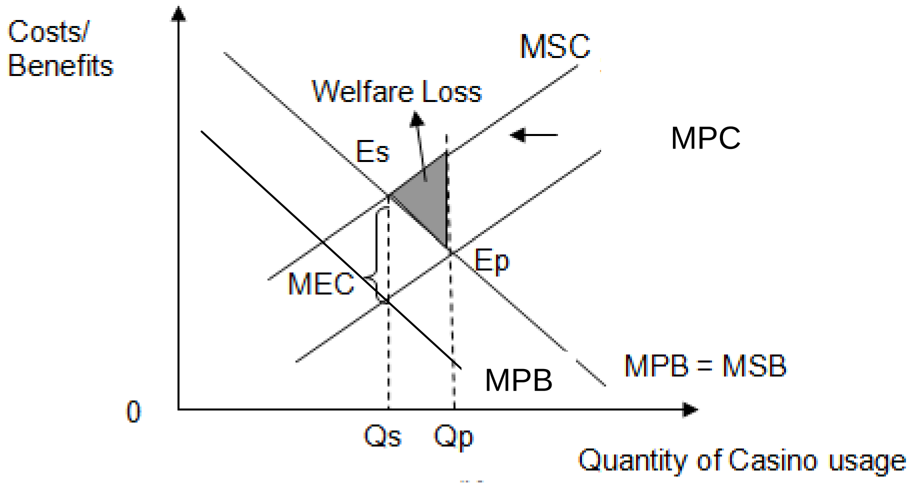


Figure 1: Market Failure due to Negative Externalities

The benefit of this entry levy is that it forces the consumers to **internalize the negative externalities**. Consumers will take into account the entire cost of their actions. Furthermore, the entry levies collected as tax revenue can be used to run programmes to assist the gamblers to quite gambling.

Limitations of entry levy

However, it is **difficult to calculate the exact amount of MEC** as there are tangible and intangible costs. Some of the external costs, such as social disintegration are difficult to quantify in monetary terms. Hence it is difficult to calculate the exact amount of entry levy to charge to reduce the negative externalities. On one hand, too low an entry levy will be ineffective in curbing overconsumption. On the other hand, too high an entry levy will still result in an inefficient allocation of resources as the society's welfare is not maximised.

Another limitation is that the entry levy is imposed only on Singaporeans and Permanent residents. However, the foreign workers are also using the casino. As a result, there could be **lower productivity** in the workforce if foreign workers continue to use the casino excessively.

Furthermore, there is **high monitoring and enforcement cost** involved to collect the $100 entry levy as well as to ensure that the users do not over-stay without a valid entry levy in the casinos. For example, surveillance tapes would have to be checked to catch offenders who enter or exit without the proper identification.

Policy 2: Casino Exclusions on Casino Patrons

There are three types of casino exclusion. First, self-exclusion means that the casino patrons can exclude themselves from entering the casino. The second type is the family exclusion, whereby family members can exclude their relatives with potential problem of gambling. The third type of exclusion will be for those who are legally bankrupt. Such exclusions will deny individuals entry to the casinos and minimise the risk of problem gambling from the group that is most likely to be in danger. This form of legisalation will **reduce the over-usage of the casino and reduce the welfare loss.**

The advantage of the exclusion is that it is **easy to implement**. In the event of a violation of the law, offenders will face the necessary penalties.

Limitations of Casino Exclusions

However, it is **administrative costly** to implement the scheme as there is a need to check the identities and financial status of each casino patron. Furthermore, the target group is rather small and is also dependent on whether the individuals or family members choose to surface and include their names on the exclusion list, otherwise the law will be ineffective in correcting the market failure.

Policy 3: Education for Singapore Citizens

The government can also help to promote public awareness on problem gambling to reduce the demand for casino entries. In Singapore, the National Council on Problem Gambling is set up to educate and disseminate information to Singaporeans so as to increase the awareness on the impact of problem gambling. Such information is disseminated through drama serials, advertisements and workshops conducted by various welfare organisations. This will **reduce the imperfect information** on gambling as Singaporeans have a greater sense of awareness about the external cost of gambling. As such, **the MPB curve will shift to the left**, correcting the market failure as consumption reduces from Qp to **the socially optimal level at Qs**.

Limitations of Education

However, the effectiveness of the policy depends on the **receptiveness of the citizens** towards the usage of casinos. The public can be aware and educated, but unwilling to exercise self-restraint towards casino usage. Secondly, such a policy **takes time** and is deemed as a long term approach that will only correct the market failure in the long run. .

Furthermore, there is **opportunity cost** incurred in the funds used to run these programmes. The tax revenue used to fund these campaigns can be used in other important sectors such as education and healthcare in Singapore.

Conclusion

The entry levy is one of the most direct and effective methods to help reduce the over-usage of casino and hence improve on the allocation of society's resources as it forces the consumers to internalise the external cost. However, it **is not the best method** to tackle the problem of over-usage of casino in Singapore as there are limitations to it. Therefore, there is a need for a combination of policies to tackle the problem

Evaluation 1: Combination of policies

In the short run, the imposition of entry levy and casino exclusions should be implemented to reduce the over-usage of casino. In the long run, there is a need to reduce the imperfect information and educate the public to correct market failure. As such, these policies need to work in tandem with one another so as to achieve an efficient allocation of resources.

Evaluation 2: Government failure

Despite the government's attempt to correct the market failure, there may also be **government failure** in terms of bureaucracy, efficiency and lack of public support for government policies. Although the socially optimal level of output may not be attained due to the limitations of the measures, **government intervention usually ensures a better allocation of resources and results in an output level that is closer to the socially optimal level.**

Question 4

Higher oil prices in 2011 have led to inflation, a slowdown in Singapore's economic growth and a weakening of the currency.

a Explain how higher oil prices led to the above problems in Singapore. [10]

b Discuss the measures that the Singapore government can adopt to solve the macroeconomic problems mentioned. [15]

Level	Knowledge, Application Understanding and Analysis	Marks
L3	Well-developed explanation of how higher oil prices result in all the 3 problems. Max 8 marks with no application to the Singapore economy.	7-10
L2	Under-developed explanation of how higher oil prices result in all the 3 problems.	4-6
L1	Smattering of valid points.	1-3

Level	Knowledge, Application Understanding and Analysis	Marks
L3	Well-developed explanation of both demand management and supply-side policies (3 policies) that the Singapore government can adopt to solve the 3 macroeconomic problems and their limitations/effectiveness.	9-11
L2	Under-developed explanation of both demand management and supply-side policies that the Singapore government can adopt to solve the 3 macroeconomic problems and their limitations/effectiveness. Max 6m for a well-developed one-sided explanation on either the demand management (affect AD) or supply-side policies (affect SRAS and/or LRAS) that the Singapore government can adopt to solve the 3 macroeconomic problems and their limitations/effectiveness.	6-8
L1	Descriptive knowledge on the policies that the Singapore government can adopt to solve the 3 macroeconomic problems.	1-5
E2	Reasoned assessment on the effectiveness of using both demand management and supply-side policies to solve the 3 macroeconomic problems in Singapore. (E.g. combination of policies and the reliance on oil as a main factor input)	3-4
E1	Unreasoned assessment on the effectiveness of using both demand management and supply-side policies to solve the 3 macroeconomic problems in Singapore.	1-2

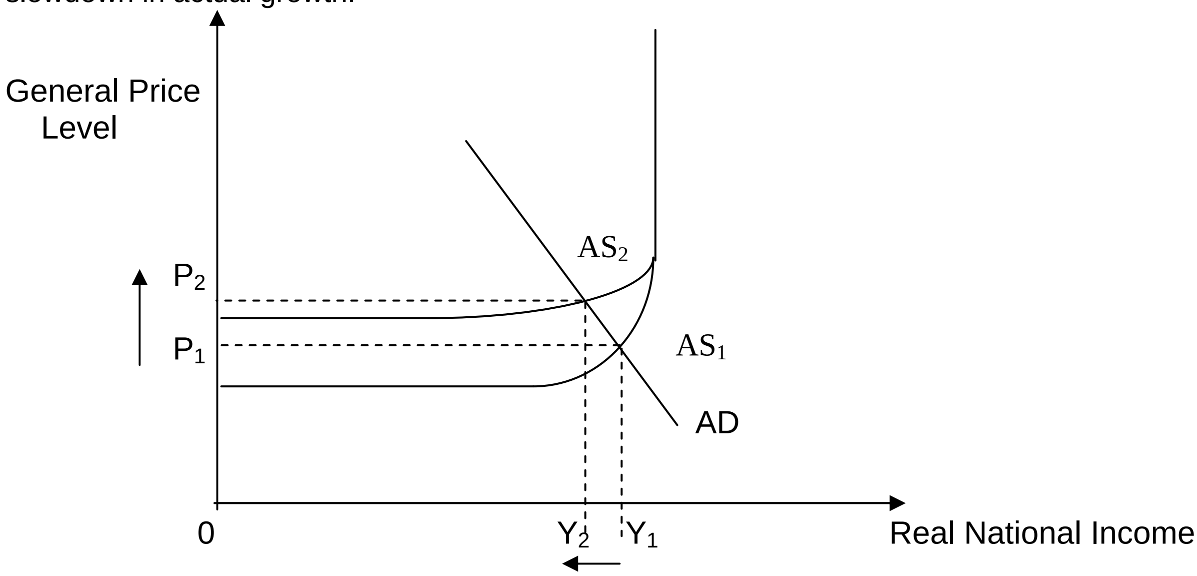
a) Explain how higher oil prices led to the above problems in Singapore. [10]

Introduction

Singapore is a small and open economy that lacks natural resources. Hence, she is highly reliant on imports for raw materials and basic necessities. External shocks such as rising prices of imported factor inputs like crude oil can lead to cost-push inflation, weakening of the Singapore Dollar (SGD) and a slowdown in economic growth in Singapore.

Explain how rising crude oil prices result in Cost-Push Inflation

Crude oil is an important factor input for production. The rise in global oil prices, which is largely due to the increase in demand from the booming Chinese economy, has resulted in higher energy and transportation cost in Singapore. This will result in an increase in cost of production. This will hurt the firms' profit margins and they will have less incentive to supply. They will in turn pass on these increased costs to consumers, causing the short run aggregate supply (AS) to decrease and shift up and to the left from AS_1 to AS_2 as illustrated in Figure 1 below. The general price level (GPL) rises from $0P_1$ to $0P_2$, resulting in cost-push inflation. NY falls from Y_1 to Y_2, leading to a slowdown in actual growth.



Explain how rising crude oil prices affect Singapore's Economic Growth

When inflation is due to escalating costs of production, the reduction in profit margins will also discourage domestic and foreign investors from further investments leading to a fall in AD and in turn a multiple fall in the national income via the multiplier effect. With a fall in FDI for example, there will be less capital stock coming into the economy. This will result in a lower productive capacity and hence hinder potential growth. As such, this is detrimental to the economy as it will impede potential growth in addition to the fall in actual growth due to the fall in I.

Explain how rising crude oil prices result in the weakening of SGD

As the demand for oil is price inelastic as it is a necessity, a rise in the price of imported oil will lead to a less than proportionate decrease in quantity demanded for imports. Therefore, there will be a rise in import expenditure. As expenditure on imported oil is a significant component of our current account due to our heavy reliance on oil, the supply of currency will increase by a significant amount as more SGD has to be sold to get foreign currencies to purchase the imports. This will result in a depreciation of the currency.

As a result of cost-push inflation, assuming that her inflation rate is higher than her trading partners, Singapore's exports will be more expensive compared to foreign goods. Assuming that the demand for her exports is price elastic due to the availability and closeness of substitutes, there will be a more than proportionate fall in the quantity demanded for exports. This will result in a fall in export earnings. On the other hand, imports appear relatively cheaper compared to locally produced goods. Import expenditure will rise as demand for imports increases due to the relatively cheaper imports. The fall in export earnings and rise in import expenditure will lead to a fall in net exports. Thus, there will be a fall in AD and NY will also fall by a multiplied amount due to the multiplier effect. Actual growth is slowed down.

In the foreign exchange market, the demand for SGD falls due to the fall in export earnings as foreigners would need to convert less of their currencies to SGD. On the other hand, the supply of SGD increases as more of SGD has to be sold to get more foreign currencies to pay for the imported goods. With the fall in the demand for SGD and an increase in the supply of SGD, SGD will depreciate.

Conclusion

In conclusion, higher oil prices may lead to adverse consequences, such as cost-push inflation, slow growth and depreciation of the SGD. However, the extent of the above economic problems faced by the Singapore economy depends on the extent of the crude oil price increase. If this is substantial, the impact can be great. As such, there is a need for the government to implement policies to solve the macroeconomic problems.

b) Discuss the measures that the Singapore government can adopt to solve the macroeconomic problems mentioned. [15]

The macroeconomic problems faced by Singapore as a result of higher oil prices are **cost-push inflation**, **weakening of SGD** and a **slowdown in economic growth.** These problems can be solved through demand-management and supply-side policies.

Explain how managing the Exchange Rate can solve the problems

As Singapore lacks natural resources, factor inputs and necessities have to be imported. Since the source of the cost-push inflation is due to the rising price of imported oil, it is appropriate to use the exchange rate. Singapore has always relied on her exchange rate to fight imported inflation as she has limited monetary tools.

As such, Singapore can adopt a gradual and modest **appreciation** of the SGD under a regime of the managed float system. Under the managed float, the demand for and supply of SGD determine the equilibrium ER. The ER is allowed to fluctuate around the equilibrium rate within a "spread" which lies between the upper support limit and the lower support limit. The government would occasionally intervene to stabilise the rate around a desired level.

By allowing the SGD to appreciate gradually, imported commodities like oil become cheaper in terms of local currency since a lesser amount of SGD is needed to exchange for the same amount of foreign currencies, thus reducing imported inflation. As prices of the imported factor inputs decrease, cost of production will fall. This will result in the SRAS curve shifting down and to the right from $SRAS_2$ to $SRAS_1$, as seen in Figure 1, hence helping to curb cost-push inflation and maintain price stability. Output will also increase from Y_2 to Y_1, promoting growth.

Limitations of managing the Exchange Rate

1. Depletion of foreign reserves

Intervention is only possible if there are adequate foreign reserves to intervene in the forex market as frequent buying to prop up the value of SGD may deplete the foreign reserves. Thus, such a measure is only feasible when it is supported by strong economic fundamentals that lead to an increase in the demand for the local currency; otherwise intervention to prop up the local currency is not sustainable in the long run.

2. Extent of intervention

Managing the exchange rate has some challenges. The government needs to know when to intervene, what exchange rate they should aim to maintain, and how persistently they should try to maintain that rate. This would require the accurate analysis of the level of world inflation and likely movements of other exchange rates. However, they may not have up-to-the-minute reliable information about the state of the global economy and the various interactions in the forex market. Moreover, too high an appreciation would result in more expensive exports and decrease our export competitiveness.

Explain how Fiscal Policy works to stimulate growth

Fiscal policy refers to the deliberate attempt by the government to adjust macroeconomic variables by adjusting government expenditure and tax rates. In solving slow growth, an expansionary fiscal policy can be used. This involves increasing government expenditure on public projects such as building new expressways to increase AD. The Singapore government can also decrease personal income and corporate tax. A decrease in personal income tax helps to increase the disposable income and purchasing power, causing consumers to spend more. A decrease in corporate tax increases after-tax profit, hence encouraging firms to invest. The increase in G, C and I will increase AD from AD_1 to AD_2 and thus increase NY by multiple times from OY_0 to OY_1 as seen in Figure 2, solving the slowdown in growth.

Limitations of EFP

1. Size of multiplier

However, the effectiveness of EFP in stimulating growth depends on the size of the multiplier (k). An EFP or pump-priming the Singapore economy will be ineffective to stimulate growth and employment due to Singapore's small fiscal multiplier effect. The final increase in NY and hence the increase in production and employment is limited. Singapore's fiscal multiplier effect tends to be small due to a high marginal propensity to save (MPS) arising from her compulsory savings scheme, the Central Provident Fund (CPF), and a high mpm due to Singapore's lack of natural resources and her consequent import-dependence for both finished goods and raw materials.

1. Responsiveness of tax cuts

Furthermore, the response of households and firms to tax cuts is unpredictable and corporate tax rates in many economies are already very competitive to attract investors. Investment decisions also depend on other crucial factors such as productivity of labour and the infrastructure of the economy.

2. Policy conflicts

While using an expansionary fiscal policy can lead to an increase in AD and NY and hence stimulate growth, it will worsen the problem of demand-pull inflation especially when Singapore is at or near full employment. As seen in figure 2, the rise in AD will cause the general price level to increase from P_0 to P_1. Thus, fiscal policy alone cannot overcome inflation and slow growth.

Explain how supply-side policies can achieve potential growth and long-term price stability

Hence to bring about **potential growth and long-term price stability**, it is more appropriate to use supply-side policies.

The Singapore government has placed much emphasis on interventionist supply-side policies as seen from the high amount of spending on the education sector throughout the years. In order to increase the pool of highly skilled workers to be equipped for a knowledge based economy, a fourth university has been set up so that 30% of each cohort of students can get into publicly funded universities by 2015. In addition, there is continual investment on retraining of workers. S$2.5 billion is set aside in Budget 2010 for training and skills upgrading. This includes programmes such as Workforce Skills Qualification (WSQ). The Workfare Training Support (WTS) Scheme was also introduced to encourage low-wage workers to upgrade their skills through training, so that they can improve their employability and stay in the workforce for a longer period of time. The WTS Scheme was extended to reach a wider range of workers as announced in Budget 2013. Such policies would be able to increase efficiency and productivity resulting in a reduction of cost of production. At the same time, the productive capacity of the economy can be increased.

In figure 2, an increase in the quality of factors of production like labour would shift the long run aggregate supply curve of an economy rightwards, from AS_1 to AS_2. Besides increasing the long term growth of the economy and increasing NY from Y_1 to Y_2, this has the effect of reducing the general price level from P_1 to P_2, hence achieving long-term price stability.

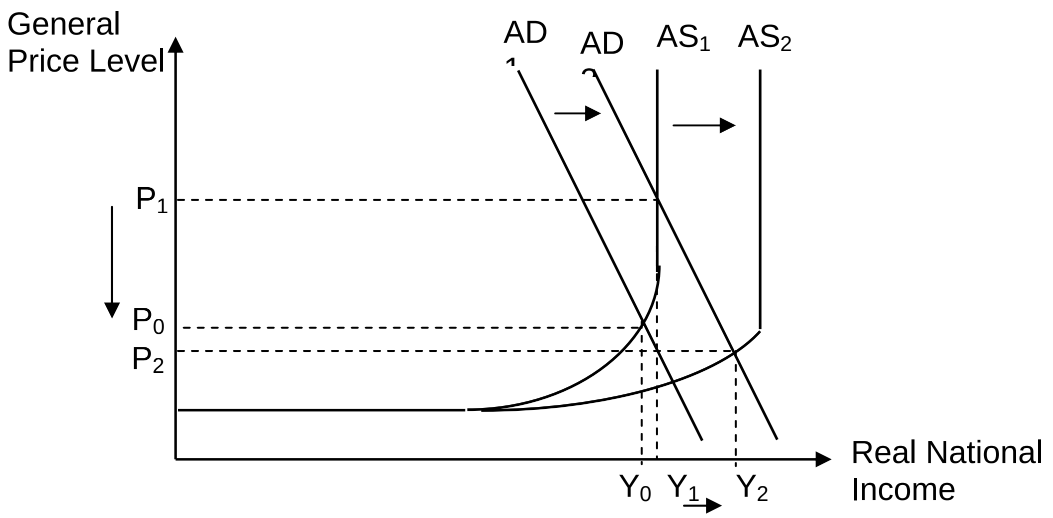


Figure 2: Effects of Supply side policies

The sustained non-inflationary economic growth in Singapore is very attractive to FDI who seek to invest in a country that offers them a low cost and positive investment climate. The inflow of long term capital will in turn create a strong demand for SGD which will prop up the value of SGD in the foreign exchange market.

<u>Limitations of using Supply-side Policy</u>
1. Receptiveness of the Workforce to Skills Retraining (Attitude & Ability Problem)
However, the success of skills retraining or knowledge upgrading depends on the level of education, age and personal inclination. The less educated or older workers may not have the ability to learn new skills or they may not be receptive towards the need for re-training. Some may just be resistant to the idea of a job change. A change in attitude is required for supply-side policies to be effective.

2. Lack of Funding for Skills Retraining (Funding Problem)
The re-training of skills and upgrading of knowledge is costly, which gives rise to funding problems. Even as the training of workers yields considerable external benefits, employers are reluctant to foot the bills because of the fear of losing workers after retraining or upgrading when workers job hop. The situation is worse for the unemployed who cannot afford the fees.

3. Long term measure
Although the Singapore Government has been inclined towards supply-side policies, they are long-term measures whose non-inflationary effects can only be felt in the long run. Supply-side measures are not a short-term strategy to solve short term fluctuations in economic activity.

Conclusion:
The Singapore government should adopt a combination of both demand management and supply-side policies to solve inflation, slow economic growth and a weakening of SGD as each policy has its limitations.

Evaluation 1: Combination of policies
For example, a strengthening of the exchange rate and an expansionary fiscal policy will help to stimulate growth and prevent the weakening of SGD in the short run. However, due to the policy

conflicts, there is a need to adopt supply-side policy. Supply-side policies can also bring about potential growth while keeping inflation at bay in the long run.

Evaluation 2: Root Cause
Most importantly the root cause of the problem must be addressed, which in this context is the higher oil prices. Since Singapore is heavily dependent on imported oil, it is likely that the higher oil prices can have a large impact on the economy unless producers can be more efficient in their usage of oil or even switch to alternative energy sources. In the short run, the appreciation of the SGD can help to mitigate the rise in oil prices. However, in the long run, the government might want to invest in R&D to explore alternative energy sources, such as natural gas, to reduce Singapore's dependence on crude oil and vulnerability to external shocks.