

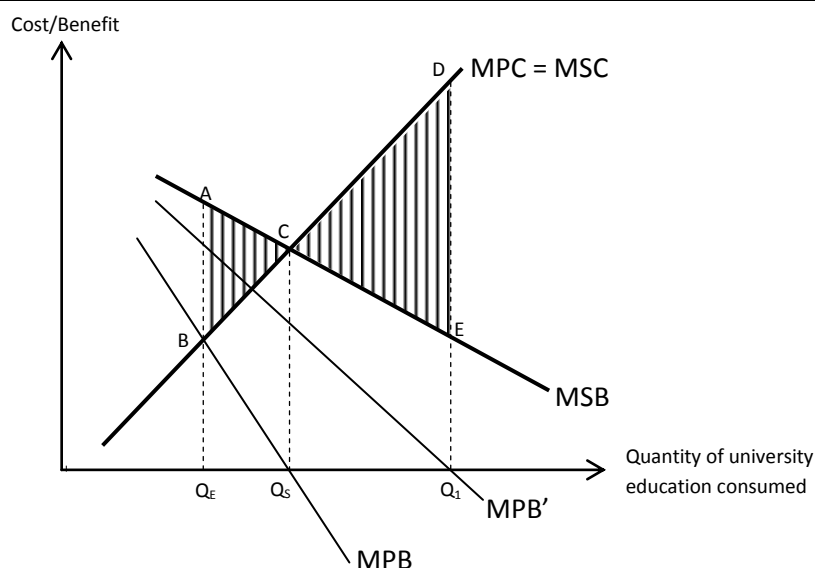


**Anderson Junior College**  
**JC2 2015 H2 Economics**  
**Preliminary Examinations**

**CSQ 1 Changes in Higher Education**

<b>(a)</b>	<b>i. With reference to Figure 1, compare the trend in government expenditure on primary and university education in Singapore between 1998 and 2013.</b>	<b>[2]</b>
	<ul style="list-style-type: none"> <li>• Similarity: Both government expenditure on primary and university education in Singapore increased between 1998 and 2013. (1m)</li> <li>• Difference: The increase in government expenditure on university education was greater than that on primary education. (1m)</li> </ul> <p><u>Other possible answers:</u>  Increase in expenditure on primary education was gradual while increase in expenditure on university education saw more fluctuations.</p>	
	<b>ii. Explain one possible reason for the difference observed in (a)(i).</b>	<b>[2]</b>
	<p>The number of students entering university in Singapore has increased more than the number of students entering primary school which has remained relatively stable due to the low birth rate. In contrast, the proportion of students who qualify for a place at the local universities has increased significantly over the years.</p> <p><u>Other possible answers:</u>  The expenditure on university education on a per student basis has increased more than that for primary education due to the significant increase in expenditure on creating the new universities as well as on research and other facilities in the universities.</p>	
<b>(b)</b>	<b>Explain one reason why the UK government favours mergers of universities.</b>	<b>[2]</b>
	<p>The UK government favours mergers of university as it can “better support delivery of teacher training and ultimately pupil attainment in London” (Extract 1). With mergers, UK universities would be able to reinforce UK’s status as a global leader in higher education. This would help them attract the brightest students from around the world. In the long run, this will improve the quality of labour factors as well as improve the quality of UK goods and services, achieving both actual and potential growth.</p>	
<b>(c)</b>	<b>Discuss whether mergers of universities ‘cost more than they save’</b>	<b>[8]</b>
	<p>There are two types of mergers of universities mentioned in Extract 1. Universities may undergo a merger of “equals” or larger universities may absorb smaller specialist colleges. Such mergers may or may not allow universities to enjoy cost savings.</p> <p>As universities undergo a merger, they are likely to be able to ‘pool expertise and build cross-disciplinary work’ (extract 1). Prior to the merger, if universities wanted to broaden the scope of subjects they offer to students or embark on cross-disciplinary research, there was a need for universities to collaborate with one another through discussions and contractual agreements which may take a long time to establish. Once the merger has been completed, the universities can now pool expertise and conduct cross-disciplinary research more easily and enjoy cost savings (i.e. time cost).</p>	

	<p>Furthermore, a merger allows the formation of 'one administration and the trimming of departments'. There will now be less overlap in the work done and the personnel hired by the universities. Also, instructions handed down to ordinary member staff would also be clearer and the decision making process will be made faster with only one administration instead of two. Hence, this will lead to costs savings for the university as they will now be able to provide the same level of services with less labour and with less time delays.</p> <p>However, mergers may also lead to higher costs experienced by universities. As the university become larger, it may lead to management problems of coordination and control, as 'ordinary staff members feel more remote about any form of decision making'. Hence, inefficiencies may go unchecked and this may result in higher costs incurred by the university. Also, there may be a loss in morale due to the significant changes experienced by the staff due to the merger, i.e. a loss in identity. This may lead to poor motivation and shoddy work, resulting in higher costs to correct such problems.</p> <p>Nonetheless, it is likely that university mergers will not cost more than they save. Given that there are reductions in subsidies for UK university education provided by the government, universities would have the incentive to pursue continual improvement and ensure that they are operating on the least cost possible. Hence, it is likely that universities would put in measures to ensure that staff welfare and morale is well taken care of in the midst of such significant changes.</p>	
<b>(d)</b>	<b>'A generation ago, students paid nothing for university education'. Explain the advantages and disadvantages of this approach.</b>	<b>[6]</b>
	<p>When students paid nothing for university education, this suggests that there was a subsidy provided by the government. This full subsidy provided by the government can be evaluated on grounds of efficiency and equity.</p> <p>A key advantage of this approach is that the access to university education is no longer subjected to the ability of students to pay. It is inevitable that income inequality will exist in the market for university education. By providing university education for free, willing students from poorer backgrounds are also able to enjoy the benefits of university education, such as the opportunity to gain employment with higher wage rates. Hence, this would result in a more equitable distribution of university places and an equitable distribution of income as these students earn higher incomes in the future.</p>	



Another advantage of such an approach is that there is a more efficient allocation of resources towards the attainment of university education. As explain in d(i), positive externalities from higher education result in the under-allocation of resources to university education and subsidies are thus required. As illustrated in figure 1, if the  $MPB = MPC = 0$  at  $Q_s$ , the amount of subsidies required would be equivalent to the full amount of positive externality at  $Q_s$  and education should cost nothing to achieve allocative efficiency.

However, if the level of  $MPB$  was at  $MPB'$  and university education was provided for free, there will be an over-consumption of university education beyond the social optimal level of consumption (consumption will be at  $Q_1 > Q_s$ ). As such, providing university education for free would lead to an over-allocation of resources to the attainment of university education and a resultant net cost to society by the triangle  $CDE$ .

Furthermore, the government provision of a full subsidy has led to a case of government failure where the government's efforts in correcting the under-consumption of university education, has led to a larger deadweight loss to society than before. For example, resources that could have been diverted to other markets in the economy to support the consumers from low income backgrounds are now over-allocated to the market for university education. Hence, this may lead to worsening equity as well as inefficiencies on the economy level.

Moreover, since university education is free for consumers, universities may not have the ability to deliver higher quality teaching or improve teaching facilities for students. For instance, by levying a £9000 fee would allow universities to deliver high-quality teaching, with many institutions now planning to invest more in improved teaching facilities. Hence, providing university education for free may result in a loss of students' welfare due to the sluggish development.

(e)	Discuss if you would recommend UK's policy approach to reduce subsidies to university education for Singapore.	[10]
	<p>As explained in (d), subsidies are provided to reach the socially optimal level of university education. In Singapore, the Government continues to provide a high level of subsidies (75% or more of the cost of education for general courses) whereas the UK Government has been reducing subsidies and increasing fees from zero to £9,000 in 2012.</p> <p>UK's policy approach may be recommended as significant benefits of a university degree accrue to the individual in terms of "higher starting pay and successful careers after graduation" while the positive externalities are smaller. In other words, PMB is large while the extent of the EMB is small. In such a case, the Singapore government may have overvalued the amount of positive externalities and over-subsidised university education. This will lead to over-consumption of university education at <math>Q_1</math> beyond the socially optimal level of consumption <math>Q_s</math>, resulting in net cost to society by the triangle CDE.</p> <p>Furthermore, overconsumption of university education can result in dilution of the value of university degrees and even future under- and unemployment of university graduates. Therefore, to achieve efficiency both in the short-term and in the long-term, the Singapore government should reduce subsidies by the amount GF to reach socially optimal level of university education.</p> <p>Also, given that university fee increases have generally been "below the average annual inflation rate in Singapore", the subsidy (area HDFG) that has to be provided by the government "may not be sustainable in the long term and should rise in line with inflation". Furthermore, the ageing population in Singapore would require increasing healthcare expenditure and to maintain fiscal sustainability, it is recommended that Singapore reduces subsidies for university education.</p> <p>Nevertheless, the positive externalities in Singapore from higher education may be larger than other countries. Increased knowledge capital of university graduates help to drive productivity gains which spill over and raise wages even for non-university graduates. In a resource-scarce, knowledge-based economy like Singapore, university education is crucial in driving economic competitiveness, allowing it to compete on the frontier of innovation in</p>	

an increasingly dynamic global environment. Thus, if the positive externalities are indeed high in Singapore's case and the current subsidy levels are equivalent to the amount of positive externalities, UK's policy approach to reduce subsidies would not be recommended as it is inappropriate to the context of Singapore and would instead lead to welfare loss.

In addition, if subsidies were reduced, lower-income groups may not be able to afford university education or may decide not to pursue university education as they have heavy financial responsibilities that compel them to enter the labour market as soon as possible. With the rich students receiving university education and thus higher pay and successful careers in future while the poor students continue to only be engaged in low-wage jobs, the income inequity in Singapore will worsen. Reducing subsidies is thus not recommended.

However, "Ivy League members are entirely independent of the US government, yet operate a system of social outreach that no government could rival". Thus, it is still possible for Singapore to reduce subsidies and leave universities to "use ingenious fundraising techniques to roll in resources" like in the US while working with the various institutions to publicise existing "financial assistance schemes", and to encourage more students from low-income families to take them up. This would ensure that eligible students are receiving the available support and not unduly burdened by the financing of their education.

On balance, it is still recommended that Singapore reduces across-the-board subsidies to everyone and provide more targeted assistance instead where "bursaries and loans are given to low-income families that require them while rich students pay the full cost of education". This will not only help to reduce the government spending on subsidies which can then be diverted to funding other social expenditure with higher net benefit but also reap greater "value relative to investment" as the positive externalities from allowing talented and motivated low-income students to earn university degrees before joining the labour market may be larger than that for a well-off student. Such an option would be more equitable, efficient and make better use of taxpayers' money.

**CSQ 2: Uncertain US Economic Recovery**

<b>(a)</b>	<b>Compare the trend of unemployment rate and inflation rate in the US from 2011 to 2014.</b>		<b>[2]</b>
	<p>From Table 1</p> <p>(S): Both unemployment rate and inflation rate generally decreased.</p> <p>(D): Unemployment rate has been consistently decreasing while inflation rate experienced an increase from 2013-2014</p>		
<b>(b)</b>	<b>Explain why the Federal Reserve should not increase interest rates until:</b>		
	<b>(i)</b>	<b>inflation rate increases to 2%.</b>	<b>[2]</b>
	<p>An increase in interest rates will reduce C and I due to higher costs of borrowing. This will reduce AD.</p> <p>As shown in Extract 5, the inflation rate of US is very low – below target of 2%/ falling inflation rate till 1.6% in 2004 as shown in Table 2. Given such low inflation rate, a fall in AD might lead to <b>deflation</b>. Consumers would <b>delay consumption</b> due to lower future expected prices which will lead to a fall in the real national income, impeding growth.</p>		
	<b>(ii)</b>	<b>unemployment rate falls to between 5.2 and 5.5%.</b>	<b>[2]</b>
	Table 2: although unemployment rate is falling, it remains high at 6.2% in 2014. A fall in AD will significantly result in high demand deficient unemployment, worsening the already high unemployment in US.		
<b>(c)</b>	<b>(i)</b>	<b>Explain how an increase in interest rate will lead to an increase in the external value of the US dollar.</b>	<b>[2]</b>
	Increase in interest rate will lead to an increase in short term capital inflows which will result in rise in demand for US currency. Thus, the external value of the US dollar will rise/ appreciate.		
	<b>(ii)</b>	<b>With reference to Table 2, assess the extent to which standard of living in different countries will improve with an increase in interest rate in the US.</b>	<b>[8]</b>
	<p>Standard of living (SOL) refers to the level of subsistence and comfort in everyday life enjoyed by a community. To ascertain standard of living, there's a need to look at both the material as well as non-material aspects. Material standard of living looks at material comfort as measured by the goods and services available to the population while non-material standard of living looks at the intangible aspects that make up human life, such as leisure, safety, physical health, environmental quality issues, etc.</p> <p>An increase in interest rate in the US will lead to an appreciation of US dollar as explained in part (i). Hence, the foreign price of US exports rises and domestic price of imports into US falls.</p> <p><b>P1: SOL in some countries will improve to a larger extent</b></p> <p>As the domestic price of imports into US is lower, US consumers will switch to purchasing imports. This result in an increase in US's import expenditure which will mean an increase in export</p>		

revenue of US's trading partners.

From Table 2, Vietnam's export to US takes up 16.5% of GDP which is relatively significant as compared to other countries. Hence export revenue for Vietnam will increase to a relatively large extent. Real national income increases, leading to an increase in **material SOL** by a greater extent as they are able to consume more goods and services.

With economic growth in Vietnam, more resources are likely to be allocated to improve the healthcare facilities and education services. This would lead to longer life expectancy, lower mortality rate and higher literacy rate, hence improving the **non-material SOL** significantly.

However, with increased production in the economy, this may lead to more pollution which will worsen the quality of life for the people, thus lowering **non-material SOL**.

## **P2: SOL in other countries will improve to a smaller extent**

However, if exports take up a relatively insignificant percentage of GDP, the impact of increase in export revenue on GDP is minimal.

From Table 2, Russia's export to US takes up 1.2% of GDP which is the least as compared to other countries. Hence export revenue for Russia will increase by a smaller extent, hence increasing real national income and thus **material SOL** by a smaller extent.

## **Alternative P2: SOL in other countries will not improve**

On the other hand, SOL may fall due to increase in interest rate in US. Appreciation of USD means that foreign price of US exports increases. This means that for countries which imports from US, they will face a higher imported price.

From Table 2, Singapore's import from US takes up 9.9% of GDP which is the most as compared to other countries. Higher price of US's imports into Singapore will increase cost of production in Singapore, resulting in a fall in SRAS and hence real national income. Thus, **material SOL** decreases in Singapore.

With a fall in real national income, there may be less resources allocated to improve healthcare facilities and education services, hence leading to lower life expectancy and literacy rate and thus **non-material SOL**.

## **Evaluation:**

On the whole, it is difficult to assess the overall effect on the SOL in different countries due to missing information in Table 2. More information will be required to have a comprehensive assessment of the SOL. For example, if the gain from the export revenue is only limited to those in the export industry which is not distributed across the economy, the SOL of some citizens may not increase at all. Hence it is difficult to assess if the SOL has actually improved. Comprehensive measures such as GINI coefficient and Human Development Index could also be included for better assessment of SOL in the countries.

In addition, whether SOL improves in different countries depends on the existing policies in the countries. If the countries already have existing policies to address issues such as pollution, the non-material SOL may not deteriorate as much.



(d)	(i)	<b>Explain why “the economic recovery in the US is underway, yet uncertain”.</b>	<b>[4]</b>
		<p>As shown in extract 4, there was an increase in consumption expenditure due to higher consumer confidence as well as an increase in government defence spending. This leads to an increase in AD and hence real national income, indicating a US economic recovery is underway.</p> <p>However, the recovery is uncertain as the US is still vulnerable to external shocks. For example, as stated in extract 4, a slowdown in its trading partners will mean that there will be a fall in demand for US exports, which will reduce AD and result in a fall or even negative growth.</p>	
	(ii)	<b>Discuss if the US economic recovery is the most relevant factor on whether the Russian government should focus on growth.</b>	<b>[10]</b>
		<p>Russia is suffering from falling economic growth rates, a high inflation rate as well as a worsening current account, as shown in Table 3. Thus, Russia has to make a choice on whether to focus on growth, or to focus on other issues. Russia may choose to focus on growth as a continual decline in economic growth will lead to a fall in purchasing power as well as a fall in the standard of living in Russia.</p> <p><i>(Note: It is possible to argue that Russia should not focus on growth and use this as a basis for further discussion.)</i></p> <p><b>P1: US economic recovery is a relevant factor on whether Russia should focus on growth</b></p> <p>As the US economy recovers, more foreign direct investors may be drawn to invest in the US economy due to the higher demand and higher profits that they can enjoy in the US economy. Thus, Russia will need to focus on growth (which will provide higher and more stable profits for investors) so that there will not be a massive outflow of FDI from Russia, which will worsen its BOP as well as a further depreciation of the Russian Rouble.</p> <p><i>(For students whose premise is that Russia should not focus on growth, they could argue for the following under P1)</i></p> <p><i>US economic recovery will bring about an increase in demand for Russian exports, thereby increasing AD and RNY. Even though US may not be a main trading partner of Russia, the recovery of US will also bring about recoveries in other world economies who may be bigger trading partners of Russia, such as China. The recoveries of these economies will help to bring about growth in Russia through higher export demand. Thus, Russia should not focus on growth, but on other macroeconomic aims instead.)</i></p> <p><b>P2a: US economic recovery is not a relevant factor on whether Russia should focus on growth</b></p> <p>Moreover, a US recovery will have little impact on Russia since Russia's exports to US takes up only 1.2% of country's GDP as shown in Table 2. In other words, even if US were to recover and import more from other countries, Russia is unlikely to benefit much from it. Thus, Russia cannot rely on the US recovery to bring about Russia's economic growth and therefore, Russia should focus on achieving growth using its own economic policies</p>	



As stated in extract 4, the US economic recovery is uncertain. Thus, it may be too risky for Russia to base its economic decision on a US economic recovery when it cannot be sure if the economic recovery is going to happen. Thus, the US economic recovery will not be a relevant factor on whether the Russian government should focus on growth.

**P2b: Other factors are more relevant**

**Conflict in macroeconomic objective:** If Russia focuses on addressing slower growth through expansionary demand management policies, this may result in conflicts with other goals, such as price stability. Such expansionary policies will increase AD and exacerbate the inflation in Russia, which is already at 7.8% as stated in Table 2. This conflict in macroeconomic object may thus be a more relevant factor on whether Russia should focus on growth.

**Relative severity of the different macroeconomic problems:** Although growth is declining in Russia, it is still positive. On the other hand, the inflation rate is high and continues to increase. Thus there may be a more urgent need to address inflationary pressures in the country instead.

**Expectations of future commodity prices:** As Russia is a leading producer of commodities (Extract 6), the fall in commodity prices is one of the major factor why Russia is suffering a fall in economic growth. If commodity prices are expected to increase in the future, the Russian economy should recover without government intervention. Thus, the Russian government could thus decide to focus on objectives other than growth.

**EV:** As a major world economy, the US economic recovery will affect many countries, either directly or indirectly. The interconnectedness of the world economies will surely mean that Russia must take into account the state of the US recovery. However, it will be difficult to decide which the most relevant factor is as some of the factors discussed above are interconnected. For example, A US economic recovery will increase the demand for commodities, leading to an increase in prices. Thus, even though the expectation of future commodity prices may be an important factor, this expectation is also dependent on the US economic recovery.

1. Trouble continues to brew within the Malaysian government. The internal squabbles and allegations of corruption at the highest level have created much uncertainty for foreign investors. While the recently implemented Goods and Services Tax of 6% is seen as a more stable source of revenue for the Malaysian government, shops are bracing themselves for the impact. To make matters worse, the number of shoppers from Singapore has taken a hit due to a 400% increase in Causeway toll charges.

With the use of demand and supply analysis, discuss the impacts of the factors mentioned on different markets. [25]

### Suggested Answer

The various factors have reduced both demand and supply of normal goods in Malaysia and other countries. The extent of impact on different markets will differ depending on the price and income elasticities.

Demand for a product refers to the quantity which a consumer is willing and able to buy at every price level, in a specified time period, *ceteris paribus*. Supply refers to the quantity which producers are willing and able to make available for sale at different prices in a specified period of time, *ceteris paribus*.

The two factors that will affect demand for various goods and services are the uncertainty for foreign direct investors as well as the increase in Causeway tolls.

The political instability and allegations of corruption have negatively impacted business confidence and stability of the investment environment. Investment expenditure falls due to lower business expectations of profits and stability. One market that is affected is the **labour market**. With falling investment expenditure, firms involved in the production of capital goods will experience unplanned stock accumulation. They will reduce their output and employ fewer factors of production, including labour. This fall in derived demand for labour will cause the equilibrium wage rate and quantity of labour to fall.

Real national income falls at the same time as aggregate demand falls, leading to lower purchasing power. The impact of a fall in income levels on other markets depends on the income elasticity of demand (YED) for the good. YED measures the degree of responsiveness of the quantity demanded of a good to a change in income, *ceteris paribus*. **For normal goods** such as general merchandise and groceries, the income elasticity of demand (YED) is positive. With lower income levels, the demand for normal goods will fall due to a fall in purchasing power. In these markets, there will be a fall in equilibrium price and quantity, leading to lower total revenue for the producers.

The fall in demand for **luxury goods** such as organic food products and luxury fashion items, which are income elastic, will be larger than for **necessities** such as basic food items and utilities, which are income inelastic ( $0 < YED < 1$ ). Thus, the market for luxury goods will see a sharper fall in equilibrium price and quantity as compared to necessities.

On the other hand, **inferior goods**, such as instant noodles, have negative income elasticity ( $YED < 0$ ).

0). Hence the fall in income levels will result in an increase in demand as consumers switch from more luxurious substitutes, such as restaurant meals, to consume more instant noodles. In the market for inferior goods, equilibrium prices and quantity are likely to increase due to the increase in demand.

Furthermore, the large increase in toll charges (the charges that motorists pay when entering Malaysia) have also resulted in a reduction in the number of tourists from Singapore as it is now more expensive to travel by car to Malaysia for shopping and holidays. With fewer shoppers, both normal goods and inferior goods will experience a fall in demand.

Overall, normal goods are likely to experience a significant fall in demand due to the fall in income and increase in toll charges. However, inferior goods are likely to experience an increase in demand. This is because the shoppers and tourists from Singapore are more likely to be purchasers of normal and luxury goods when they travel to Malaysia. Hence the fall in demand for inferior goods due to the impact of the rise in tolls is not likely to outweigh the rise in demand due to a fall in income.

With the fall in demand for normal goods, the final impact on the market for various types of normal goods depends on the price elasticity of supply (PES). PES measures the degree of responsiveness of the quantity supplied of a good to a change in its own price, *ceteris paribus*.

The PES varies depending on the level of stocks and how easily they can be produced within a short period of time. Manufactured products such as toothpaste and soap are likely to have price elastic supply ( $PES > 1$ ) as firms can keep larger quantities of stock and can be produced by factories relatively quickly. This means that there is a more than proportionate decrease in quantity supplied relative to a fall in price=

On the other hand, products such handmade luxury items such as bespoke clothing require a longer period of production as the material has to be made and crafted by hand, hence is also likely to have price inelastic supply i.e.  $PES < 1$ . This means that there is a less than proportionate increase in quantity supplied with a fall in price due to the fall in demand.

The implementation of the Goods and Service Tax (GST) of 6% will increase the cost of production as part of the tax burden will fall on producers, thereby reducing supply. GST is a form of indirect, *ad valorem* tax that is charged for every unit of good sold. However, the impact on inferior goods and necessities may be less significant as the government may choose to reduce the amount of GST taxable for necessities and inferior goods.

With the changes in supply, the final impact on the various markets depends on the price elasticity of demand (PED) of the different goods and services. PED measures the degree of responsiveness of the quantity demanded of a good to a change in its own price, *ceteris paribus*. It is shown by a movement along the demand curve and is calculated by the formula:

The proportion of income spent on basic food items like rice and cooking oil is generally small, and there are few alternatives available. Hence the demand for such necessities and inferior goods are likely to be price inelastic ( $PED < 1$ ). The impact of the GST implementation will result in a less than proportionate fall in quantity demanded relative to the increase in price. In contrast, the demand for goods and services such as cars and branded imports are likely to be price elastic ( $PED > 1$ ) as the

proportion of income spent on these products are significant. The impact of the GST implementation will result in a more than proportionate fall in quantity demanded relative to the increase in price.

*(Note: In reality, GST in Malaysia is not implemented on certain necessities such as rice. Nonetheless, the student is not expected to know this and analysis related to this aspect was not penalized for being factually inaccurate)*

As shown in Figure 1 below, the overall impact of the various factors on luxury goods is a fall in equilibrium price and quantity for **luxury goods**. Demand falls from  $D_1$  to  $D_2$ , and supply falls from  $S_1$  to  $S_2$ , with demand likely to fall more than supply due to the combined impact of the tolls and fall in income. This is likely to be especially so for luxury goods and services in areas nearer to the Causeway, such as Johor, as they are likely to have a larger proportion of consumers from Singapore than areas further north.

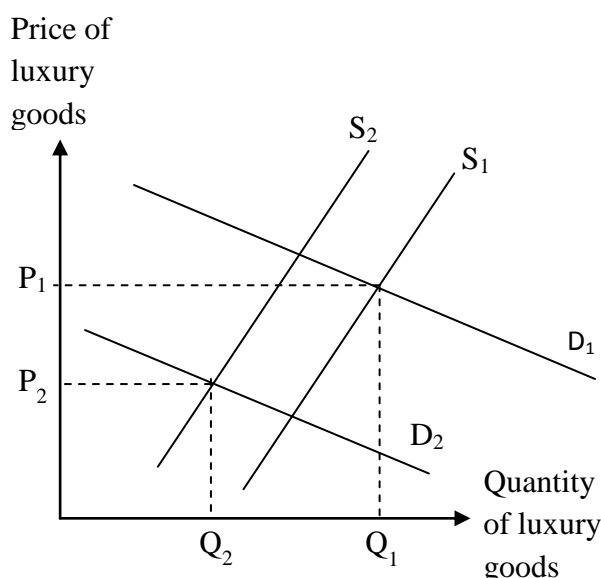


Figure 1: Luxury goods experience a fall in equilibrium price and quantity

As shown in Figure 2 below, the overall impact of the various factors on **necessities** is an increase in equilibrium price and fall in equilibrium quantity (from  $P_1$  to  $P_2$  and  $Q_1$  to  $Q_2$ ). Demand falls from  $D_1$  to  $D_2$ , and supply falls from  $S_1$  to  $S_2$ , with demand due to the relatively smaller impact of falling incomes and of the causeway tolls.

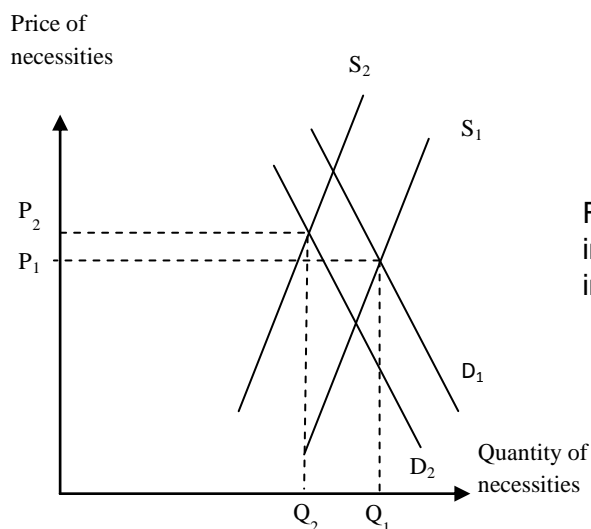


Figure 2: Necessities experience an increase in equilibrium price and fall in equilibrium quantity

As shown in Figure 3 below, the demand for **inferior goods** increases while the supply falls. As the increase in demand is likely to outweigh the fall in supply, the result is a significant increase in equilibrium price ( $P_1$  to  $P_2$ ) and a slight increase in equilibrium quantity ( $Q_1$  to  $Q_2$ ). This is likely to be the case as GST is not imposed on certain necessities in Malaysia.

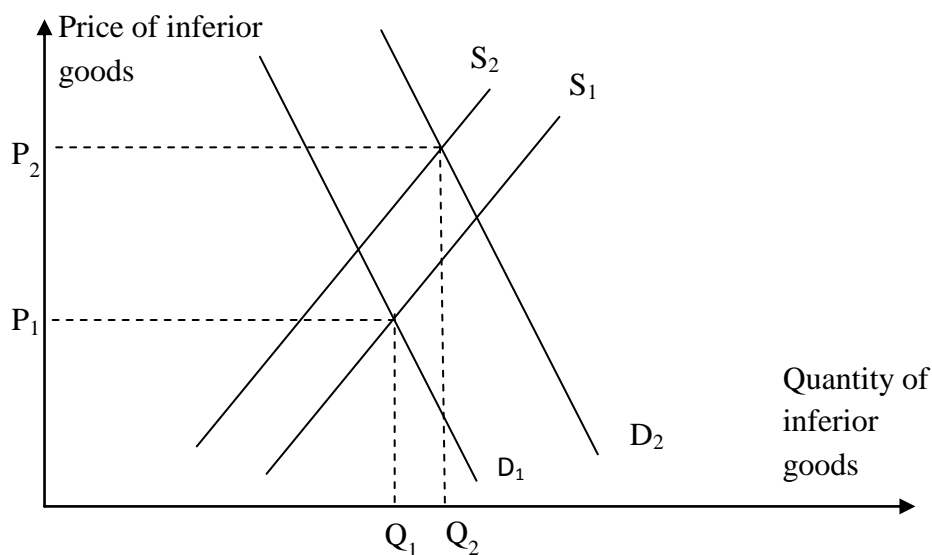


Figure 4: An increase in equilibrium price and quantity of inferior goods

Certain markets in Singapore may also be affected. Goods and services in Singapore can be seen as substitutes to those in Malaysia (especially those in Johor Bahru), hence with the cross-elasticity of demand is positive. Cross elasticity of demand measures the degree of responsiveness of the quantity demanded of good X to a change in the price of good Y, *ceteris paribus*. With the increase in prices of necessities and inferior goods in Malaysia, consumers may choose to stay in Singapore

and switch to the now relatively cheaper substitutes, such as choosing to do grocery shopping in local supermarkets and to eat at hawker centres, thereby increasing the demand for these products. The equilibrium price and quantity of such products will both increase. However, the increase in demand is not likely to be highly significant as the degree of substitutability is not very high, as consumers require much time and hassle to travel between the two places.

In conclusion, the various factors in Malaysia impact different markets differently. Luxury goods experience a fall in equilibrium price and quantity, while inferior goods experience the opposite. The equilibrium quantity of necessities fall but the equilibrium prices increase. While the extent of the changes in price and quantity in the different markets differ due to the differences in elasticities, the markets that depend heavily on Singaporean consumers and foreign direct investment are likely to be affected more than markets that do not. In the long run, the impact on different markets is also likely to vary due to changes in other factors, such as possible government intervention, and to the political scene. With a further worsening of the political situation, it is likely that demand for all goods and services in Malaysia will fall due to worsening consumer confidence thereby negatively reducing price and quantity, as well as total revenue.

2. Singapore raised excise duties on alcohol by 25% and banned alcohol from being sold in retail shops or consumed in public places from 10.30pm to 7am. The measures were deemed necessary as people often drink excessively, unwittingly harming themselves as well as causing fatal traffic accidents.
- (a) Explain the reasons for government intervention in the market for alcohol [10]  
(b) Discuss the relative effectiveness of taxation and legislation in curbing the consumption of alcohol. [15]

### **Suggested Answer for Part (a)**

The government intervened in the market for alcohol due to imperfect information and existence of external costs.

Consumers of alcohol will only consider their private marginal cost (PMC) and private marginal benefit (PMB) in consuming alcohol. The private cost of alcohol consumption includes the price of alcohol while the private benefit includes the satisfaction from consuming alcohol, such as being able to de-stress. If left to the free market, consumers would be consuming up to the quantity where their PMB equates PMC at  $Q_e$ , as shown in Fig 1 below.

As stated in the preamble, “people often drink excessively, unwittingly harming themselves”. This could be because they didn’t factor in the true health costs of excessive alcohol consumption such as the cost of possible damage to the liver due to excessive drinking. Because of the existence of imperfect information on the actual private cost to the consumers, there is a divergence between the perceived and actual PMC. Actual PMC is shown in the diagram as  $PMC'$ . Hence at the level of consumption determined in the free market, i.e.,  $Q_e$ , the PMB is lower than the actual PMC. This means that society values an additional unit of alcohol consumption less than what it costs society to consume it. The consumers’ optimal consumption of alcohol is at  $Q_p$  where PMB equates  $PMC'$ . Hence if left to the free market, there will be an over-consumption of  $Q_e - Q_p$  as a result of imperfect information. There’s therefore a need for government to intervene for this reason.

In addition, there are also negative externalities associated with alcohol consumption. Examples of the external cost are the harm/violence towards the surrounding members of the public as the drinkers become easily aggravated and lost control of themselves. The surrounding members of the public may need to bear treatment cost as a result of the assault. In addition, when those who drink drive, their negligence may result in accidents; even fatal ones, as stated in the preamble. The cost inflicted on other road users or pedestrians are the treatment cost or even cost associated with loss of lives.

Because of the external cost, there is a divergence between social marginal cost (SMC) and PMC. At the level of consumption in the free market, the social marginal cost is greater than social marginal benefit (SMB). Society values an additional unit of alcohol less than what it costs society to consume it. The socially optimum level of consumption is at  $Q_s$ , where  $SMB=SMC$ . There’s therefore a situation of over-consumption, resulting in a deadweight loss as shown by the shaded area. Society’s



welfare is not maximised at  $Q_e$ . There's a need to allocate less resource to the consumption of alcohol until the socially optimum level of consumption could be attained at  $Q_s$ . There's a need for the government to intervene to ensure this outcome.

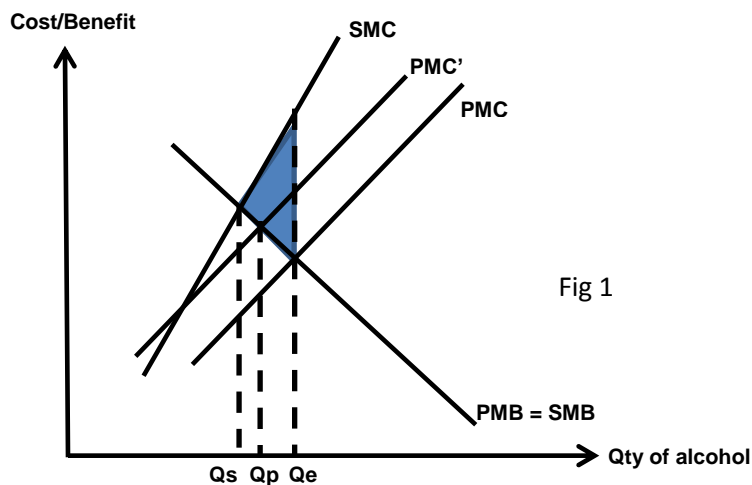


Fig 1

### **Suggested Answer for Part (b)**

#### **How taxation works:**

A tax that is imposed by the amount of the external marginal cost at the socially optimum level of consumption would increase the private marginal cost of consuming alcohol. This would reduce the consumption of alcohol to the socially efficient level and remove the deadweight loss indicated in Figure 1 earlier.

#### **How legislation works:**

The ban on the sale of alcohol from retail shops and the ban on consumption of alcohol at public places from 10.30pm to 7am directly reduces consumers' access to alcohol and reduces the likelihood of external cost being inflicted on members of the public when drinkers drink in public areas respectively, and helps to achieve the socially optimal quantity of consumption.

### **Perspective 1: Taxation > Legislation (Effectiveness of Taxation vs Limitation of Legislation)**

Taxation works with the market forces. It maintains consumer sovereignty since consumers are still able to decide where and how much of alcohol they would like to consume. However, legislation works against the free market as it forces consumers to behave in a certain manner. For example, as stated in the preamble, it is illegal in Singapore to drink in public places from 10.30pm to 7am. This measure forces consumers to drink elsewhere; they don't have the freedom to drink in public places. The banning of the sale of alcohol in retail shops also directly reduces consumers' access to alcohol during the stated hours.

Taxes can also be easily adjusted according to the level of external cost. As seen in the preamble, the government could easily adjust the tax upwards as the incidence of fatal traffic accidents increase. Changing of legislation and law however, would require more resource in dissemination of the information to the public; otherwise the people could simply claim ignorance if they are found to be breaking the rule.

The revenue from taxes would also improve the budget balance. The revenue could be used to fund public projects to create more awareness of the harm from excessive consumption of alcohol. This would be necessary to continue to curb the issue in the long run. On the other hand, legislations are costly in its enforcement. There's a need to mobilise resource such as police patrols to monitor and ensure that the legislation is adhered to. This would put a strain on the government budget instead, and perhaps the resource could have been better channelled elsewhere.

In addition, the ban only occurs during certain from 10.30pm to 7am. Consumers will still be able to purchase the alcohol prior to the ban and consume the alcohol in private places during the ban, and subsequently go to public places. Thus, the amount of alcohol consumed may not be reduced significantly and the external costs associated with the consumption of alcohol may not be reduced.

### **Perspective 2: Taxation < Legislation (Effectiveness of Legislation vs Limitation of Taxation)**

However, there are also merits of legislation over taxation. Legislation would directly ensure that the socially optimum level of alcohol consumption could be attained. By banning consumption of alcohol in public areas from 10.30pm to 7am, consumers will not be able to consume alcohol at public areas at the stated hours, and since most of the external cost to third parties are inflicted during the stated hours, the external cost such as disturbances on members of the public is directly curbed with certainty; given proper enforcement of the law. On the other hand, there's uncertainty in the outcome of taxation, as whether the socially optimum level of consumption can be obtained depends on the price elasticity of demand for alcohol. Changes in the value of PED would mean that the government's estimated tax rate may not help in bringing consumption to the socially optimum level of consumption.

In addition, if the extent of external cost is large, it is administratively easier to just ban the activity. It is more cost effective to ban the sale of takeaway alcohol from 10.30pm, and ban the consumption of alcohol in public areas rather than to deploy resources in order to decide on the right amount of tax for the high external cost inflicted. Imperfect information on the true value of the external cost and the difficulty in assigning a monetary value to the intangible cost such as the psychological hurt on third parties assaulted by the drinker would also make it difficult to decide on the right taxation amount. Hence there could be incidences of over-taxation which could worsen the extent of deadweight loss to society.

**EV:** The Singapore government needing to raise taxes by 25% show that the previous tax estimation was inadequate. It is indeed difficult to estimate the extent of external cost and the socially optimum level, what more the tax amount required to achieve the socially optimum level. Hence while increases in taxation is beneficial in improving government's budget balance so that it has more resources to deal with the problem, an alternative measure such as the legislation also needs to be

put in place to better keep the 3<sup>rd</sup> party effects of alcohol consumption under control. The revenue obtained from the taxes could be used to fund the monitoring cost of the legislation.

**EV:** In the long run, the government may need to reduce its extent of regulation and taxation and rely on provision of information to change drinking habits of the population. Improvement in provision of information to the public enables them to factor in the true costs of consumption to themselves and their family members and would hence be a more sustainable way to curb this problem in the long run, instead of continuing to drain the government resource on enforcement of legislation.

3. (a) Explain why firms may practise price discrimination domestically and internationally. [10]  
 (b) Discuss whether price discrimination is always undesirable from a society's point of view. [15]

### Suggested Answer 2(a)

**Price discrimination occurs when a producer charges different prices for different units of the same commodity for reasons not associated with differences in cost.** There are three types of price discrimination – first-degree, second-degree, and third-degree price discrimination though second- and third-degree price discrimination are more commonly found.

To understand why price discrimination is practiced both in the domestic and overseas markets, it is necessary to start from the objectives of firms.

Firms may practice price discrimination to **increase their profits**. **Profits are defined as total revenue less total cost.** To maximize profits, the firm will set the profit maximizing level of output at where marginal revenue (MR) is equal to marginal cost (MC). Such firms practicing price discrimination are likely to wield significant market power and are hence price-setters.

**Price discrimination allows the firm to earn even more supernormal profits that would not have been possible as a single-price monopolist.** Consider a monopolistic firm practicing first-degree price discrimination in a domestic market. For any given level of output, this discriminating monopolist will receive higher profits than if it charges a profit-maximising single price. This ability to charge multiple prices gives the firm the opportunity to capture all of consumer surplus, converting it into more profits for itself.

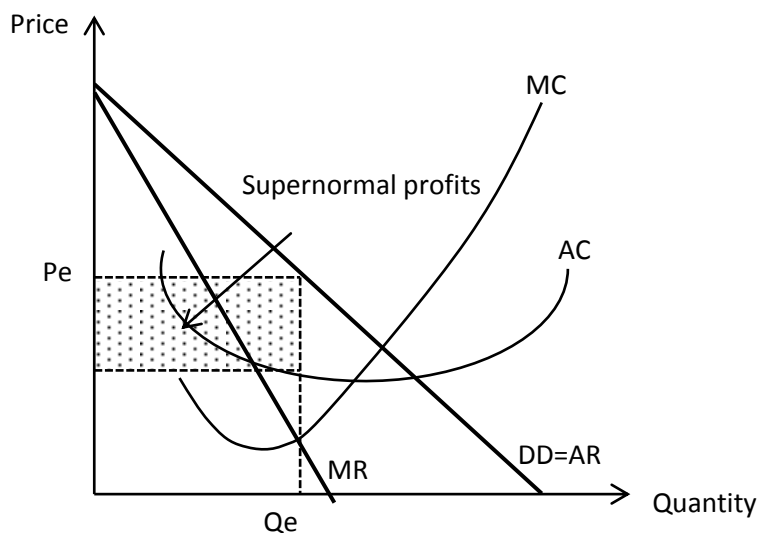


Figure 1: Single price monopolist

In Figure 1, the monopolist firm charging a single price at the profit-maximizing level of output  $Q_e$  would have enjoyed supernormal profits illustrated by the shaded area. But the monopolist firm charging a different price for every unit of output sold would have attained even more supernormal profits (Figure 2). This is possible since the firm is able to charge the maximum possible price for each unit which enables it to capture all available consumer surplus for itself. Fortunately in practice, first-degree discrimination is rare.

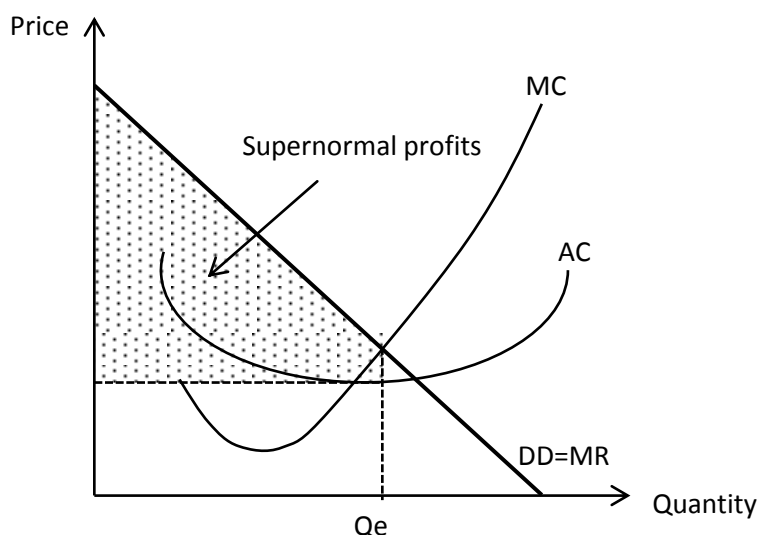


Figure 2: First-degree price discrimination

Firms may also practice price discrimination to **improve social welfare**. Such firms are likely to be state-owned firms or private firms who have an obligation of meeting certain social objectives. These firms generally provide goods or services which are deemed to be merit goods or which are essential to the well-being of the people e.g. education, health care, public transport, water and electricity. Consider public transport providers practicing third-degree price discrimination in the domestic market.

Public transport providers divide their total market into two sub-markets – concessionary and non-concessionary. Concessionary rates are often offered to elderly, students, people with disabilities and low-wage workers while everybody else pays non-concessionary rates. This helps to improve social welfare. From a financial viewpoint, the practice of doing so also allows the public transport providers to **earn more revenue**. As transport costs take up a larger proportion of the income of low wage workers, elderly and people with disabilities, their demand for public transport is relatively price elastic. Lowering the fare for this group of commuters will result in a more than proportionate increase in quantity demanded and hence an increase in total revenue for the provider. On the other hand, transport costs take up a smaller proportion of income of normal working adults, their demand for public transport is relatively price inelastic. Raising the fare for this group of commuters will result

in a less than proportionate decrease in quantity demanded and hence still an increase in total revenue for the provider.

Firms may also practice price discrimination to **expand their market share in overseas markets**. **Dumping** is where exports are sold at prices below the marginal cost of production. This is a form of international price discrimination because consumers in the domestic market of these firms will pay a higher price than those in the overseas market. To drive out competitors in the overseas markets, the firm temporarily lowers the prices of its goods – a practice known as **predatory dumping**. The purpose of doing so would be to gain monopoly power in these countries. Once local competition is driven out, the exporting firm will monopolize the foreign market and raise prices. There are examples of predatory dumping historically, such as the German chemical industry's attempt to drive Dow Chemical out of business by dumping bromine into the U.S. market in the early 1900s.

In conclusion, the motives for practicing price discrimination are generally for the promotion of self-interests of firms. Whether doing so will ultimately be undesirable from the society's point of view, this will be discussed in part (b).

### **Suggested answer 2(b)**

As defined in part (a), price discrimination occurs when a producer charges different prices for different units of the same commodity for reasons not associated with differences in cost.

**Price discrimination is undesirable from the society's point of view largely due to the reduction of consumer surplus which represents a loss of consumer welfare.** The most extreme case is that of first-degree price discrimination where 100% of consumer surplus is extracted by the producer. Although this merely involves a transfer of surplus from the consumers to the producer and there is no additional deadweight loss incurred, nevertheless there is greater inequity due to transfer of income from consumers to monopolist. The monopolist benefits at the expense of the consumers, and this, from the society's point of view, should be prevented.

Higher profits earned by the discriminating monopolist may lead to **more complacency and X-inefficiency**. The monopolist may have less incentive to minimise cost since it can survive comfortably even without producing at the lowest possible cost. The firm may no longer seek to produce a given output at the lowest possible cost. It can incur extra expenses due to over-staffing, spending on unnecessary prestigious buildings and fixtures, over-generous perks for senior management, or from lack of motivation to use the most efficient production methods. Without competitive pressure on profit margins, cost controls become lax and goals other than profit-maximisation may be pursued. Hence, from society's point of view, it is likely that a discriminating monopolist is productively inefficient.

**Predatory dumping**, an international form of price discrimination, is also undesirable from the society's point of view due to the harmful effects caused to the importing country. The importing country may get the benefit of cheap imports in the beginning. But after competition ends and the

discriminating monopolists sells the same good at a high monopoly price, the importing country incurs a loss because it now has to pay a high price. In addition, when the domestic industries of the importing country are unable to bear the competition and close down, this leads to high unemployment. Such market distortions also go against the Theory of Comparative Advantage as the monopolist may not truly have comparative advantage but is merely incurring short-term losses to under-price its rivals. Protection from such unfair competition in the form of tariffs or quotas would hence be justified based on the market distortions which can result in long-term inefficiencies.

In addition, such aggressive tactics via predatory dumping can also **act as a barrier to entry** to keep out new entrants, exerting less competitive pressures on the firm who is less likely to seek cost-efficient methods to stay relevant and to engage in innovation. Arguably, however, the opposite may also happen: price discrimination may actually make a market more contestable. The ability of a firm to price discriminate may force producers to be more efficient to be able to stay in the market, resulting in increased productive efficiency.

**However, price discrimination can also be desirable from the society's point of view. Output under price discrimination will generally be larger than under a single-price monopoly.** A monopoly firm that must charge a single price for a product will produce less than under price discrimination because it knows that selling more depresses its price. Price discrimination allows it to avoid this disincentive. In the case of first-degree price discrimination, in which every unit is sold at a different price, the MR curve will now be identical to the demand curve. The monopolist will produce every unit for which the price charged is greater than or equal to its marginal cost. It will therefore produce up to the quantity of output where  $MC = MR$  (the same quantity of output as the firm in perfect competition). As such, more goods are produced. This is desirable for society as the "right" amount of goods, in the case of first-degree price discrimination, is produced. Moreover, the price at the last unit of output produced is equal to its MC. As such, first-degree price discrimination also achieves **allocative efficiency** at the last unit of output produced.

**The discriminating monopolist may produce goods or services which would otherwise not be produced by a single-price monopoly.** Assume that there is a demand curve for a product which many people will like to purchase, and average cost is higher than average revenue at all levels of output. Hence, no single price charged can allow the monopoly to cover total costs and nothing will be produced by a single-price monopoly despite there being a demand for the product. However, it is possible for a price discriminating monopolist to cover costs of production, say at an output of OQ (Figure 3). At that level of production, total cost = area OCBQ. With first-degree price discrimination, total revenue = OFEQ (area under the demand curve). Since area ACF > ABE, this implies that total revenue is greater than total cost. As a result, the monopolist gains a profit which would not be possible without price discrimination. The consumer gains by being able to consume a good which otherwise would not be available.



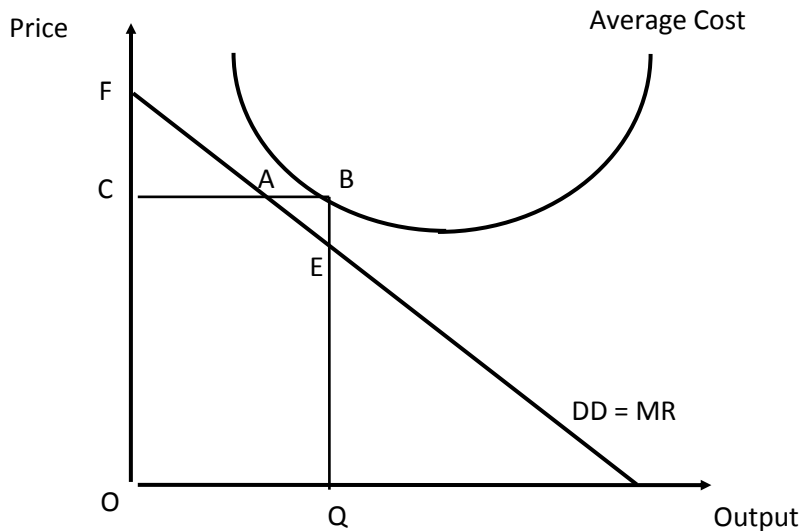


Figure 3: First-degree price discrimination

Unfortunately, these benefits made possible with first-degree price discrimination are unlikely to occur since first-degree price discrimination is very rare in the real world. The producer would need to know every single consumer's reservation price in order to practice first-degree price discrimination.

**The discriminating monopolist can charge a lower price for some people which would otherwise not be possible under a single-price monopoly.** In third-degree price discrimination, those charged the lower price will consume more of the good and in some cases they may be able to obtain a good or service they would otherwise be unable to afford if it were sold at a single (profit maximising) price, for example discounted medical fees for the poor and concessionary bus fares for senior citizens. Although those who pay higher prices may complain, but if by being more able to pay higher prices, they help subsidize the poor, this brings about greater level of equity.

Price discrimination can also **prevent over-consumption of resources at certain times and under-consumption of resources at other times** by managing demand more effectively. If there is no third-degree price discrimination practiced for public transport, trains and buses running at peak hours would be more overcrowded, generating congestion and other negative externalities. Price discrimination gives an incentive for some people to go much earlier or much later in the day. This means that those who have to travel at rush hour benefit from less congestion. The same can be said for airlines. Without lower airfares offered during non-peak seasons, planes would be flying at less than full capacity, wasting fuel and other valuable resources. Therefore, from the society's point of view, price discrimination can help to maximize the use of resources more efficiently.

**Higher profits for the discriminating monopolist can also be re-invested into research and development which leads to product improvement and cost reductions.** The extra profits that the firm earns may also allow it to expand and reap economies of scale in the long run. With the ability to exploit economies of scale, consumers can eventually benefit from lower prices as well.

Finally, predatory dumping is **extremely unlikely** since trade liberalization, reduced transportation costs, and increased competition in world markets have reduced the ability of firms to pursue international price discrimination and create worldwide monopolies, especially in undifferentiated intermediate product markets, which are the most likely targets for a dumping strategy. It is more likely to be **sporadic or intermittent dumping** adopted under exceptional or unforeseen circumstances when the domestic production of the good is more than the target or there are unsold stocks of the good even after sales. In such a situation, waste can be minimized. Dumping can also force industries or companies in the foreign markets (importing markets) to become more competitive and innovative. If they believe the dumping may continue for the long-term, they will have no choice but to look for ways to reduce costs or improve quality to differentiate their product. Either way, this works to benefit the consumers.

In conclusion, price discrimination can be both advantageous and disadvantageous. No doubt, price discrimination inevitably will reduce consumer surplus and raise producer surplus. But what matters more is to ensure that the price discriminating firm uses its increased profits suitably to benefit consumers in the long run. To ensure that this happens, close government monitoring and competition regulation may be needed.

4. Businesses cannot rely on low-cost, low-skilled foreign manpower to achieve its economic aims. Thus, Singapore has reduced its foreign manpower quota to encourage companies to invest in technology and to bring about a more equitable and efficient allocation of resources.

**LABOR COST, LABOR PRODUCTIVITY AND GDP GROWTH**

	2011	2012	2013	2014
	Percentage change			
<b>UNIT LABOUR COST INDEX OF OVERALL ECONOMY</b>	1.7	3.1	2.4	3.5
<b>LABOR PRODUCTIVITY</b>	2.3	-0.5	0.3	-0.8
<b>GDP GROWTH</b>	6.0	3.0	4.0	3.0

Source: Singstat.gov.sg and *Mof.gov.sg*, last accessed 29 July 2015

Discuss the view that improving labour productivity alone will achieve the economic aims of Singapore. [25]

**Suggested Answer**

The economics aims of a government include attaining both microeconomic and macroeconomic objectives. Microeconomic objectives include achieving economic efficiency and a more equitable distribution of income. Whereas, macroeconomic objectives include achieving sustainable economic growth, low rates of unemployment, price stability, as well as a healthy balance of payments.

Improving labour productivity, which refers to the output per worker per hour of work or output per man-hour, is an important factor to achieve the above aims though there are limitations and trade-offs that could result. Besides, there are other policies that the Singapore government can implement to achieve these economic aims. These include, adopting a modest and gradual appreciation stance to mitigate inflation and the signing of more FTAs to promote economic growth.

**Improving labour productivity can help to achieve both actual and potential growth.** Increase in labour productivity can be achieved via training and upgrading of skills. This can be done through measures such as **subsidy on education** & training to equip workers with new knowledge/skills, tax incentives/subsidies to encourage firms to upgrade existing physical capital & do R&D etc. so that the more efficient capital or production processes can enable the labour to increase its productivity too. For example, the Workforce Development Agency (WDA) in Singapore provides a range of training programmes which aims to build up the foundational and industry-specific skills. The Singapore government has also committed \$2.5 billion over the period of 2010 to 2015 to schemes like Continuing Education and Training (CET) to drive productivity growth with a target of achieving 2% productivity growth per annum. Additionally, the Singapore government has been tightening the supply of foreign labour to achieve productivity driven growth, especially in labour-intensive jobs such as cleaning, transport and F&B. The fall in labour supply would motivate firms in these industries to use technology and improve processes that help to increase labour productivity and decrease cost of production at the same time.

Since reductions in unit cost of production would increase the SRAS, it will help to dampen cost push inflation as well as create actual growth. The increase in labour productivity also increases the productive capacity of the economy, thereby helping to achieve potential growth and dampens DD-pull inflation in the long run. This policy is particularly effective as it **targets the root cause of the problem**. From the preamble, Singapore has a problem of low productivity (ranging from -0.8 to 2.3% from 2011 to 2014). More importantly, the data seems to suggest that for years with a fall in labour productivity, there was a slower increase in actual growth. This implies that productivity and actual growth are positively related. Thus, targeting higher productivity can lead to higher actual growth for Singapore.

Increasing labour productivity can also translate into higher export price competitiveness as cost of production is lowered. Given that demand for our exports is price elastic, the lowering of the price of exports will lead to a more than proportionate rise in quantity demanded, translating into higher export revenue, improving the balance of trade and balance of payments.

With greater availability of skilled labour, Singapore might become more attractive to FDI, and this can help **to reduce unemployment too**. The inflow of FDI can increase AD, real national income and real national output, thereby increasing the derived demand for labour and **increasing the domestic employment level**.

However, if labour productivity is achieved through improving capital and/or technology and if capital is still more efficient than labour, unemployment may not be reduced as firms may prefer to substitute labour with capital. Additionally, if AD does not increase as much as AS from labour productivity, there may also be unemployment.

Also, if improvement in labour productivity is uneven across sectors/industries, it may lead to greater income inequity. For industries e.g. cleaning or food & beverage industries where labour productivity is not easily increased, wages may remain stagnant while wages increase in other industries where it is easier to improve labour productivity. Hence income inequity could worsen.

Improving labour productivity in itself is also not easy to achieve. This is because; it requires education and retraining which may not be effective if workers are not receptive. From the table above, though CET was implemented from 2010, its success has largely been limited with productivity falling in certain years. Older workers are the main group that requires training, yet their mindset could be hard to change. This problem is compounded with Singapore facing an ageing population, and hence there are older workers who may be less receptive to training and retraining. To counter this, in Budget 2015, the Singapore government has advocated for 'lifelong learning' and made systemic changes to the educational landscape and introduced the Skillsfuture package to encourage lifelong learning for all Singapore Citizens. Thus in the future, we would expect to see a change in the receptiveness of workers and this limitation will be less pertinent. Nevertheless, this policy may only be more effective in the LR but not in the short run.

Programmes to improve labour productivity will also incur opportunity cost as government spending on providing subsidies for training and retraining will mean less money for other social programmes such as healthcare and education. However, this is not a big problem for Singapore as the Government has

strong reserves due to its prudent and disciplined approach in keeping a balanced budget annually.

In the case of tackling imported inflation, improving labour productivity will not be very effective because first, it does not address the root cause of the problem. Secondly, imported FOPs take up a large portion of production costs in Singapore. Thus, even though improving labour productivity can help to reduce cost of production, it cannot fully mitigate the effects of imported inflation. Thus, improving labour productivity alone cannot fully achieve the economic aims of Singapore. There is thus a need to use complementary policies such as the exchange rate policy.

The Singapore government has adopted a modest and gradual appreciation stance to mitigate **inflation**. As Singapore is a small economy with few natural resources and imported items make up a fairly large proportion of the average consumer's spending, an appreciation of the Singapore dollar (SGD) means that each unit of SGD is able to purchase more units of foreign currency, thereby reducing the domestic price of foreign imports. **This helps to alleviate and address the root cause of imported inflation.**

Besides improving labour productivity, the Singapore government has pursued a **policy of freer trade** by signing more Free trade agreements (FTAs) to achieve economic growth beyond its domestic economic resources. Singapore is the world's most trade dependent nation. In 2013, Singapore had the world's highest trade to Gross Domestic Product (GDP) ratio, with imports and exports amounting to about 3.5 times the value of the GDP. Singapore, with a small domestic market, is able to benefit from the signing of FTAs as it allows us to **tap into foreign markets**. This provides producers with an enlarged market for their goods and leads to an increase in production. The signing of FTAs also allows for **more efficient allocation of resources** as a result of specialisation and trade; Singapore is able to focus on the production of goods that are capital- and knowledge-intensive in nature, while importing other goods from countries in our trade network. There could also be an increase in foreign direct investment (FDI) into Singapore as a result of the signing of more FTAs.

In conclusion, increasing labour productivity is an important policy adopted by the Singapore government as it helps achieves the different economic goals for Singapore. Given that Singapore is facing an ageing population which will lead to a fall in the availability of resources and raise the cost of labour in future as the supply of workers decreases, increasing productivity is a good long term strategy for Singapore.

Furthermore, as suggested by the Tinbergen rule, in order to achieve a certain number of policy targets, it is necessary to control an equal number of policy instruments. Thus, in this case, to achieve the different economic goals, the government can use a combination of policies of increasing productivity, modest and gradual appreciation stance to mitigate imported inflation and demand pull inflation and trade policies to encourage freer trade to stimulate growth.

5. China recorded GDP growth of 7.7% in 2013, its lowest in the last decade, and this trend is expected to stay.

- (a) Explain the impacts of the above development on price stability in Singapore. [8]  
(b) Discuss whether domestic or external factors are more likely to limit the effectiveness of exchange rate policy in achieving price stability in Singapore. [17]

**Suggested answer 5(a)**

The slower rate of growth in China would mean a smaller increase in China's national income. This would translate to a smaller increase in China's demand for exports from its trading partners, including exports from Singapore. China is Singapore's third largest export market and the slow-down in demand would lead to a smaller increase in Singapore's net exports and consequently aggregate demand (AD). Aggregate demand refers to total spending on goods and services and is made up of consumption expenditure (C), investment expenditure (I), government expenditure (G) and net exports (X-M). The Singapore economy is operating near full employment with a low unemployment rate of below 3% in 2013. The smaller increase in AD would mean less severe demand-pull inflation for Singapore.

Furthermore, the slower growth in China and the expectation that this trend would stay also means greater uncertainty in business outlook. China's slower rate of growth has a profound impact on the global economic outlook because it is the world's second largest economy and this is against the backdrop of slow recovery in the US and the debt crisis in the Eurozone. Global economic outlook would likely be uncertain and less optimistic, causing both domestic and foreign investment to fall and in this case, AD would fall and there would be a fall in demand-pull inflation.

The slower growth in China would also have an impact on cost-push inflation in Singapore. As the slower growth would also mean a slow-down in production in China, there would be a considerably smaller increase in the demand for factors of production such as energy and metals, leading to only moderate increase in prices of such factors of production. This would mean lower cost-push inflation for Singapore, which is significant as Singapore is heavily dependent on imported raw materials and intermediate goods for its manufacturing sector.

Overall, the slower rate of growth in China and expectation that the trend would stay would lead to greater price stability in Singapore.

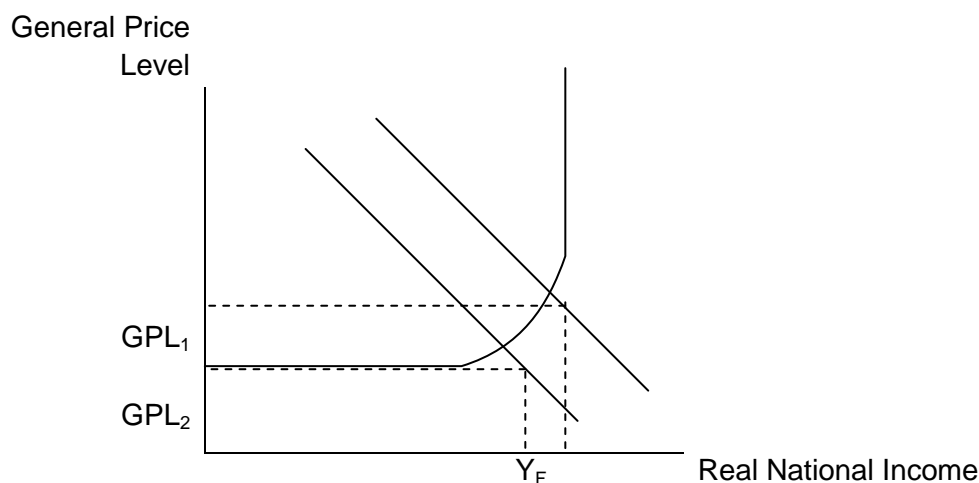
**Suggested answer 5(b)**

The Monetary Authority of Singapore (MAS) adopts a policy of modest gradual appreciation of the Singapore exchange rate to achieve price stability in Singapore. This will control both cost-push inflation and demand-pull inflation.

Appreciation of the Singapore dollar will lead to an increase in the foreign price of exports and a fall in the domestic price of imports. Singapore is heavily dependent on imported raw materials as well as final goods. The fall in the domestic price of imports would lower the cost of imported raw

materials, especially critical factor inputs such as crude oil, thus helping to reduce cost-push inflation.

Furthermore, as the Marshall-Lerner condition (MLC) holds, where  $PED_{\text{exports}} + PED_{\text{imports}} > 1$ , due to availability of substitutes in foreign markets, net exports will fall, causing AD to fall, as shown by the leftward shift of the AD curve from  $AD_1$  to  $AD_2$  and consequent fall in the general price level from  $GPL_1$  to  $GPL_2$ , keeping inflation under control.



**Figure 1: Effects of appreciation of the exchange rate**

Notwithstanding the above, domestic and external factors could limit or even negate the effectiveness of the exchange rate policy in achieving price stability in Singapore.

For one, the Singapore government's policy of growing the service sector as an important engine of growth has limited the effectiveness of the exchange rate policy in achieving price stability. This is because services have relatively lower import content as compared to manufactured exports and thus the service sectors do not benefit from lower imported input prices as manufactured goods do. In other words, appreciation of the SGD would not reduce cost-push inflation significantly.

Secondly, sufficient foreign reserves are needed to intervene in the foreign exchange market to bring about an appreciation. This is, however, not a major limitation for Singapore because of the BOP surplus that it had accumulated.

In addition, the MLC may also not hold in the short run. As consumers' taste and preferences may be insensitive to changes in prices in the short run and it takes time for firms to make adjustments to their output due to business contracts,  $(X-M)$  may instead increase and worsen demand-pull inflation. Furthermore, other domestic factors may even negate the effectiveness of the exchange rate policy in achieving price stability. High wage cost is one such domestic factor. With the tightening of foreign labour into Singapore coupled with limited improvement in labour productivity, wages have increased, leading to wage push inflation in Singapore. This will reduce the short-run



aggregate supply (SRAS), offsetting the effectiveness of the exchange rate policy in controlling inflation. However, the extent is not likely to be large due to tripartism in Singapore. The National Wage Council provides guidelines for wage increases that are in line with productivity growth over the long term to ensure sustainability and also to not erode the competitiveness of Singapore's economy.

Notwithstanding the above, changes in external conditions would also limit the effectiveness of exchange rate policy to achieve price stability in Singapore. Singapore lacks natural resources and is heavily dependent on imported raw materials. Therefore, any supply shocks to critical factors of input will severely increase our cost of production, lead to cost-push inflation and limit the effectiveness of our modest and gradual appreciation in achieving price stability. For example, the prices of crude oil and food increased sharply in 2013 and led to higher cost of production in the manufacturing and food and beverage industries in Singapore. MAS kept to its gradual and modest appreciation stance which helped to control cost-push inflation but did not further tighten monetary policy by increasing the rate of appreciation either as that would reduce net exports and cause AD and consequently real national output to fall significantly. Hence there is a limit to how much the MAS can appreciate the SGD to achieve price stability.

In addition, the exchange rate of other countries may have appreciated relative to the Singapore dollar and this would again cause the domestic price of imported inputs to increase. This would increase cost push inflation in Singapore and limit the exchange rate policy in achieving price stability.

Furthermore, in times of strong global economic growth, when the national income of our trading partners increases, demand for Singapore's exports will also increase. As net exports is a large component of AD in Singapore, the increase in AD will be significant and appreciation of the SGD may not be sufficient to control demand-pull inflation and achieve price stability.

Overall, both domestic and external factors are significant in limiting the effectiveness of exchange rate policy in achieving price stability in Singapore. The relative significance depends on several factors such as the root cause of the inflation, the magnitude of changes in domestic and global conditions as well as the nature of the Singapore economy.

The small and open nature of the Singapore economy may mean that external factors are more likely to limit the effectiveness of exchange rate policy to achieve price stability in Singapore. This is because our growth is intrinsically tied to external demand and our factor inputs are mostly imported, thus making Singapore more vulnerable to changes in external conditions. As we have seen, it is also not sufficient to use the exchange rate policy alone to achieve price stability. Therefore, the Singapore government supplements the exchange rate policy with supply-side policies to increase the SRAS as well as the productive capacity of the Singapore economy to ease inflationary pressure. Together, they effectively achieve price stability in Singapore regardless of domestic or external factors that contribute to inflation.

6. The Trans-Pacific Partnership (TPP) is a proposed trade agreement that aims to expand the flow of goods, services and capital among its members. Its critics, however, warned of damage to domestic workforce from outsourcing and offshoring and are clamouring for more protection for workers.  
Assess the economic case for these two approaches amidst the current global economic uncertainty. [25]

***Suggested answer***

With the expansion of the flow of goods, services and capital among its members, the Trans-Pacific Partnership (TPP) would augment the trend towards globalisation and free-trade. A free trade agreement (FTA) is a legally binding agreement between two or more countries to bring about closer economic integration. Its critics are however, advocating for protectionism to maintain home employment.

There is strong economic case for the TPP as it helps countries achieve their economic goals, which is made difficult by the current global economic uncertainty. Firms and households across countries have cut spending in view of the uncertain economic outlook. This has led to fall in outward investment and demand for exports from trading partners. The fall in export revenue would lead to a fall in aggregate demand (AD) and if the fall in AD persists, firms would cut production and lay-off workers.

This is where the TPP may be able to mitigate the negative impact of the global uncertainty. The TPP connects member countries to major economies and new markets and enhance trade and investment flows through the removal of trade barriers and improvement to custom procedures. With the removal of trade barriers, a greater degree of specialisation based on comparative advantage (CA) is encouraged when countries specialise and trade in industries which they have CA in, shifting consumption away from high-cost producers towards low-cost producers. The theory of CA states that so long as a country has comparatively lower opportunity cost in the production of a good, specialisation and trade can benefit itself and its trading partner.

The access to an enlarged market afforded by the TPP and specialisation according to CA will enable countries to reap the gains of improved resource allocation and economies of scale, resulting in lower average cost and higher efficiency and thus a lower price for consumers. Consumers no longer have to pay high prices for domestically produced goods in which the country has a comparative disadvantage. The goods can now be obtained more cheaply from other members of the TPP. In return, the country can export goods to them in which it has a comparative advantage in. World output increase and more trade takes place. Thus free trade is needed to bring up the level of world output which would otherwise have declined because of the global economic uncertainty.

The easier access to foreign markets could also lead to an increase in foreign direct investment and hence, an increase in the level of income, employment and standard of living for member countries. The TPP facilitates the inflow of FDI and also enables member countries to gain higher export revenue from producing and exporting to an enlarged market. The increase in investment and net

exports will increase AD. This will offset the fall in AD from reduced consumption and investment expenditure due to the economic uncertainty that reduced households' and firms' confidence. The increase in FDI also allows for an increase in capital goods leading to greater productive capacity in the economy. There can also be a transfer of technology and expertise together with the inflow of foreign capital. In the long run, investments also help to improve productivity levels and thus lead to potential growth. Thus the increased trade and capital flows between member countries help to mitigate the negative impact of the global economic uncertainty.

Another good reason for the TPP is that it will bring about increased competition between member countries as trade barriers are removed and foreign firms could enter domestic markets more easily. Increased competition puts pressure on domestic firms to be more cost efficient and to engage in research and development to improve product quality and production processes. This will stimulate efficiency, encourage investment and reduce monopoly power. If cost savings are passed on to consumers in terms of lower prices of goods, it will help to ensure that there is still demand for their exports despite the global economic uncertainty.

Notwithstanding the gains that the TPP could bring to its member countries, there are some calls for protectionism amidst the global economic uncertainty. Protectionism refers to any action that the government may take to influence market forces to provide an advantage to domestic industries over foreign producers.

The current global economic uncertainty has made the achievement of macroeconomic goals difficult. As firms and households across countries cut spending, there will be a fall in demand for exports from trading partners. An export-led decline for countries which rely heavily on export demand would lead to a significant fall in national income and demand-deficient unemployment. As net exports fall and aggregate demand (AD) falls, firms have unplanned increase in stock levels which will prompt them to cut production in the next cycle. If the uncertainty persists and demand remains low, firms would have to retrench workers because of a lack in global demand for their goods rather than a loss of comparative advantage. Thus at this point, they cannot enjoy the benefits of trade. In such a case, protectionist measures are used to ensure that income is spent on domestically produced goods to prevent massive unemployment in the country. For example, the government may impose tariffs on imports which would make imports more expensive. This will cause a fall in the quantity demanded of imports as consumers switch to the cheaper domestically produced goods. This will maintain the level of domestic production and protect home employment. Otherwise, massive unemployment would cause a further drop in consumer and investor confidence, leading to a fall in consumption and investment expenditure and consequently fall in AD, deepening the uncertainty.

Furthermore, with global economic uncertainty, prevalence of dumping may increase. With the fall in AD, firms are likely to have excess stock which they may try to sell in overseas market at prices below their marginal cost of production. Domestic firms which are unable to match the lower prices would be driven out of business and workers would be retrenched. Thus protectionism may be justified in such circumstances to protect home employment

Moreover, free-trade such as that proposed by the TPP could potentially bring about negative impact on economies, chiefly on unemployment, and worsen the already higher level of unemployment caused by the global economic uncertainty.

The TPP would lead to increased labour and capital mobility. Developed member countries with higher wage cost, such as the US and Japan may offshore their lower-end production processes to lower-wage countries such as Mexico and Peru to lower their cost of production and boost their exports price competitiveness. However, this will lead to loss of job opportunities for domestic workers and if they lack the skills to take on jobs in other industries, they face structural unemployment.

The increased competition afforded by the TPP could also lead to unemployment. Smaller domestic industries in some member countries may be unable to compete effectively against the larger MNCs, in terms of prices or quality of their products. Domestic firms which are unable to compete will have to leave the industry. Domestic workers are laid off and if they do not have the skills to take up jobs in other industries, structural unemployment will result. In view of the possible adverse impact on unemployment, protectionist measures are used to protect domestic industries and hence employment.

This is especially undesirable for a country like Japan which exports cars and various electronic products to the world economy. If they do not adopt protectionist measures, they will face massive unemployment. This is because of a possible large fall in demand as the YED value is likely to be greater than 1. This means a fall in world income will lead to a more than proportionate fall in demand for such luxury goods, leading to a large increase in demand deficient unemployment. Therefore, there is a need to adopt protectionist policies to protect local employment.

Amidst the uncertainty, governments may try to identify and develop new growth areas. Thus in the short term, protectionist measures to protect infant industries with potential comparative advantage may be a valid reason. A country may have a potential comparative advantage in a certain industry i.e. a new industry (infant industry). However, it cannot compete with the established foreign industries due to a lack of economies of scale that the rivals enjoy. At the initial stage of operation, the infant industry faces a high initial cost of production as it has only a small share of the market. Thus, establishing an infant industry can be quite difficult in the early years, especially if the new industry faces keen competition from a long established firm operating at lower costs in the international market. If the infant industry does have the potential comparative advantage, then protection may well be justified as it means the development of an export revenue earning industry. The future increase in net exports from the infant industry would increase aggregate demand bringing an increase in national income. This would provide long term employment and eventually economic growth. Examples of infant industries in Asia include electronics in Taiwan, automobile industry in the early stage of Japan's economic development and shipbuilding in South Korea. .

In conclusion, there are strong economic reasons for adopting a free-trade stance on trade as well as

valid reasons for protectionist measures.

However, by protecting their industries and employment in the midst of the global economic uncertainty, countries are merely passing their problem on to their trading partners who in turn may retaliate, leading to further contraction in world trade and fall in global income. On the other hand, the inter-connectedness of world trade means that when a recovery does begin, the flow-on benefits to all countries will spread quicker without protectionism.

Protectionism, even of infant industries with potential CA, should only be a temporary measure. The reality however, is that once a tariff is imposed, it is not easily removed. Thus, protection should not be indiscriminately given to local industries.

Free-trade such as that proposed by the TPP would impact member countries differently. Some would gain more while some would gain less, depending on their relative CA and also the nature of their economy. Small and open economies dependent on external demand and investment would gain more from free trade than protectionism. In addition, member countries which are able to correctly identify their CA and seize the opportunities afforded by the TPP while putting in place appropriate policies to mitigate the threats would gain more. Policies that could mitigate the challenges include supply-side policies to equip workers with continued skills upgrading, as well as grants to encourage product and process innovation to build comparative advantage and improve cost efficiency of production.