



**JURONG JUNIOR COLLEGE**

**2016 JC2 ECONOMICS 8819 (H1)**

**PRELIMINARY EXAMINATION**

**ANSWER BOOKLET**

## **Suggested Answers for 2016 J2 H1 (8819) Economics Prelim Section A Case Study**

### **Question 1**

**a) With reference to Table 1, identify the main features of the change in retail sales. [2]**

- All experienced a fall in retail sales with the exception of department stores, motor vehicles and medical goods/toiletries. [1]
- The biggest contributor to the fall in retail sales is from petrol station service. [1]
- OR the biggest contributor to the increase in retail sales is from motor vehicles. [1]

**b) Using evidences in Extract 1, explain two demand factors that led to the fall in the retail sales volume of Singapore's prime shopping district. [4]**

A relatively strong Singapore dollar, deters tourists from choosing Singapore as their holiday destination because it made shopping in Singapore relatively more expensive than compared to other holiday destinations. This led to a fall in visitor arrivals which hurt the retail climate in Singapore, especially the prime shopping district which is reliant on tourism.

The growth of the retail scene in regional countries such as Bangkok, South Korea and Taiwan drew Singaporean shoppers away. There is a change in taste and preferences of Singaporeans towards these alternatives as they more affordable and distinctive in culture.

Both the above factors lead to a fall in demand of retail sales of Singapore's prime shopping district and hence a fall its retail sales volume.

2 marks for each demand factors.

**c) Comment on the expected changes in rent by end 2016. [4]**

As explained in part b, retailers faced challenging times as they suffered from a fall in retail sales volume, c.p, which affected their profitability. This led to shutting down of many retailers as evident by the lower occupancy rate (Extract 1). The fall in derived demand for retail space lead to a fall in rent.

As evident in Extract 1, new projects such as OUE Downtown Gallery, Tanjong Pagar Centre and Duo Galleria, slated to be completed in 2016 will increase the overall supply of retail spaces in Singapore.

Extract 1 also mention that rents were pressured by a relatively large impending supply. Hence, it is likely that the increase in supply is more than the fall in demand leading to an expected fall in rent by end 2016.

3 marks - demand and supply factors / 1 mark – synthesis using case study evidence  
Or 2 marks with demand factor and 2 marks for application of PES (Eg:  $PES > 1$ , spare capacity)

**d) Discuss the usefulness of PED to a retailer such as Tiffany & Co who aims to maximise profits. [6]**

The knowledge of PED is useful to a retailer such as Tiffany & Co in formulating its pricing strategy to a small extent. Tiffany & Co. is a maker of fine jewellery and has been at the forefront of the world's greatest design movements. Its PED is likely to be price inelastic given its strong brand positioning in the market which makes their target audience less sensitive to price changes. Thus, when the demand for its jewellery is price inelastic, an increase in the price of their product will lead to a less than proportionate fall in quantity demanded. The gain

in total revenue due to the rise in price is greater than the loss in total revenue due to the fall in quantity demanded. This will lead to an increase in total revenue, c.p and hence maximise its profits.

However, a retailer can also adopt non-pricing strategy and look into ways to manage their operating costs in order to maximise profits. As evident in Extract 2, Tiffany & Co. is investing in providing highly personalised services to instil a sense of exclusivity for their esteemed customers. Their newly opened street-facing outlet, a first in Singapore, boasts a private viewing space with luxuriously-fitted lounge areas. This strategy will result in an increase in demand for their product and hence leading to an increase in total revenue.

Nonetheless, this investment will definitely be hefty and will add on to their operating costs in terms of rental, renovation and wages. However, so long as the increase in returns from their adopted strategies exceeds the increase in operating cost, Tiffany & Co. will be able to maximise their profits.

In conclusion, the knowledge of PED is useful to Tiffany & Co. but non-pricing and cost management strategies are also very important. This is because PED data may be inaccurate or may change over time. It may be affected by many other factors in reality, such as counter strategies adopted by competitors and economic conditions that will affect the profitability of a retailer. Hence, the reliance on PED to formulate the pricing strategy may be limited in its effectiveness.

<b>L2</b>	Developed explanation of pricing, non-pricing and cost management strategies, with strong use of case study evidence and a reasoned assessment. <u>Maximum 4 marks</u> for answers without reference to case study evidence or a reasoned assessment (If $PED > 1$ , accept as theoretical answers)	4-6
<b>L1</b>	For an answer that show descriptive knowledge	1-3

**e) Explain the economic objectives of the government in promoting research and development. [6]**

The microeconomic objective of the government is to attain a more efficient allocation of resources and the macroeconomic objective is to mainly achieve potential growth for the economy.

Research and development (R&D) brings about positive externalities such as availability of research knowledge when made open thus allowing other firms to benefit from the research knowledge. In addition, the technological prowess and leadership will provide the country with the first mover advantage in strategic industries (Extract 2).

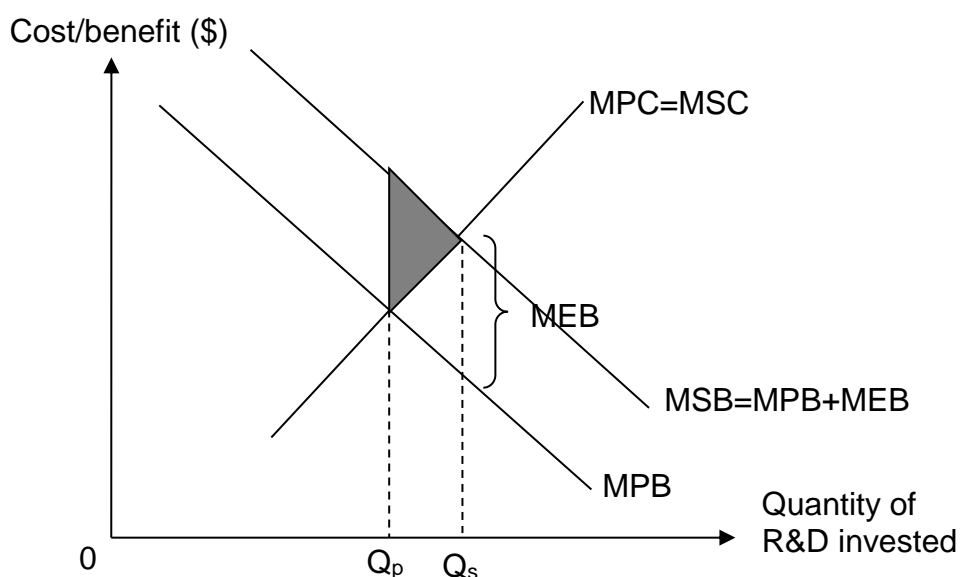
The government's investment in R&D will lead to technological advancement and hence brings about greater productivity and efficiency. This will increase the productive capacity of the economy and allow the country to produce beyond its full employment level. This can be represented by an outward shift of the PPC or an increase in LRAS. Hence, the government met its objective of potential growth. Assuming the state of economy being at full employment level, inflation can be eased at the same time.

As such, R&D will be underinvested if left to the free market.

Marginal private benefit is the additional benefit gained in terms of additional sale revenue gained by the firms from the last unit of R&D invested. Marginal private cost is the additional cost of investing in R&D. The figure below illustrates the situation where the investment in

R&D generates positive externality. Marginal social benefit (MSB) is the additional social benefit from the last unit of R&D invested,  $MSB = MPB + MEB$  where MEB is the marginal external benefit.

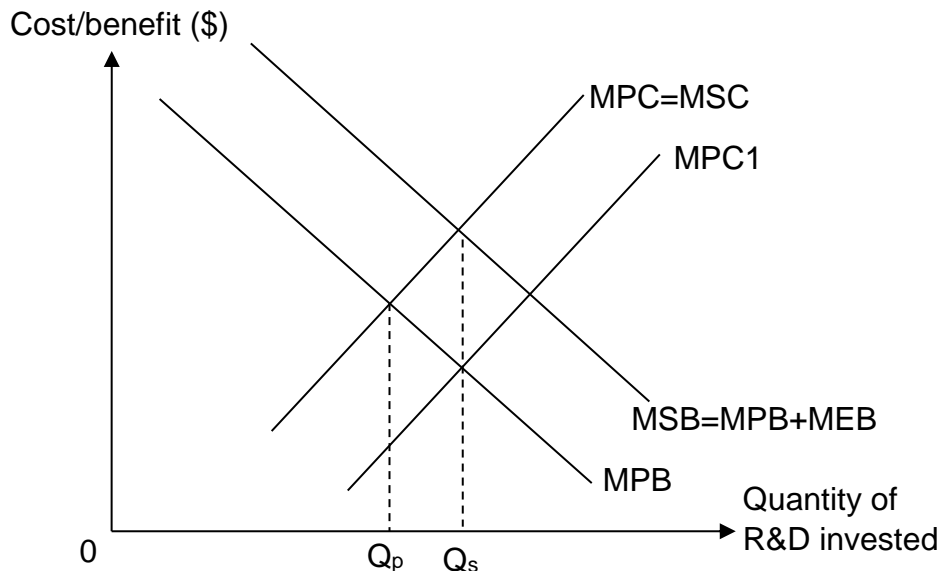
Due to the presence of positive externalities, which is shown by the marginal external benefit (MEB) at a particular level of output, marginal social benefit (MSB) will be greater than marginal private benefit (MPB), i.e.  $MSB > MPB$ . There is a divergence of MPB and MSB. This means that the benefits to society include not just the benefits to firms but also the benefits to other forms or the economy enjoying from the positive spillover effects, shown as MEB at a particular level of output. Assuming that  $MPC = MSC$ . Since the firms will only consider their private costs and benefits, while ignoring external benefits to third parties, they will invest in R&D at output level  $Q_p$  where  $MPB = MPC$ . However, the socially optimal level of output occurs at  $Q_s$  where  $MSC = MSB$ . Since  $Q_s$  is greater than  $Q_p$ , it means that the price mechanism on its own cannot achieve an efficient allocation of resources. There is underinvestment in R&D. Between  $Q_p$  and  $Q_s$ , the social benefits of an additional unit of R&D invested is higher than the social costs, resulting in welfare loss equivalent to the shaded area. Hence market fails to achieve an efficient allocation of resources and government intervention is required.



4 marks for explanation of microeconomic objective (Mark as a whole for an explanation of positive externalities that result in market failure. Max 3m if no diagram).  
2 marks for explanation of macroeconomic objective.

- f) **Extract 3 states that “market forces will lead to underinvestment in R&D from society’s perspective”. Discuss the effectiveness of policies undertaken by the US government to achieve allocative efficiency in the R&D market. [8]**

The US government support scientific and technical research through the provision of grants and offering R&D tax credit that is equivalent to MEB at  $Q_s$ . These measures will help firms enjoy a lower cost of investing in R&D which will help lower their MPC from MPC to  $MPC_1$ . Hence, increasing the investment of R&D from  $Q_p$  to  $Q_s$ .



In addition, the US government also supplement production by running their own research facilities as evident in Extract 4, which will increase investment on R&D in the market as a whole to achieve  $Q_s$ . These facilities focused on non-military applications such as R&D in the healthcare sector.

However, the challenges would be for the government to accurately estimate the amount of grants and R&D tax credit. Further, these policies requires huge funding and will be a burden to the US government's fiscal health. With the US government suffering from a budget deficit, they might have to bear the increase of debt burden in order to finance the expenditure in the R&D sector.

Another important policy would be to groom local talents to highly skilled scientists and researchers through providing appropriate courses in tertiary education or industrial attachment programmes for experiential learning. Hence, the R&D sector will not face a shortage of talent. However, it may take a long time for the impact of this policy to be fully felt in the market or the talent pool may be limited especially for the more advance fields. A faster way would be to offer job placements for foreign talents. The interaction and cooperation between the local and foreign talents can also lead to bigger gains in terms of exchange of ideas. Hence, the R&D sector will not face a shortage of talent which may be the root cause behind the underinvestment of R&D in the free market. With a bigger talent pool, it may also lower the wage pressure in this sector which will be beneficial to firms in terms of lower costs. Hence, firms investing in R&D will experience a fall in MPC from MPC to MPC1.

Another policy would be for the US government to strengthen its intellectual property protection such as extending and expanding patent rights (Extract 4). In this way, firms will have greater incentive to invest in R&D as their economic benefits from their R&D can be retained within the firm for a longer time, as shown by an increase in their MPB to MSB. However, stricter restrictions to the usage of research findings or discoveries will impede the sharing of information and hence inhibit both further R&D of valuable commercial applications as mentioned in Extract 4.

In conclusion, funding R&D activity and ensuring a sufficient supply of workforce with science and engineering skills is important for promoting innovation. Other key policy include the definition and enforcement of intellectual property rights. A combination of these policies are needed to address the root causes of underinvestment in R&D and also to provide a long term solution to US's existing problem. Most importantly, the US government needs to

continue to influence and inculcate a continued desire at the firms' part to promote innovative activity.

<b>L3</b>	Well-developed explanation of policies undertaken by UK to achieve allocative efficiency in the R&D market and its limitations, with strong use of case study evidence and a reasoned assessment.	6-8
<b>L2</b>	Under-developed explanation of policies undertaken by UK to achieve allocative efficiency in the R&D market and its limitations. <u>Maximum 4 marks</u> for answers which explain either how policy works or limitations of policies. Or <u>Maximum 4 marks</u> for answers without reference to case study evidence	3-5
<b>L1</b>	For an answer that show descriptive knowledge	1-2

## **Question 2**

- (a) With reference to Figure 1, compare the change in consumer prices of the Euro area with that of Britain between mid-2011 and January 2015. [2]

Consumer prices of the Euro area increased at a decreasing rate and fell in January 2015 whereas the consumer prices of Britain increased at a decreasing rate throughout the stated period [2].

- (b) From Extract 5, explain how you would decide whether governments are justified in imposing anti-dumping duties on the cheap Chinese goods. [4]

If the cheap Chinese goods are sold below its marginal cost of production in other countries, dumping occurs and governments are justified to impose anti-dumping duties [2]. On the other hand, if the cheap Chinese goods are due to overproduction as the Chinese economy slows down, and the low prices are not below the marginal cost of production, it is not dumping and governments are not justified in imposing anti-dumping duties [2].

- (c) Explain the effect on the consumers and producers of the economy that imposes tariff. [2]

Consumers have to pay a higher price and the domestic consumption falls, resulting in a decrease in consumer welfare [1]. The higher price will also lead to higher revenue to producers so domestic production increases [1].

- (d) State **two** possible reasons why wages do not fall when prices are falling in an economy. [2]

- ❖ Demand for workers are still increasing in the labour market as firms continue to employ workers.
- ❖ Supply of workers falls due to tighter immigration control.
- ❖ Wages are on contractual agreement over a period of time.

Any 2 of the above or other valid reasons.

- (e) With the help of a diagram, explain the causes of deflation in various economies. [4]

- ❖ As indicated in Extract 6, the reduction in the price of crude oil reduces the cost of production as crude oil is a main source of energy. This will increase the profit margin of firms and increase the aggregate supply in the short run. Given aggregate demand curve  $AD_1$ , the AS curve shifts downwards from  $AS_1$  to  $AS_2$  as shown in figure 1 below, leading to a fall in the general price level from  $OP_1$  to  $OP_2$ .

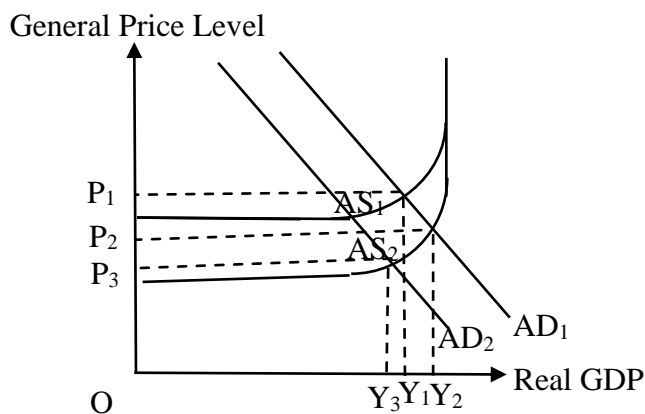


Figure 1

- ❖ On the other hand, the debt problem in the euro zone and austerity measures implemented (Extract 6) reduce government spending. In addition, the increase in tax rates and the lack of confidence reduce consumption and investment. Aggregate demand decreases, shifting AD curve to the left from  $AD_1$  to  $AD_2$ , leading to a further fall in the general price level from  $OP_2$  to  $OP_3$ .

3 M for explanation and 1 M for appropriate diagram.

- (f) Assess whether negative inflation is undesirable to an economy. [8]

Negative inflation may be caused by a reduction in the cost of production or a decrease in aggregate demand. Falling aggregate demand that leads to negative inflation and deflation is undesirable to an economy.

### **Negative inflation is undesirable to an economy**

#### **Reduced employment and output**

Extract 6 indicates that during deflation, i.e., a sustained fall in the general price level, consumers tend to postpone any purchases as they expect further price decreases. Aggregate demand decreases, pushing the general price level even lower. As prices and output fall, profit margins of firms are squeezed, forcing them to reduce costs such as wages and retrench workers. If the situation worsens, it can lead to firms' closure which worsens unemployment and further dampens aggregate demand, causing a downward spiral of the general price level. This will be undesirable to an economy.

#### **High real interest rate**

With general price level falling, real interest rate rises even if nominal interest rate remains the same. In addition, households and firms will find the real burden of financing mortgage payments increasing as they face falling prices of assets such as houses and commercial property. They also find that their bank loans now become higher than the prevailing value of their property, making it impossible to clear their debts even if they sell off their property.

#### **Defaulting of bank loans**

Negative inflation that leads further to a deflation would also cause property prices to fall. Since the real value of outstanding debt increases, some households and firms cannot service their loans, resulting in non-performing loans (Extract 6). If many households and firms default on their banking loans, this can lead to a banking crisis and will affect economic growth adversely.

### **Negative inflation may not be undesirable to an economy**

#### **Effect on BOP**

Negative inflation caused by a slowdown in the Chinese economy resulted in falling prices of commodities as shown by Extract 6. Price of exports would decrease and this will lead to a more than proportionate increase in the quantity demanded for exports since demand for exports is price elastic, resulting in an increase in export earnings. On the other hand, import expenditure

will decrease as domestic goods are relatively cheaper. Hence, the current account balance would improve. BOP will also improve, ceteris paribus. However, this may invite protectionism from the trading partners.

### **Effect on Singapore**

Although Singapore registered negative inflation as indicated in Extract 7, it was mainly due to the fall in housing rents and car prices, and the lower costs of petrol and electricity tariffs because of the falling global oil prices. Core inflation remains positive and the economy continues to enjoy economic growth. Thus, the negative inflation may not necessarily be undesirable so long consumption and investment still increase.

### **Conclusion and Evaluation**

The desirability of negative inflation on an economy depends on the cause, extent and duration. If the negative inflation is due to a fall in aggregate demand and a deflation results like what happen in the euro zone, the economies are likely to be in recession and is undesirable. If inflation falls due to lower cost, the extent of negative inflation is minimal and does not lead to a deflation, it may not necessarily be undesirable if the economy is able to attain low unemployment rate and economic growth. A prolonged negative inflation tends to be undesirable to an economy as the extent of economic growth is affected.

L3	7 – 8 M for a developed explanation of whether negative inflation is undesirable with relevant analysis and due reference to the data, including evaluation.  Max 6 M if there is no overall conclusion and evaluation.	6 – 8
L2	Under-developed explanation of whether negative inflation is undesirable with some reference to the data.  Max 4 M for one-sided explanation.  Max 4 M for an answer without relevant reference to the data.	3 – 5
L1	Will show understanding of the desirability with limited economic concepts or no relevant reference to the data.	1 – 2

- (g) With reference to the data where appropriate, discuss whether governments should use negative interest rates or another policy measure during a recession with deflation. [8]

During a recession, an economy registers negative growth for at least two consecutive quarters and unemployment rate rises. Deflation will lead to further fall in aggregate demand if consumers and firms postpone their consumption and investment.

### **Negative interest rates should be used**

- ❖ During a recession with deflation, it is difficult for a central bank to use expansionary monetary policy. Even if nominal interest rates are kept close to zero per cent, deflation implies that the real interest rates are positive. As the cost of borrowing is higher in real terms after taking into account of the price effects, consumer and firms will be deterred from spending. The increase in consumption and investment after a cut in interest rates will not be significant. Therefore, negative nominal interest rates are used by central banks to keep a low real interest rates. As indicated in Extract 8. European Central Bank (ECB), central banks in Denmark, Sweden and Switzerland have negative interest rates on any reserves above the minimum regulatory requirement deposited by the commercial banks with them, thus encouraging lending. An increase in lending implies a rise in C and I, and AD increases. National income will then increase by a multiple via the multiplier process, attaining actual economic growth. Production will rise and demand for labour will increase,



thus reducing unemployment. The increase in AD will also help to raise general price level and address the deflation problem.

- ❖ Negative interest rates will reduce the net inflow of short-term capital. A decrease in the inflow of short-term capital reduces the demand for local currency while an increase in the outflow of short-term capital increases the supply of local currency in the foreign exchange market. Thus, the local currency depreciates against the foreign currency. As shown by Extract 8, the euro depreciated against the dollar by nearly 20% after the ECB introduced negative interest rates. Assuming the sum of the price elasticity of demand for exports ( $PED_x$ ) and the price elasticity of demand for imports ( $PED_m$ ) is greater than one, i.e.,  $|PED_x + PED_m| > 1$ , Marshall-Lerner condition is satisfied. Therefore, a depreciation of the exchange rate suggests that the net exports tend to increase, improving the current account balance.
- ❖ **Limitation:** However, loans may be limited during a recession as not many individuals or firms are willing to borrow as suggested by Extract 8. Moreover, the profit margins of commercial banks will reduce as lending rates fall but deposit rates are not able to be reduced much so as to get funds from savers. In addition, although negative interest rates will weaken the exchange rate and improve the price competitiveness of exports, the large economies are not enjoying rapid growth and their purchasing power remains weak. The prices of products by other countries tend to be low too as they may also experience deflation or very low inflation.

### **Another Policy Measure should be used**

#### **Expansionary Fiscal Policy**

- ❖ As suggested by Extract 6, in order to address a recession with deflation, governments should also use fiscal stimulus to spend on infrastructure such as transportation network, sewerage facilities, power stations, schools and hospitals. A reduction in personal income tax will increase disposable income of consumers and raise their purchasing power. This increases their ability to spend on more expensive items and consumption increases. A reduction in corporate income tax rate will increase the after-tax profits of firms, and increase their incentive to spend on capital goods as their expected return on investment is higher. Investment will then increase. The increase in G, C and I will lead to an increase in AD, and national income will then increase by a multiple via the multiplier process, attaining actual economic growth and creating jobs.
- ❖ **Limitation:** However, the Greek government may find it difficult to adopt fiscal stimulus due to the government debt. The level of consumer and business confidence will also affect the extent of increase in C and I respectively after the tax cut.

Or

#### **Quantitative Easing**

- ❖ As suggested by Extract 6, ECB will start quantitative easing by buying government bonds from banks and injecting funds into the economy. This will encourage lending and stimulate the economy through the increase in C and I.
- ❖ **Limitation:** However, a lack of confidence in the economy will limit the amount of borrowing and spending.

### **Conclusion and Evaluation**

- ❖ The use of negative interest rates is a new approach and has its limitations. The interest rates charged by central banks on reserves are still minimal thus far so the effectiveness tends to be limited. Another conventional policy measure such as fiscal stimulus is to be used too. A combination of policy measures is required to address the root causes of the recession and deflation.
- ❖ Besides short-term measures, the governments should adopt long-term measures to ensure the economic fundamentals of their economies are sound instead of resorting to short-term measures. Supply-side policies should be adopted to restructure the economy, develop comparative advantage for the economy and embrace free trade to promote economic growth.

L3	<p>7 – 8 M for a developed explanation of negative interest rates and another policy measure with relevant analysis and due reference to the data, including evaluation.</p> <p>Max 6 M if there is no overall conclusion and evaluation.</p>	6 – 8
L2	<p>Under-developed explanation of negative interest rates and another policy measure with some reference to the data.</p> <p>Max 4 M for one-sided explanation.</p> <p>Max 4 M for an answer without relevant reference to the data.</p>	3 – 5
L1	<p>Will show understanding of a policy measure with limited economic concepts or no relevant reference to the data.</p>	1 – 2

### **Suggested Answers for 2016 J2 H1 (8819) Economics Prelim Section B Essay**

University education is heavily subsidised in some countries but not others.

3a) Explain how the pursuit of self-interest helps to allocate resources efficiently. [10]

3b) Assess the economic case for the different levels of government subsidies in university education across countries. [15]

#### **Marking Scheme (a)**

<b>Knowledge, Application, Understanding and Analysis</b>		
<b>L3</b>	Well-developed explanation how pursuit of self-interest helps to allocate resources efficiently with the support of diagram.	<b>7 – 10</b>
<b>L2</b>	Under-developed explanation how pursuit of self-interest helps to allocate resources efficiently.  Max 5m for answers that only address self-interest of either consumers or producers.	<b>4 – 6</b>
<b>L1</b>	For a smattering of valid points.	<b>1 – 3</b>

#### **Marking Scheme (b)**

<b>Knowledge, Application, Understanding and Analysis</b>		
<b>L3</b>	For a well-developed explanation on the different levels of government subsidies in university education across countries.	<b>9 – 11</b>
<b>L2</b>	For an undeveloped answer on the different levels of government subsidies in university education across countries.  Max 7m: For a well-developed answer that only addresses how the extent of MEB led to different levels of subsidy across countries plus explanation of how market fails in the case of university education.  Max 6m: For an undeveloped answer that addresses other reasons not related to MEB	<b>6 – 8</b>
<b>L1</b>	For an answer that shows a descriptive knowledge of why markets fails in the case of university education with little reference to government intervention	<b>1 – 5</b>
<b>Evaluation</b>		
<b>E2</b>	For an evaluative assessment based on economic analysis.	<b>3 – 4</b>
<b>E1</b>	For an unexplained assessment or one that is not supported by economic analysis	<b>1 – 2</b>

3a) Explain how the pursuit of self-interest helps to allocate resources efficiently. [10]

The market economy uses the price mechanism to allocate its scarce resources. The price mechanism works automatically to allocate resources efficiently based on demand and supply forces (i.e. Adam Smith's "invisible hand"), and the end result is the maximisation of society's welfare.

The price mechanism works to resolve the basic economic problem of what, how much, how and for whom to produce. Self-interested consumers aiming to maximize their utility make choices on the amount and type of goods to purchase based on additional satisfaction derived and additional costs incurred from consuming an additional unit of the good. Likewise, self-interested producers aiming to maximize profits make choices among the various methods of production based on the additional revenue gained and additional costs incurred from producing an additional unit of the good. The pursuit of self-interest by both consumers and producers addresses the problem of scarcity via the working of price mechanism which for private goods without imperfect information, imperfect competition and externalities brings about efficient allocation of resources. The price mechanism leads to allocative efficiency as it answers the 4 questions of, "What to produce", "How much to produce", "How to produce" and "For whom to produce"

Consumers will cast their dollar votes to show their preferences for the types and quantities of goods and services they preferred. Consumers influence producers' decisions on what to produce based on their demand preferences. The amount they are willing and able to pay is determined by the additional satisfaction they derived from consuming an additional unit of the good. This is represented by the demand curve which is also the marginal private benefit (MPB) curve of the consumers. Assuming that there is an absence of externalities,  $MPB=MSB$ .

Producers self-interest is to maximize profits will receive the price signal from consumers. Prices of goods and services preferred by consumers will rise when quantity demanded exceeds quantity supplied. Producers will respond to this price signal by diverting more resources to produce more of those goods and services whose prices have risen. Producers will decide on how to produce by comparing the relative prices of factors of production to achieve the lowest cost. The amount which producers are willing and able to supply at various price levels represents the supply curve. Producers decision to supply is based on the extra cost incur in producing an extra unit of the good or service. Hence, the producer supply curve is also the marginal private cost (MPC) curve. Assuming that there are no externalities,  $MPC=MSC$ .

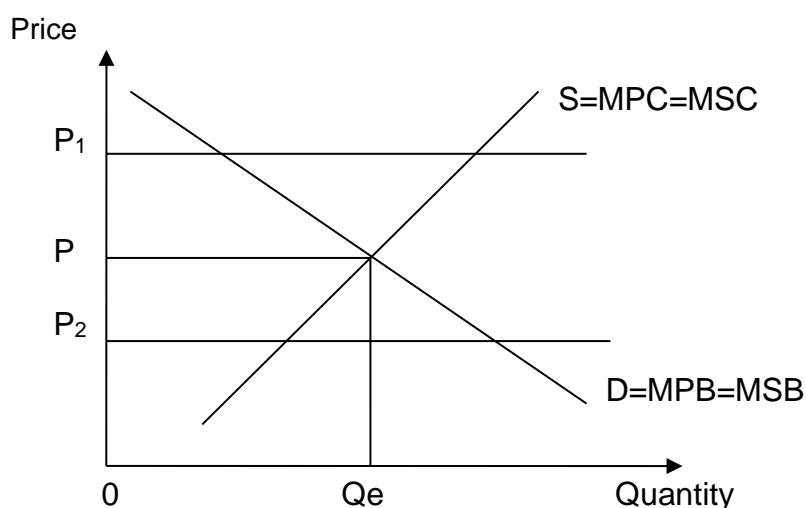


Figure 1

The intersection of the demand ( $D=MPB=MSB$ ) and supply ( $S=MPC=MSC$ ) curves in the figure above leads to the attainment of an equilibrium price at  $OP$  and quantity at  $OQ_e$ . At this price at  $OP$ , consumers decide what and how much to buy and producers decide on what and how to produce based on price signal. This is also a situation where  $MSC=MSB$  where resources are efficiently allocated.

If the market price is at  $OP_1$ , which is above the equilibrium price, excess supply of this good in the market will exert a downward pressure on price which is indicative of consumers' preference for some other goods. Producers in the pursuit of self-interest will reduce their quantity supplied, directing resources to produce other goods where consumers value them higher. At the same time, self-interested utility maximizing consumers will increase the quantity demanded of the good. This adjustment process will continue in the market with price falling until quantity demanded is equal to quantity supplied. Similarly at  $OP_2$ , below the equilibrium price, shortage  $Q_d > Q_s$  in the market will exert an upward pressure on price indicative of consumers' preference for this good over others. Price will rise reducing, reducing quantity demanded until the shortage is eliminated at price  $P_e$  and quantity  $Q_e$  where allocative efficiency is achieved.

In conclusion, the price mechanism determines what to produce, how much to produce, how to produce and for whom to produce. It automatically co-ordinates the resource allocation of producers and consumers through the signals given by price changes. However, it must be noted that the price mechanism is not always the best system to allocate resources efficiently in an economy if the assumptions we made earlier do not hold.

3b) Assess the economic case for the different levels of government subsidies in university education across countries. [15]

Market failure occurs when an unregulated market fails to achieve an efficient allocation of resources. An efficient allocation of resources is achieved when the economy achieves allocative efficiency. Allocative efficiency occurs when it is impossible to change the allocation of resources to make someone better off without making someone else worse off. This means that society's welfare is maximised where  $MSC=MSB$ .

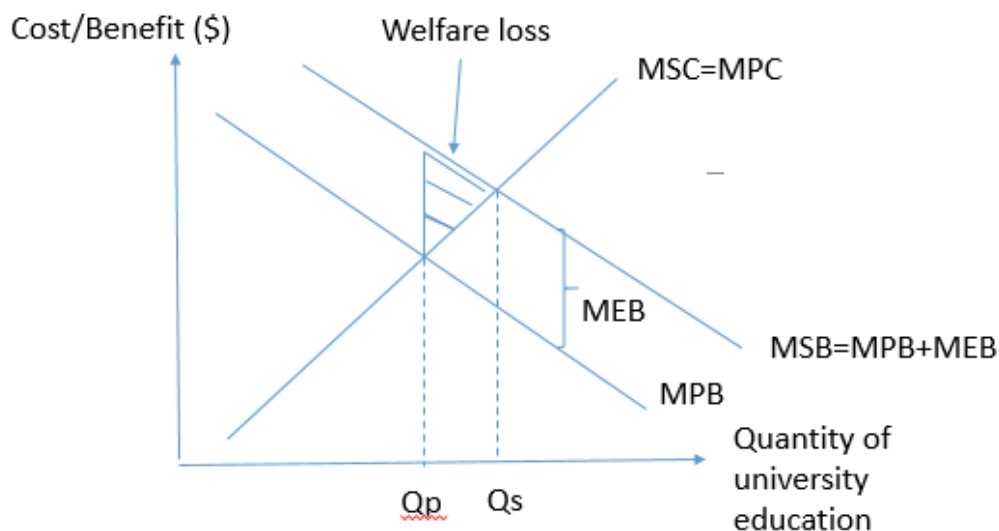


Figure 2: Under-consumption of University Education

University education leads to market failure due to the existence of imperfect knowledge and positive externalities. With reference to the diagram above, assuming  $MPC=MSC$ , consumers will consume at  $Q_p$ , where  $MPC=MPB$ . Example of MPC of university education to students are tuition fees and MPB is knowledge gained from consuming an additional unit of university education. This is because the consumers only take into account private costs and benefits ignore the external benefits like increase in labour productivity and economic growth from the consumption of education. The existence of externalities lead to the divergence between MPB and MSB by the amount of MEB. The socially optimal level is at  $Q_s$  where  $MSB=MSC$ . Since  $Q_p < Q_s$ , there is under-consumption. Since  $MSB > MSC$  between  $Q_s$  and  $Q_p$ , there is welfare loss equivalent to the shaded areas seen in the diagram above.

Besides, positive externalities, consumers might under-consume education due to imperfect information. Individuals may not be able to value their private benefits and costs correctly, especially when they undervalue long term private benefits of consuming education. If this is the case, the extent of under-consumption without government intervention will be more serious.

There are two different approaches to solving the under-consumption and this is adopted by the different governments. Different governments provide different levels of subsidies due to many reasons. Firstly, the government may perceive the extent of market failure to be different.

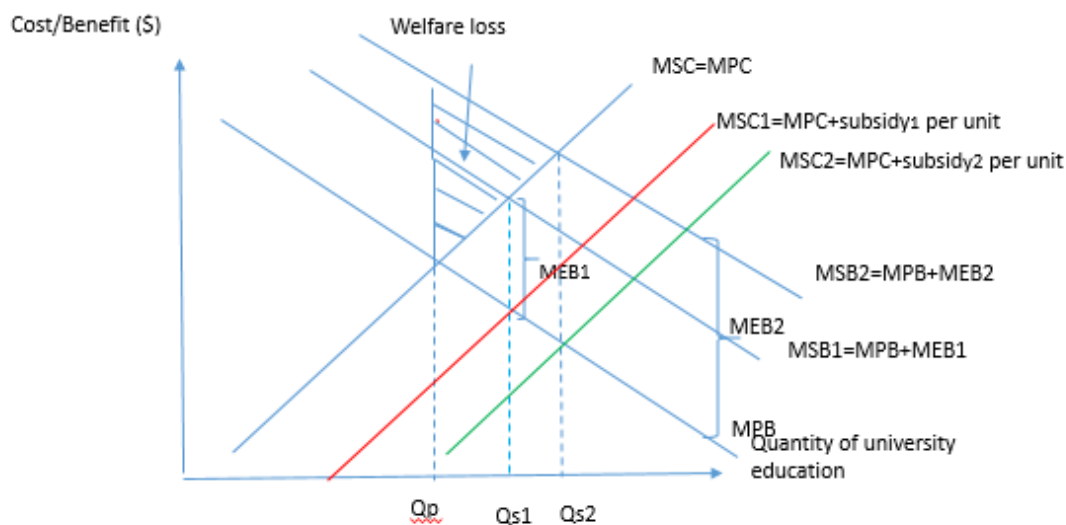


Figure 3: Different levels of subsidy depending on MEB

A government who subsidises more may perceive the extent of external benefits to be much larger than a government who subsidises less. For example, a government who subsidises less believes that MEB has already been internalised by society since society is aware of the external benefits of consuming university education leading to smaller extent of divergence. This could occur in countries that emphasises on the importance of higher education. As seen in the diagram above, a government which perceives MEB to be much higher, equivalent to  $MEB_2$ , will impose a higher level of subsidy ( $subsidy_2$  per unit), this lowers the cost of consuming university education resulting in a shift of  $MSC=MPC$  rightward to  $MSC_2=MPC+subsidy_2$  per unit. With a larger extent of external benefits, it requires a higher level of subsidies to ensure that MPB shifts to a large extent to coincide with MSB. On the other hand, a government may subsidise lesser due to the perceived external benefits being lesser. As seen in the diagram above, a government which perceives the MEB to be equivalent to  $MEB_1$  will impose a lower level of subsidy ( $subsidy_1$  per unit) since the divergence between MPB and  $MSB_1$  is to a lesser extent. This leads to a fall in cost of consuming university education, resulting in a shift from  $MSC=MPC$  to  $MSC_1=MPC+subsidy_1$  per unit.

The two different approaches across two countries could differ depending on the fiscal position of the government. A government with a stronger and healthier fiscal position would definitely have the ability to fully subsidise university education for its citizens. Furthermore, the opportunity cost of subsidising university education will be much lower for a government with a stronger fiscal position compared to a government with a weaker fiscal position. This is because a government with a weaker fiscal position would have other priorities to achieve first like economic growth instead of correcting the abovementioned market failure. Ability to provide large amounts of subsidy is limited if the country faces a strained in fiscal position. For example, in 2010, the British government cut subsidies for university education to cut back on public-sector to strengthen its fiscal position.

Another reason for the different approaches is related to the issue of equity. Whether a government subsidises more or less depends on the microeconomic and macroeconomic priority of the government. If the government would like to address the issue of equity, the subsidies have an effect of lowering the cost of consuming university education, thus making it more affordable to the low income groups addressing the issue of equity. Thus, a government which prioritise equity as its

microeconomic objective, will tend to give a higher level of subsidies compared to another government that chooses to prioritise other objectives.

Lastly, the different levels of subsidy given by government differs due to the differences in cost of production of universities. A university incurs operating costs like rent, utilities and manpower. A university located in the city would be more expensive to operate due to the high rental costs. Furthermore, a larger university would also incur higher manpower and utilities costs compared to a smaller university.

In conclusion, there could be many reasons why the government provides different levels of subsidies in the under-consumption of university education. However, the government intervention is not limited to the subsidies, a government may also intervene in other ways like supplementing the provision of university education and providing cash grants to students. Thus, besides subsidies the government could use a combination of policies to correct the under-consumption of university education. Therefore, a government that provides a lower level of subsidy but complements it with other policies will also be able to achieve efficient allocation of resources. Lastly, all governments aim to achieve an efficient allocation of resources so as to ensure society's welfare is maximised. However, government intervention may not necessarily be the best way to achieve allocative efficiency due to problems like imperfect information which could lead to overestimation or underestimation of the value of MEB thus incorrect level of subsidy is given. Often, intervention costs incurred by the government are often ignored. Hence, government intervention would at most allocate resources in a way that is closer to the socially efficient level of output.

Free Trade Agreements allows a freer flow of goods, services and investments.



4a) Explain the key macroeconomic objectives of the Singapore government. [10]

4b) Discuss whether establishing free trade agreements is the best way to achieve healthy balance of payments and low unemployment in Singapore and China. [15]

**Marking Scheme (a)**

<b>Knowledge, Application, Understanding and Analysis</b>		
<b>L3</b>	Well-developed explanation of the key macroeconomic objectives of a government with strong reference to the Singapore context.	<b>7 – 10</b>
<b>L2</b>	Under-developed explanation of the key macroeconomic objectives of a government.  Max 6- Developed explanation of at least 2 macroeconomic objectives without reference to the Singapore context.  Max 4- Answers that addressed HOW instead of WHY.	<b>4 – 6</b>
<b>L1</b>	For a smattering of valid points.	<b>1 – 3</b>

**Marking Scheme (b)**

<b>Knowledge, Application, Understanding and Analysis</b>		
<b>L3</b>	For a well-developed explanation of how FTAs and 2 other policies leads to healthier BOP and low unemployment with reference to the nature of Singapore and China respectively.  Max 9- Developed answers that does not make reference to nature of economy.	<b>9 – 11</b>
<b>L2</b>	For an undeveloped explanation of how FTAs and 2 other policies leads to healthier BOP and low unemployment with no reference to the nature of Singapore and China respectively.  OR  Max 7m: Well-developed explanation of how FTAs (with no other policies) lead to healthier BOP and low unemployment with strong reference to the nature of Singapore and China	<b>6 – 8</b>
<b>L1</b>	For an answer that shows a descriptive knowledge of how establishing FTAs lead to healthier BOP and low unemployment.	<b>1 – 5</b>
<b>Evaluation</b>		
<b>E2</b>	For an evaluative assessment based on economic analysis.	<b>3 – 4</b>
<b>E1</b>	For an unexplained assessment or one that is not supported by economic analysis	<b>1 – 2</b>

4a) Explain the key macroeconomic objectives of the Singapore government. [10]

Achieving the macroeconomic objectives is important to the economy and a concern of many governments including the Singapore government. By achieving the macroeconomic objectives, Singapore would be able to reap the benefits or avoid any economic or social costs that could potentially arise from the various macroeconomic problems. Since Singapore is a small and open economy, it is susceptible to trade and capital flows and is import dependent and export-oriented.

The first key macroeconomic objective of the government is achieving internal price stability. Internal price stability refers to a situation where there is low and stable inflation rate. Pursuing price stability is important since inflation or deflation can lead to adverse internal and external consequences on the economy. For example, when an economy like Singapore is faced with cost-push inflation, a reduction in profit margins discourages investors from further investments leading to a contraction of in real GDP and higher unemployment. Furthermore, with increasing cost of production, producers will pass on cost increases to consumers in terms of higher prices leading to an erosion of Singapore's export competitiveness. This leads to a fall in export revenue and since Singapore is depending on external sector for growth, it will adversely impact Singapore's growth to a large extent. Moreover, a fall in export revenue also means that balance of trade worsens and may weaken Singapore's exchange rate. A weaker exchange rate would imply that imports will be more expensive in Singapore dollars further worsening the inflation levels and hurting growth and unemployment.

Secondly, the Singapore government also aims to achieve sustained economic growth. A sustained economic growth which is measured by a percentage change in real GDP per capita results in an expansion of the productive capacity of the economy. Economic growth is desirable to achieve since it brings about higher disposable income and purchasing power leading to an increased ability to purchase more and better quality goods and services. Moreover, it enhances investors' confidence since it economic growth implies a positive economic outlook leading to more production, investment and higher employment. A robust economic growth is essential as it enables the Singapore government to collect more tax revenue without the need to raise taxes. These funds would then be channelled to constructing more infrastructure, education and R&D to promote potential growth. This improves both material and non-material standards of living. It is pertinent for the Singapore government to consistently promote potential growth since it will prevent demand-pull inflation and keeps the labour force and exports more competitive.

Thirdly, the government also aims to achieve low unemployment. Low unemployment is a situation whereby everyone in the employable age group who is capable and willing to work at the existing wage rate can find a job. It is important to achieve low unemployment as a high unemployment represents a wastage of available resources and a loss of potential output. The loss of income of individuals who are unemployed will result in a fall in consumption in the economy. This will then affect business confidence. Firms will then hold back production and investment resulting in an adverse impact on growth. Besides that, the government will lose tax revenue from income and consumption tax. This would mean that the government will have lesser funds for infrastructural development which would hinder economic growth in Singapore.

In conclusion, the above three goals are the key macroeconomic aims of the Singapore government given the nature of Singapore economy's which is small and open, continue achieving growth. Furthermore, sustained economic growth is also essential as it ensures Singapore's short term and long term economic performance and improves standard of living for Singaporeans.

Other acceptable answers - healthy BOP

**4b) Discuss whether establishing free trade agreements is the best way to achieve healthy balance of payments and low unemployment in Singapore and China. [15]**

A Free Trade Agreement is a legally binding agreement between two or more countries to reduce or eliminate barriers to trade and facilitate the cross border movement of goods and services between territories. A healthy balance of payment (BOP surplus) and low unemployment are two of the main macroeconomic objectives of the governments of Singapore (small and open) and China (large and less open).

**Thesis: Establishing FTA is the best way to achieve healthy BOP and low unemployment in Singapore and China.**

The pursuit of free trade policy such as signing FTAs could be the best approach to achieving healthy BOP and low unemployment. Establishing more FTAs expand trade linkages with the rest of the world. This promotes new markets and firms in these countries stand to enjoy many benefits like tariff concessions, preferential access to certain sectors and faster entry into new markets. This will lead to an increase in net exports resulting in a BOP surplus, assuming M expenditure remains constant. Besides, improving BOP, the increase in net exports would also lead to an increase in AD and national income via the multiplier effect. Producers will then increase production and hire more workers leading to a fall in unemployment. Although the positive effects are similar in Singapore and China, Singapore will stand to gain more from FTAs compared to China. This is because Singapore is a small and open economy. This means that the Singapore economy is import dependent due to the lack of natural resources and export oriented due to the small domestic sector. Therefore, an enlargement of world market through signing of FTAs would lead to an even bigger opportunity for Singapore firms to sell to overseas market and tap on more sources of imports for factors of production. Therefore, the improvements in BOP and lowering of unemployment will be even larger. On the other hand, for large and less open economies like China, may not be impacted significantly since they already have a large domestic market to sell their goods and services too. Furthermore, they are rich in natural resources therefore, do not depend heavily on imports for growth except for imports of capital goods.

Besides improving balance of trade, signing of free trade agreements allows for freer flow of investment into economies. This will lead to an inflow of long term capital and improvement in the capital account of the BOP of both economies. This is especially significant for Singapore since it has a small domestic sector therefore lesser domestic investments compared to a large economy like China, however, with the signing of FTAs, the Singapore economy would be able to benefit from larger flows of investment. Besides improving KA of the BOP, new investments also implies that more firms are being set up and more workers will be needed to fill up these new positions. This leads to a fall in unemployment which is more significant in Singapore than in China

**Anti-thesis: Establishing FTA is not the best way to achieve healthy BOP and low unemployment in Singapore and China while other policy options are better.**

However, establishing FTA may not necessarily be the best way to achieve healthy BOP and low unemployment in both economies. This is because since economies are more interconnected it would mean that they would be susceptible to external shocks. For example, when a trading partner is faced with falling growth, they would demand for lesser exports and this will result in a fall in net exports, AD and consequently, national income via the multiplier effect. This will result in a fall in production and higher unemployment. Simultaneously, it will also worsen balance of trade in the current account. This impact will be more severe in Singapore compared to China since Singapore is dependent on exports for growth, a fall in export revenue will result in a much larger fall in national income compared to China who can still depend on domestic sector for growth.

Furthermore, the signing of FTA would also mean that more domestic firms will invest in other countries to gain access to larger foreign market and earn more revenue. This could lead to a loss in comparative advantage where firms relocate their production to emerging economies that offer a lower cost of production. This could potentially lead to structural unemployment. The problem of structural unemployment will be more significant in Singapore since China is an emerging economy

which attracts more inward investments that are labour intensive due to the availability of a labour force thus Singapore will lose out to China.

Other policies are better to implement to achieve a healthier BOP and lower unemployment. For example, the government may choose to implement supply-side policies. Interventionist approach like spending more on education and training e.g. Skillsfuture credit as well as promoting R&D through providing infrastructure will help to increase the productive capacity of the economy in the long term. With improving the quality of products, it will boost exports and improve current account balance. At the same time, a more productive workforce and availability of infrastructure will attract more inward investments, thereby improving capital account and overall BOP. Training of workers will also lead to a fall in structural unemployment since workers are equipped with appropriate skills, reducing the mismatch of skills and jobs.

However, supply-side policies has its' limitations too. The success of supply-side policies depends on the receptiveness and ability of workers in attending training and absorbing the new knowledge and skills respectively. Besides that, it would also take time for governments to build infrastructure to support R&D. The implementation of supply-side policies will be more pertinent in Singapore than in China since Singapore lacks the size of labour force that China offers therefore requires more skilled labour to attract more inward investments.

Another policy that could be implemented will be expansionary fiscal policy. By reducing personal income and corporate tax rates, disposable income increases and after tax profits increases respectively. This encourages consumption and investments. Besides that, with increasing government spending on infrastructure, AD will increase and national income will increase via multiplier effect. This leads to an increase in production, therefore lowering the level of unemployment. The increase in inward investments results in capital inflow; improving BOP and creating more jobs.

However, the success of expansionary fiscal policy differs from economies. A small and open economy like Singapore has a weaker multiplier compared to a large economy like China who has a stronger multiplier. Hence, the fall in unemployment will be limited in Singapore compared to China. Besides that, the increase in level of investments may not be definite since there are other reasons that would influence an investor's decision like economic outlook.

### **Evaluation**

In conclusion, although signing free trade agreements may benefit both economies. Singapore will stand to benefit more due to the small size and open nature of the economy. However, both economies are not limited to implementing FTAs to achieve healthy BOP and lower unemployment. In fact, both governments will need to implement a combination of policies to continue to achieve both macroeconomic objectives since FTAs take time to be implemented. Furthermore, a combination of policies will help to mitigate the costs of signing FTAs like susceptibility to external shocks and structural unemployment. The government has to consistently review its policy to ensure that it is suitable given the economic conditions of the world. Besides that, the ability of the government to carry out policies also depend on their fiscal position. A government with a weaker fiscal position will not be able to successfully carry out expansionary fiscal policy and supply side policies.

Other acceptable answers- Protectionism as an anti-thesis to correct BOP and unemployment