	PRELIMINARY EXAM 2017
	Economics JC2 H1 (8819/01)

PAPER 1

Tuesday
12 September 2017
08:00 – 11:00

TIME : 3 hours

INSTRUCTIONS TO CANDIDATES

Do not open this paper until you are told to do so.

Write your name, class and name of economics tutor in the space provided on the writing paper.

Do not use staples, paper clips, glue or correction fluid/tape.

Section A

Answer **all** questions.

Section B

Answer **one** question.

The number of marks is given in the brackets [] at the end of each question or part question.

Write your answers on the writing papers provided. If you use more than one sheet of paper, fasten the sheets together.

You are advised to spend several minutes per question reading through the data and questions before you begin writing your answers.

There are 8 printed pages including this cover page

SECTION A

Answer all questions.

Question 1

Trade Slump and Deflation

Extract 1: UK slips into deflation as prices fall 0.1%

The UK has officially slipped into deflation for the first time in more than half a century, but economists and policy makers are not concerned, saying that a brief period of gently falling prices is more likely to help growth than harm it.

The UK has been teetering on the brink of deflation for several months because of the slide in global oil prices, falling household incomes and the strength of sterling, which has reduced UK's export competitiveness.

Suneil Mahindru, chief investment officer international equity at Goldman Sachs Asset Management, reacted by saying: "We are not concerned about the UK". Falling prices are "freeing disposable income and many industries, such as retail, are benefiting", he added. UK households have suffered from falling real wages over the past few years. Now that prices of consumer essentials like food and energy are stagnant or falling, many households are finally getting a boost in living standards.

Chancellor George Osborne said the data were good news for family budgets and should not be mistaken for "damaging deflation" — a vicious cycle of falling prices and wages which shrinks an economy. He added that once deflation sets in consumers would expect prices to fall and they would delay spending for as long as possible in order to save money. This would perpetuate the problem and is known as a deflation trap. The deflation trap would lead to falling economic growth.

Source: Adopted from The Financial Times, 19 May 2015

Extract 2: Deflation risk and trade slump cast chill over global economy

The world economy is at risk of slipping into a deflation trap and faces a historic slump in global trade that should serve as a wake-up call for governments around the world. The International Monetary Fund warned on Tuesday that a "broad-based phenomenon" of low inflation, fed by a collapse in commodity prices and faltering demand, risked deteriorating into a full-blown deflation trap, particularly in advanced economies.

The fund's warning, came as the World Trade Organisation forecast global trade volumes would rise only 1.7 per cent this year. This would be the slowest increase since the 2008 financial crisis, and a big reduction from the 2.8 per cent growth it forecast in April. "The dramatic slowing of trade growth is serious and should serve as a wake-up call," said Roberto Azevêdo, the WTO's director-general.

The trend was particularly worrying in the context of an increase in protectionism and anti-globalisation rhetoric seen in the US and around the world, he said, adding: "This is a moment to heed the lessons of history and recommit to openness in trade, which can help to spur economic growth."

The twin warnings highlight mounting concerns over the world economy's slow recovery from the 2008 crisis and the tepid response by policymakers. They also point to two key areas of

concern. International institutions are increasingly worried about the potential impact on a fragile global economy of the rise of populist politicians, such as US presidential candidate Donald Trump, and the protectionist policies they put forward.

They are equally frustrated by what they see as the failure of many governments to take tough decisions and their continuing overreliance on central banks and monetary policy to respond to slow growth. The IMF has for years urged governments to adopt more growth-friendly fiscal policies and to push structural reforms to stimulate consumption and investment. Alongside the warning of a deflation trap, the IMF called for governments to target stagnant wages and adopt policies such as raising the minimum wage to boost incomes. Such a response, IMF economists wrote, was particularly necessary in advanced economies, where “the scope of monetary policy to further stimulate demand is perceived to be increasingly constrained” and “policy rates are not far from their effective lower bounds”.

Source: Adopted from The Financial Times, 28 September 2015

Extract 3: MAS 'must remain alert' to signs of slow growth

Singapore's central bank should "remain vigilant" to signs of slow growth in the country and make policy adjustments if needed, the International Monetary Fund (IMF) said. In a statement released yesterday, after a visit here, fund representatives noted that Singapore's growth prospects remain subdued, given a lacklustre global outlook.

The IMF also said the Monetary Authority of Singapore's (MAS) latest move to stop the local currency from rising further against a basket of key currencies was "appropriate", given slowing growth, a weakening labour market as well as low oil prices worldwide. The fund noted that Singapore's economic growth has slowed markedly in recent years owing to both domestic and external factors.

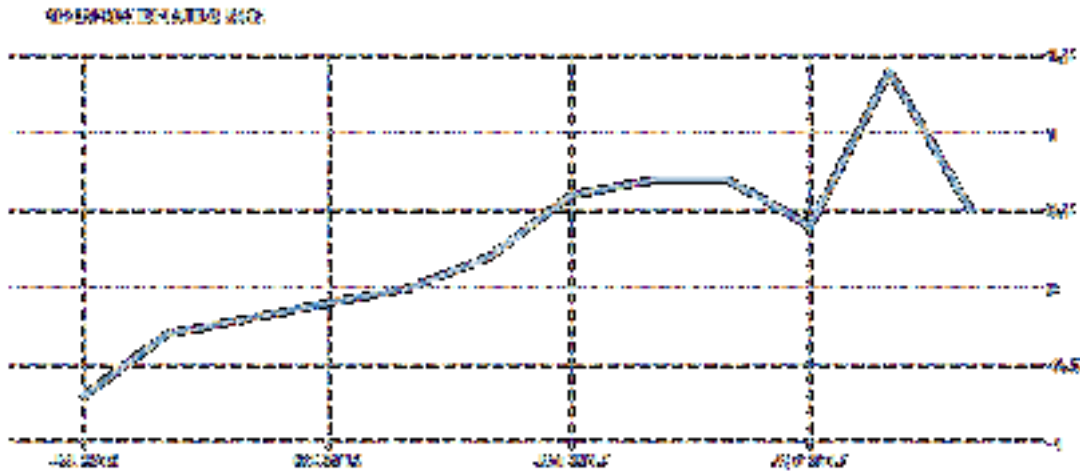
At home, growth is constrained by an ageing labour force, tighter limits on foreign workers and the transition costs of the shift to an innovation-based growth model. On the external front, the outlook for global growth and trade remains subdued, the IMF said. The fund also said Singapore's growth is likely to slow further this year, as the full impact of the slowdown in global trade and capital outflows is felt and companies continue to hold back on hiring and investment. The most important short-term external risk is a sharper-than- expected global slowdown, which could result from weak growth in China, other emerging economies as well as key advanced economies.

Still, the Singapore Government has enough in its coffers to ramp up spending and provide a short-term lift if the economic outlook worsens further, said the IMF. "The authorities are prepared to implement fiscal stimulus through targeted measures, for example providing more income transfers to poor families and seniors and accelerating infrastructure spending," added the fund in its statement.

In the longer run, raising productivity will be essential to Singapore's growth, given slower labour force expansion, the IMF said.

Source: The Straits Times on 11 May 2016

Figure 1: Inflation Rate in Singapore



Source: SingStats

Questions

- (a) Describe the trend in the consumer prices in Singapore between July 2016 and April 2017. [2]
- (b) Using extract 1, comment on whether economies should fear deflation. [4]
- (c) Using aggregate demand and supply analysis, explain the causes of deflation in the UK in 2015 as identified in extract 1. [6]
- (d) In extract 2, the IMF claimed that “the scope of monetary policy to further stimulate demand is perceived to be increasingly constrained”
- Explain a possible factor that would determine the effectiveness of monetary policy to stimulate demand. [2]
- (e) Using both the case study and your own relevant knowledge, discuss whether “an increase in protectionism and anti-globalisation rhetoric” seen in the US and around the world can be justified in terms of economic theory. [8]
- (f) Discuss whether depreciation of the Singapore dollar would be most appropriate way of responding to slow growth in Singapore. [8]

[Total: 30 marks]

Question 2

Are low oil prices here to stay?

Extract 4: Predicting the oil price is challenging

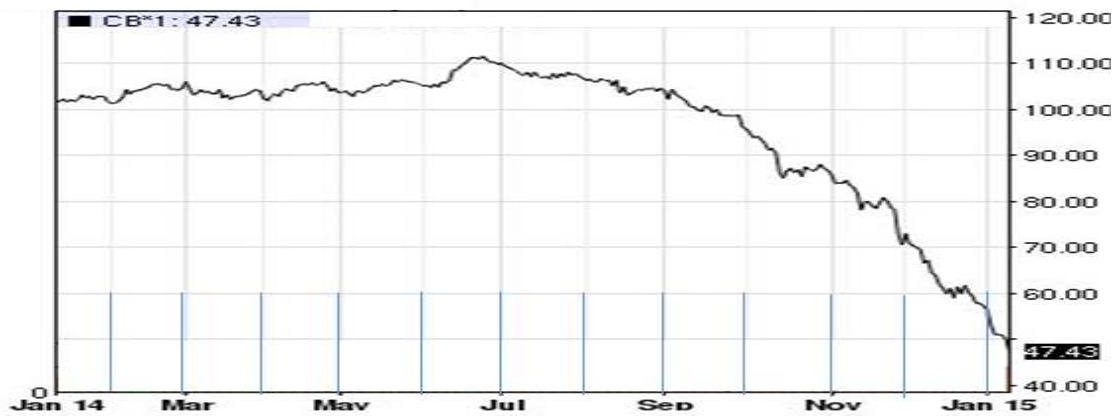
What we do know is that, despite a recent upturn, the price of oil has slumped almost 50% since last summer following the longest-running decline for 20 years.

And we know why - US shale oil, and to a lesser extent Libyan oil returning to the market, has pushed up supply together with a slowdown in the Chinese and EU economies.

With the booming US shale industry showing little signs of slowing, and growing concerns about the strength of the global economy, there are good reasons to suspect that the current slump in the oil price will continue for some time.

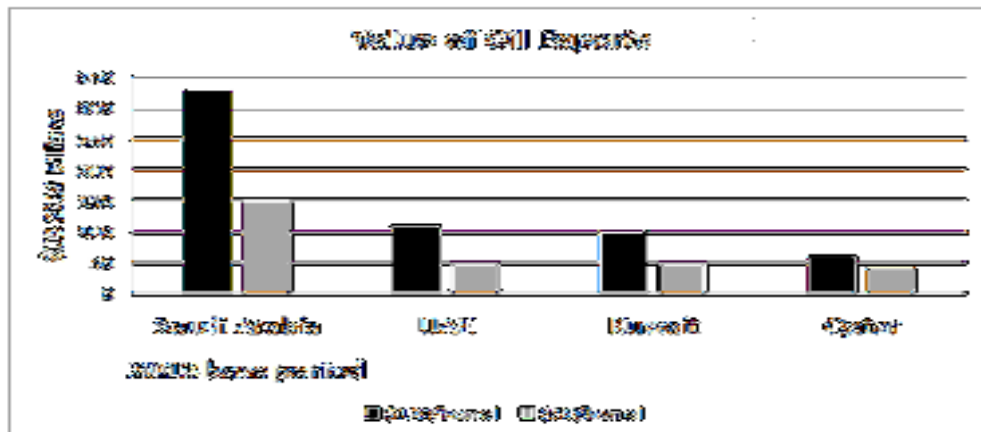
Source: BBC News, 24 February 2015

Figure 2: Latest Price for Crude Oil



Source: Nasdaq.com Jan 14th 2015

Figure 3: The value of oil exports based on different oil prices per barrel for selected countries



Source: Energy Matters, 18 Nov 2015

Extract 5: What are the effects of fracking on the environment?

The oil and gas industry has been expanding consistently for decades due, in part, to the advances in technology in the processes of extracting, transporting and delivering the resource to consumers. One of the most-discussed technological advances is hydraulic fracturing, also known as fracking. This extraction process combines often dangerous chemicals with large amounts of water and sand at high rates of pressure into rock formations to fracture surrounding material for the purpose of extracting oil and gas. Fracking is controversial because of the amount of natural resources needed to complete its process, and more notably because of the negative effects like air pollution and water contamination. In addition to air and water pollution, fracking also increases the potential for oil spills, which can harm the soil and surrounding vegetation. Fracking may cause earthquakes due to the high pressure used to extract oil and gas from rock and the storage of excess wastewater on site.

Source: Investopedia, 19 January 2015

Extract 6: Can Indonesia phase out energy subsidies without hurting the poor?

Indonesia enacted a major reform recently. On 1 January, President Joko Widodo followed through with his electoral promise to cut decades-long subsidies for energy products. Many leaders had tried before him, but retreated in the face of fierce resistance from the people. Thanks in part to low oil prices, the newly-elected President got the reform through without much trouble. The true challenge will be how to support poor households when prices start rising again.

Source: OECD Insight 28 April 2015

Extract 7: Little cheer for Singapore's economy despite lower oil prices

Singapore: Lower global oil prices should stimulate global economic growth, according to the International Monetary Fund, which estimates that every US\$10 fall in per-barrel oil price can lift global GDP by 0.2 per cent. In particular, countries which are net importers of oil, such as Singapore, should benefit more from lower global oil prices. For example, electricity bills and petrol costs have fell about 15% and 5.5% respectively. Crude oil prices have slumped by 48% on average from 2014 to last year.

But now that oil has dipped below US\$30 a barrel, and is hovering its lowest price levels in over a decade, initial cheer from energy cost savings appears to be turning into fear over a global economic slowdown. The current slump in oil prices has done little to prop up consumer spending and spur growth, according to CIMB Private Banking economist Song Seng Wun, "because the slump in global trade has overtaken the benefits of cheaper oil", he said. Hit by slowing global demand, Singapore's trade-dependent economy grew 2.1 per cent in 2015, clocking its weakest pace of growth since 2009.

"Last year for example, was one of the worst years for the petrochemical industry, even though the industry had the benefit of lower input prices. Due to low global demand, the firms over-invested and could not run at capacity," said Mr Song. Singapore-based Keppel Corp announced that it had cut around 8,000 jobs as weak energy prices hammered profits at the world's largest oil rig builder. Further, the global economic slump that has resulted from low oil

price has also had a chain effect on Singapore's economy. These effects extend beyond just the oil and gas industry.

Overall, some clear winners from lower oil prices could be consumers, and businesses in energy-intensive industries, such as aviation and shipping, which stand to gain from lower utility bills. Meanwhile, the losers include oil-related firms, like rig builders and offshore and marine companies, which have seen orders thin out in line with lower oil exploration activity.

Source: CNA online 22 Jan 2016

Questions

- (a) (i) Using Figure 2, describe the trend of oil prices between January 2014 and January 2015? [2]
- (ii) With the help of a diagram, explain the demand and supply factors that are responsible for the trend in oil prices identified in (i). [4]
- (b) Using the evidence from Figure 3, what can you conclude about the price elasticity of demand for oil in Saudi Arabia? [3]
- (c) With reference to Extract 6, explain how a complete removal of energy subsidies will affect households' expenditure on electricity. [3]
- (d) (i) Explain one possible reason why the price of crude oil has fallen by 48% whereas price of petrol has fallen only by 5.5%. [2]
- (ii) With reference to Extract 7, discuss the impact of changes in oil prices on the economic growth of Singapore. [8]
- (e) Explain and evaluate one market-based policy to deal with economic inefficiency in resource allocation due to fracking. [8]

[Total: 30 marks]

SECTION B

Answer **one** question from this section

- (1) (a) Explain how the existence of merit goods such as art galleries represent market failure. [10]
- (b) Discuss the view that subsidies to provide free entry to art galleries is the best way to achieve efficient allocation of resources. [15]
- (2) (a) Explain how standard of living is measured in an economy. [10]
- (b) Discuss whether an improvement in trade balance will help to achieve a higher standard of living in an economy. [15]

***** The End *****

Question 2

Trade Slump and Deflation

Extract 5: UK slips into deflation as prices fall 0.1%

The UK has officially slipped into deflation for the first time in more than half a century, but economists and policy makers are not concerned, saying that a brief period of gently falling prices is more likely to help growth than harm it.

The UK has been teetering on the brink of deflation for several months because of the slide in global oil prices, falling household incomes and the strength of sterling, which has reduced UK's export competitiveness.

Suneil Mahindru, chief investment officer international equity at Goldman Sachs Asset Management, reacted by saying: "We are not concerned about the UK". Falling prices are "freeing disposable income and many industries, such as retail, are benefiting", he added. UK households have suffered from falling real wages over the past few years. Now that prices of consumer essentials like food and energy are stagnant or falling, many households are finally getting a boost in living standards.

Chancellor George Osborne said the data were good news for family budgets and should not be mistaken for "damaging deflation" — a vicious cycle of falling prices and wages which shrinks an economy. He added that once deflation sets in consumers would expect prices to fall and they would delay spending for as long as possible in order to save money. This would perpetuate the problem and is known as a deflation trap. The deflation trap would lead to falling economic growth.

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The world economy is at risk of slipping into a deflation trap and faces a historic slump in global trade that should serve as a wake-up call for governments around the world. The International Monetary Fund warned on Tuesday that a "broad-based phenomenon" of low inflation, fed by a collapse in commodity prices and faltering demand, risked deteriorating into a full-blown deflation trap, particularly in advanced economies.

The fund's warning, came as the World Trade Organisation forecast global trade volumes would rise only 1.7 per cent this year. This would be the slowest increase since the 2008 financial crisis, and a big reduction from the 2.8 per cent growth it forecast in April. "The dramatic slowing of trade growth is serious and should serve as a wake-up call," said Roberto Azevêdo, the WTO's director-general.

The trend was particularly worrying in the context of an increase in protectionism and anti-globalisation rhetoric seen in the US and around the world, he said, adding: "This is a moment to heed the lessons of history and recommit to openness in trade, which can help to spur economic growth."

The twin warnings highlight mounting concerns over the world economy's slow recovery from the 2008 crisis and the tepid response by policymakers. They also point to two key areas of concern. International institutions are increasingly worried about the potential impact on a fragile global economy of the rise of populist politicians, such as US presidential candidate Donald Trump, and the protectionist policies they put forward.

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Singapore's central bank should "remain vigilant" to signs of slow growth in the country and make policy adjustments if needed, the International Monetary Fund (IMF) said. In a statement released yesterday, after a visit here, fund representatives noted that Singapore's growth prospects remain subdued, given a lacklustre global outlook.

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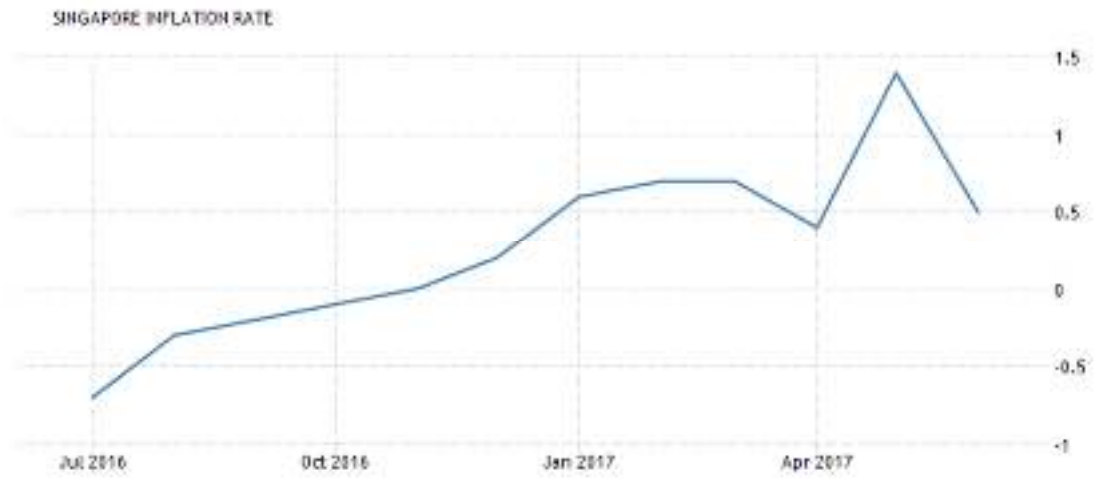
At home, growth is constrained by an ageing labour force, tighter limits on foreign workers and the transition costs of the shift to an innovation-based growth model. On the external front, the outlook for global growth and trade remains subdued, the IMF said. The fund also said Singapore's growth is likely to slow further this year, as the full impact of the slowdown in global trade and capital outflows is felt and companies continue to hold back on hiring and investment. The most important short-term external risk is a sharper-than-expected global slowdown, which could result from weak growth in China, other emerging economies as well as key advanced economies.

Still, the Singapore Government has enough in its coffers to ramp up spending and provide a short-term lift if the economic outlook worsens further, said the IMF. "The authorities are prepared to implement fiscal stimulus through targeted measures, for example providing more income transfers to poor families and seniors and accelerating infrastructure spending," added the fund in its statement.

In the longer run, raising productivity will be essential to Singapore's growth, given slower labour force expansion, the IMF said.

Source: The Straits Times on 11 May 2016

Figure 3: Inflation Rate in Singapore



Source: SingStats

Suggested Answers

(a)	Describe the trend in the consumer prices in Singapore between July 2016 and April 2017.	[2]
	<ul style="list-style-type: none"> • Consumer prices show a falling trend between July 2016 and Oct/Nov 2016 (1m) • before rising from Oct/Nov 2016 to April 2017 (1m). 	
(b)	Using extract 5, comment on whether economies should fear deflation.	[4]
	<p>i. Thesis</p> <ul style="list-style-type: none"> • Yes economies should fear deflation if the economy is experiencing deflation trap or ‘damaging deflation’ as mentioned in Extract 5 para 4. Deflation trap is known as ‘a vicious cycle of falling prices and wages which shrinks an economy’ as ‘consumers would expect prices to fall and they would delay spending for as long as possible’, leading to a continuous fall in C and fall in AD (Draw) and fall in RNY, leading to ‘falling economic growth’ . <p>ii. Anti-Thesis</p> <ul style="list-style-type: none"> • No economies should not fear deflation as ‘consumer essentials like food and energy are stagnant or falling, many households are finally getting a boost in living standards’ as stated in Extract para 3. Thus deflation can benefit households and make groceries more affordable for everyone, especially benefitting the low income groups or unemployed who spend a large proportion of income on groceries / food which is a basic necessity, hence promoting income equity. <p>iii. Judgement</p> <p>Whether economies should fear deflation depends on whether the consumers are expecting prices to fall. If consumers expect that deflation is only temporary and economic conditions and prices will eventually improve in the months ahead, then deflation is not a concern.</p> <p><u>Note:</u></p> <ul style="list-style-type: none"> • <i>Two-sided answer on whether economies should fear deflation (3m)</i> • <i>Judgement on the overall SOL (1m)</i> 	
(c)	Using aggregate demand and supply analysis, explain the causes of deflation in the UK in 2015 as identified in extract 5.	[6]
	<p>Deflation in UK is due to ‘slide in global oil prices, falling household incomes and the strength of sterling, which has reduced UK’s export competitiveness’ as mentioned in Extract 5 para 2</p> <p>i. Falling AD (4m)</p> <ul style="list-style-type: none"> • Falling household incomes in UK has contributed to fall in purchasing power, leading to a fall in consumption, resulting in a fall in AD. • Furthermore the strength of sterling has led to rise in export prices in foreign currency, since prices in domestic currency has not changed but there is a fall in volume of export revenue falls. (Draw fall in Xrev, via falling DD for exports) • Hence, fall in C and X, will cause AD curve to shift to the left (Draw), leading to fall in GPL. 	

	<p>ii. Falling AS (2m)</p> <ul style="list-style-type: none"> Slide in global oil prices will lead to lower cost of production, as oil is factor input which is required in most production process. Hence, this will lead to rise in AS and AS curve shift downwards (Draw), leading to fall in GPL. 	
(d)	<p>In extract 2, the IMF claimed that “the scope of monetary policy to further stimulate demand is perceived to be increasingly constrained”</p> <p>Explain a possible factor that would determine the effectiveness of monetary policy to stimulate demand.</p>	[2]
	<p>Identify (1m) Explain (1m) Acceptable answers (any one)</p> <ol style="list-style-type: none"> Size of the multiplier. Less effective if multiplier is small. The rise in AD due to a fall in interest rates will be limited if the multiplier is small. Steepness of MEI curve. Less effective if MEI is steep. The fall in interest rate will not raise Investment by much. Liquidity Trap. If there is a liquidity trap then a rise in money supply will not cause the interest rate to fall. 	
(e)	<p>Using both the case study and your own relevant knowledge, discuss whether “an increase in protectionism and anti-globalisation rhetoric” seen in the US and around the world can be justified in terms of economic theory.</p>	[8]
	<ul style="list-style-type: none"> In anticipation of a deflation trap and falling economic growth, it is not uncommon to see in countries ‘an increase in protectionism and anti-globalisation rhetoric seen in the US and around the world. By imposing protectionism e.g. tariff (draw tariff diagram), there will be a fall in import expenditure(show on diagram). This will force the locals to turn to domestic consumption as it is relatively cheaper. The rising domestic consumption will give rise to a rise in AD and hence combatting a deflation trap and raise GDP(draw AS-AD). Although seem justifiable for the country imposing tariff, the outcome may be counter intuitive due to ‘beggar-thy-neighbour’ effect. Trading partners whose exports are now having less demand due to the tariff, would face falling GDP. This will result in falling purchase of imports. Hence countries that place tariffs in order to raise domestic consumption would face falling export revenue. The extent of the fall in export revenue would depend on the fall in the GDP of the trading partner as well as the responsiveness of demand for exports due to the fall in income. If the export revenue falls more than the rise in consumption, then there will be contraction for the economy that impose the tariff. In addition, should trading partner retaliates, it may be counter-productive and it could lead to a lose-lose situation. Other areas of consideration would include the impact of the tariff on the allocation of resources. Once a tariff is imposed, there would be a dead weight loss. (Use diagram) and explain. Protectionism also goes against the benefits offered by the theory of comparative advantage. (Draw PPC vs CPC diagram). Conclusion, although protectionism can help alleviate short term economic problem, in the long run it seem to harm economies. I believe 	

	<p>that free trade is essential and hence agree with Roberto Azevêdo, the WTO's director-general who said "This is a moment to heed the lessons of history and recommit to openness in trade, which can help to spur economic growth."</p> <table border="1"> <tr> <td>L1</td> <td>One sided answer on the benefits of protectionism or arguments against protectionism with the use of economic theory (framework)</td> <td>1-3</td> </tr> <tr> <td>L2</td> <td>Two sided answer on the arguments for and against protectionism. Expected use of economic theory (framework)</td> <td>4-6</td> </tr> <tr> <td>E</td> <td>Judgement of the justification of protectionism</td> <td>1-2</td> </tr> </table>	L1	One sided answer on the benefits of protectionism or arguments against protectionism with the use of economic theory (framework)	1-3	L2	Two sided answer on the arguments for and against protectionism. Expected use of economic theory (framework)	4-6	E	Judgement of the justification of protectionism	1-2	
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(f)	Discuss whether depreciation of the Singapore dollar would be most appropriate way of responding to slow growth in Singapore.	[8]									
	<p>i. Explain briefly the causes of slow growth in Singapore</p> <ul style="list-style-type: none"> • Domestic causes: Ageing labour force, tighter limits on foreign workers and the transition costs of the shift to an innovation-based growth model. (Extract 7 para 3). • E.g. tighter limits on foreign labour will lead to rising wages and falling SRAS. • External causes: Fall in X and possibly FDI hence AD due to the 'outlook for global growth and trade remains subdued' (Extract 7 para 3) <p><u>Thesis</u></p> <p>ii. Explain how depreciation will increase growth in Singapore</p> <ul style="list-style-type: none"> • Assuming M-L condition holds, which is the sum of PED for exports and imports is greater than one, depreciation will lead to rise in net exports. • Hence, this will help increase AD (Draw) and increase RNY. <p><u>Anti-thesis</u></p> <p>iii. Explain the limitations of exchange rate depreciation</p> <ul style="list-style-type: none"> • M-L condition may not hold in the SR (give reasons). Hence in the SR, AD may actually fall leading to even slower growth. • Temporary and short-term measure to boost export competitiveness and weaker exchange rate will eventually lead to rise in price of locally produced goods that use imported inputs to go up, leading to cost-push inflation and will eventually erode export competitiveness <p>iv. Explain how other policies will be more appropriate</p> <ul style="list-style-type: none"> • Exchange rate depreciation may not be appropriate as it is unable to target internal causes such as aging labour force which would lead to shrinking size of labour force in the future and fall in productive capacity and fall in LRAS and fall in RNY and Yf. • Hence, 'raising productivity will be essential to Singapore's growth' as stated in Extract 7 last para. • Explain at least 1 measure of SS side policy (e.g. education or retraining) and show how it will help increase growth, especially for potential growth. • Extract 7 para 4 also mentions that "The authorities are prepared to implement fiscal stimulus through targeted measures, for example providing more income transfers to poor families and seniors and accelerating infrastructure spending" 										

- Explain at 1 least measure of the fiscal policy as a DD side policy and show how it will help increase actual growth

v. Explain the limitations of the alternative policies

- Time Lag
- Small K

Conclusion

- vi. Take a stand

L1	A brief description of how depreciation will improve growth without considering the causes of slow growth in Singapore .	1-3
L2	Provides a clear two-sided explanation on how depreciation and other measures will help improve growth in Singapore through the use of relevant diagrams. Clear explanation on rise in AS and AD that links to Sg's growth.	4-6
E1	Provides an unexplained judgement on the appropriateness of exchange rate depreciation on improving Sg's growth. Good use of data in considering the appropriateness of exchange rate depreciation on improving Sg's growth.	1-2

Are low oil prices here to stay?

Extract 4: Predicting the oil price is challenging

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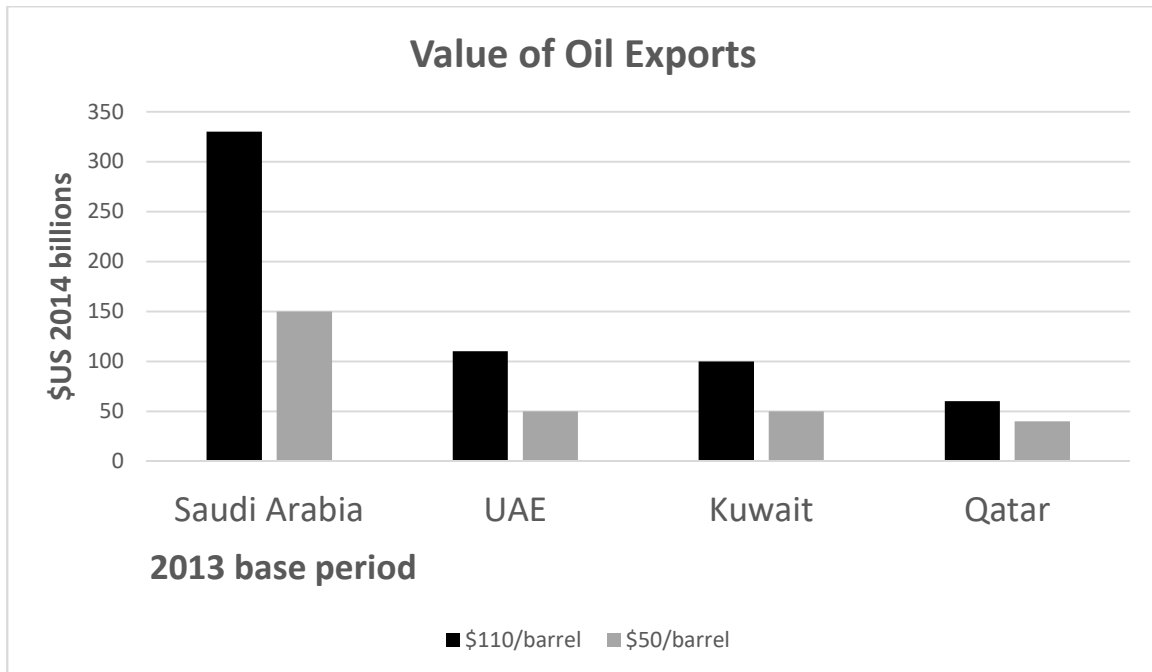
Source: BBC News, 24 February 2015

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Singapore: Lower global oil prices should stimulate global economic growth, according to the International Monetary Fund, which estimates that every US\$10 fall in per-barrel oil price can lift global GDP by 0.2 per cent. In particular, countries which are net importers of oil, such as Singapore, should benefit more from lower global oil prices. For example, electricity bills and petrol costs have fell about 15% and 5.5% respectively. Crude oil prices have slumped by 48% on average from 2014 to last year.

But now that oil has dipped below US\$30 a barrel, and is hovering its lowest price levels in over a decade, initial cheer from energy cost savings appears to be turning into fear over a global economic slowdown. The current slump in oil prices has done little to prop up consumer spending and spur growth, according to CIMB Private Banking economist Song Seng Wun, "because the slump in global trade has overtaken the benefits of cheaper oil", he said. Hit by slowing global demand, Singapore's trade-dependent economy grew 2.1 per cent in 2015, clocking its weakest pace of growth since 2009.

"Last year for example, was one of the worst years for the petrochemical industry, even though the industry had the benefit of lower input prices. Due to low global demand, the firms over-invested and could not run at capacity," said Mr Song. Singapore-based Keppel Corp announced that it had cut around 8,000 jobs as weak energy prices hammered profits at the world's largest oil rig builder. Further, the global economic slump that has resulted from low oil price has also had a chain effect on Singapore's economy. These effects extend beyond just the oil and gas industry.

Overall, some clear winners from lower oil prices could be consumers, and businesses in energy-intensive industries, such as aviation and shipping, which stand to gain from lower utility bills. Meanwhile, the losers include oil-related firms, like rig builders and offshore and marine companies, which have seen orders thin out in line with lower oil exploration activity.

Source: CNA online 22 Jan 2016

Questions:

(a)	(i)	<p>Using Figure 2, describe the trend of oil prices between January 2014 and January 2015? [2]</p> <p>Oil prices are generally falling/decreasing between Jan 2014 and Jan 2015. (1m) Steep fall in oil prices after July 2014 to Jan 2015 (1m)</p>	
	(ii)	<p>With the help of a diagram, explain the demand and supply factors that are responsible for the trend in oil prices identified in (i). [4]</p> <p><u>Reasons for falling oil prices :</u> Fall in demand due to a slowdown in global economies (extract 1 : “growing concerns about the strength of the global economy”) Increase in supply due to increase in oil supplies due to shale gas production & increase in oil production by Libya (extract 1)</p> <p>Explain how the fall in demand and increase in supply cause a sharp fall in price</p> <p>Diagram</p> <p>2 m for identify & explanation, 2 m for diagram and price adjustment</p>	
(b)		<p>Using the evidence from Figure 3, what can you conclude about the price elasticity of demand for oil in Saudi Arabia? [3]</p> <p>Define PED (1m)</p> <p>From figure 2, price of oil in Saudi Arabia fall and total export revenue falls. This implies a fall in price exceeds leads to a less than proportionate increase in quantity, hence, demand for oil is price inelastic (2m)</p>	
(c)		<p>With reference to Extract 6, explain how a complete removal of energy subsidies will affect households’ expenditure on electricity. [3]</p> <p>Removal of energy subsidies will lead to an increase in cost of production of electricity (decrease SS) which will lead to an increase in the price of electricity. (1m) Household expenditure on electricity is price of electricity multiplied by the volume of electricity consumed. Increase in price of electricity will lead to a less than proportionate fall in volume of electricity consumed since demand for electricity is price inelastic (high degree of necessity) and hence leading to an increase in household expenditure on electricity. (2m)</p>	

(d)	(i)	<p>Explain one possible reason why the price of crude oil has fallen by 48% whereas price of petrol has fallen only by 5.5%.</p> <p>Price of petrol has fallen only marginally because price of petrol includes costs of processing/refining the crude oil, costs of rental and government indirect taxes. So the initial price fall was eroded along the process and resulted in only a smaller price fall for the price of petrol.</p>	[2]
	(ii)	<p>With reference to Extract 7, discuss the impact of changes in oil prices on the economic growth of Singapore.</p> <p><u>1) Short-Run: Economic Growth</u></p> <p>(1) Increase in SRAS</p> <p>Singapore is a net oil importer. As a result of the decrease in price of crude oil leading to a fall in the price of petrol & electricity leading to fall in costs of production. This will lead to an increase in SRAS leading to an increase in real NY (diagram).</p> <p>For eg, the aviation, shipping, logistic and transportation industries where petroleum accounts for a large percentage of input costs will benefit from the fall in price.</p> <p>(2) Increase in AD</p> <p>Falling oil prices would result in fall in costs of production leading to an improvement in export competitiveness. This will cause AD to increase leading to an increase in real NY (diagram)</p> <p>Singapore will experience economic growth in the short run.</p> <p><u>2) Long-Run: Economy may be worse off</u></p> <p>A number of industries that are part of the oil supply chain could be hurt by weaker oil demand – like marine and offshore engineering. The reason why they are affected is because they supply oil rigs or machinery for the extraction of crude oil. Since oil price decreases due to the global oversupply of oil, there will be less demand for such orders since extraction should be reduced. This will result in a fall in AD and reduce real NY and employment. This fall in real NY will result in fall in purchasing power and hence causing a further fall in consumption and net exports which will lead to a slump in global trade (extract 7)</p> <p>In addition, investors may be pessimistic about future business outlook and cut back on investment. (Diagram)</p> <p>In conclusion, a fall in the oil prices in the short run will promote EG. This will create jobs in certain industries (eg aviation and logistics) which lead to an increase in economic growth. However, in the LR with further fall in oil prices and poor business outlook in the rig builders and offshore marine companies it will slow down economic growth for Singapore. In addition, any further fall in oil prices may cause the investors to lose confidence which will be detrimental to economic growth and employment.</p>	[8]

	<table border="1"> <thead> <tr> <th data-bbox="336 282 443 315">Level</th> <th data-bbox="443 282 1150 315">Descriptors</th> <th data-bbox="1150 282 1315 315">Mark</th> </tr> </thead> <tbody> <tr> <td data-bbox="336 315 443 454">L2</td> <td data-bbox="443 315 1150 454">Well-developed analysis of both the short run AND long run impacts on the economic growth in Singapore with examples to substantiate which industries would benefit / be worse off.</td> <td data-bbox="1150 315 1315 454">4-6</td> </tr> <tr> <td data-bbox="336 454 443 593">L1</td> <td data-bbox="443 454 1150 593">One sided discussion of either short run or long run impacts on Singapore economic growth. OR Weak analysis of both the short and long run impact on economic growth.</td> <td data-bbox="1150 454 1315 593">1-3</td> </tr> <tr> <td data-bbox="336 593 443 689">E</td> <td data-bbox="443 593 1150 689">Substantiated judgement is made on the eventual outcome of the impact on economic growth in Singapore</td> <td data-bbox="1150 593 1315 689">1-2</td> </tr> </tbody> </table>	Level	Descriptors	Mark	L2	Well-developed analysis of both the short run AND long run impacts on the economic growth in Singapore with examples to substantiate which industries would benefit / be worse off.	4-6	L1	One sided discussion of either short run or long run impacts on Singapore economic growth. OR Weak analysis of both the short and long run impact on economic growth.	1-3	E	Substantiated judgement is made on the eventual outcome of the impact on economic growth in Singapore	1-2	
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E	Substantiated judgement is made on the eventual outcome of the impact on economic growth in Singapore	1-2												
(e)	<p>Explain and evaluate one market-based policy to deal with economic inefficiency in resource allocation due to fracking.</p> <p>Identify and explain source of market failure: negative externality in production.</p> <p>Explain and evaluate one market-based policy like indirect taxation to achieve efficiency in resource allocation.</p> <ul style="list-style-type: none"> • Define market failure • Identify the source of market failure (negative externality in production) • Define negative externality • Illustrate with diagram) to show $MSC > MPC$; fracking cause pollution and its harmful effects on the health of the residents near the fracking area (MEC), hence leading to economic issue of allocative inefficiency (over-production of oil). • Show deadweight loss and allocative inefficiency • Explain how government internalise the external costs through the use of indirect taxation (Assume Taxation = Marginal External costs) <p>Limitations of taxation</p> <ul style="list-style-type: none"> • Difficult to estimate the external costs accurately and hence the right amount of tax to impose. Thus overestimation may lead to underproduction and underestimation may not completely eliminate the deadweight loss to society. • It is not feasible and administrative cumbersome to impose different tax rates as firms may emit different types & amount of negative externality. <p>Conclusion :</p>	[8]												

Indirect Taxation is effective in dealing with inefficient resource allocation as it allows the firms to pursue their profit maximisation objective & at the same time to internalise the external costs of production. The tax revenue collected also allows the government to subsidise R&D to improve a more efficient methods of fracking and implement measures to reduce the health cost on the residents.

Level	Descriptors	Mark
L2	For a well-developed answer on inefficient resource allocation and how indirect taxation (market-based policy) correct the deadweight loss. Limitations of taxation are well explained.	4-6
L1	For an undeveloped explanation of the concepts of resource allocation and market failure and undeveloped analysis of measures used.	1-3
E	Substantiated judgement on the effectiveness of market-based policy to reduce negative externality.	1-2

2017 JC2 H1 Econs Prelim Exam

Suggested Answers for Question 3

3	(a)	Explain how the existence of merit goods such as art galleries represent market failure.	[10]
	(b)	Discuss the view that subsidies to provide free entry to art galleries is the best way to achieve efficient allocation of resources.	[15]

a) Explain how the existence of merit goods such as art galleries represent market failure. [10]

Command Word: Explain

Context: Art Galleries

Content: Market failure (Merit Goods)

Intro:

Merit goods are goods that the government feels that the people will under-consume due to poor economic decisions (imperfect information) that they make on their own behalf and that it give rise to positive externalities when consumed.

1: Imperfect Information

Due to imperfect information, consumers may not realise that making visits to art galleries enhances the quality of life and helps them to develop their critical thinking, to cultivate creative problem-solving and to communicate and express themselves effectively. Therefore, they may not visit the art galleries at the socially optimal level. This can shown in the diagram below (Figure 1) where consumers perceived the marginal private benefit to be at $MPB_{\text{perceived}}$ which is lower than the actual MPB (MPB_{actual}). Hence, with no government intervention, consumers will only be concerned about $MPB_{\text{perceived}}$ and MPC and visit art galleries at Q_c which is below the socially optimal level, Q_s (where $MSC = MSB$).

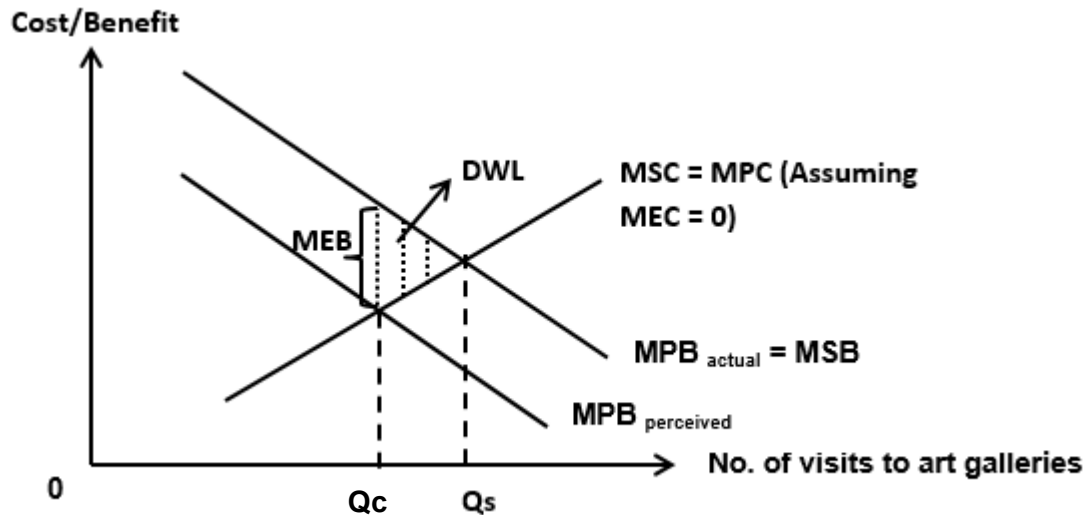


Figure 1

Hence, as a result of under-consumption of visits to art galleries, it result in a deadweight loss of the shaded area as shown in Figure 1 leading to inefficient allocation of resources and thus market failure.

2: Positive Externality

In addition, when merit goods are consumed, it gives rise to positive externalities. When visiting art galleries, consumers are only concerned with the own private benefit (e.g. leisure) and private cost (e.g. entry fee). However, it gives rise to external benefit as well which are the economic benefits to the country. Art galleries provide job opportunities directly and indirectly due to tourists visiting the art galleries and spending in other sectors during their stay in the country.

If there is no government intervention, consumers will only consider their private benefit (MPB) and private cost (MPC) and consume at Q_c (refer to Figure 2), ignoring the external benefit (MEB). The presence of external benefit result in the divergence of MSB and MPB and the socially optimal number of visits to the museums is at Q_s where MSB cuts MSC. This leads to an under-consumption of visits to art galleries resulting in the presence of deadweight loss as shown by the shaded area shown in Figure 2. Thus, the market has failed as there is under-allocation of resources to the visits of art galleries.

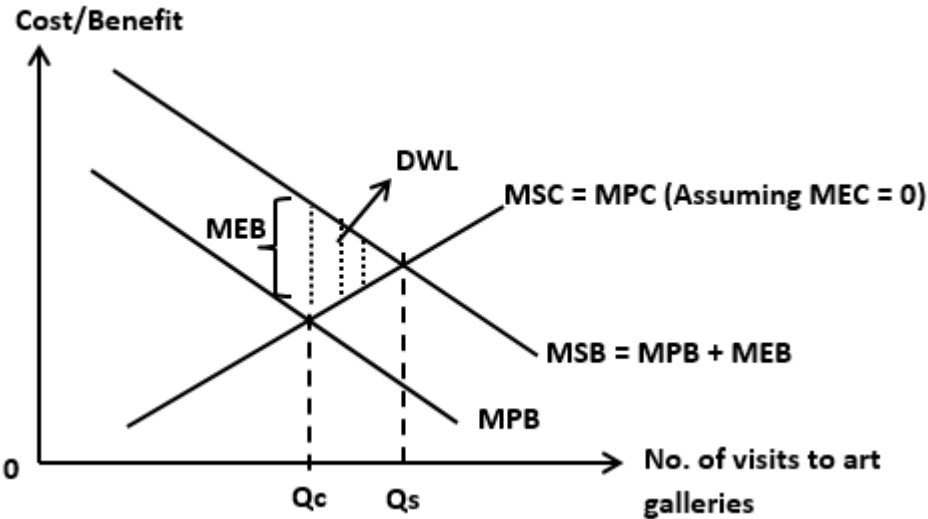


Figure 2

Conclusion:

As the market has failed to allocate resources to the visits of art galleries which is a form of merit goods, it is important that the government intervenes through various ways such as providing subsidies to increase the consumption level to Q_s .

Marking Scheme

L3	For a well-developed explanation of how existence of merit goods such as art galleries represent market failure (both positive externality and imperfect information).	7-10m
L2	Underdeveloped explanation of how existence of merit goods such as art galleries represent market failure. Max 6 marks for candidates who only mentioned about positive externality or imperfect information leading to market failure.	5-6m
L1	Descriptive answer lacking in economic analysis and consists of conceptual errors.	1-4m

b) Discuss the view that subsidies to provide free entry to art galleries is the best way to achieve efficient allocation of resources. [15]

Command Word: Discuss

Context: Art Galleries

Content: Subsidies (Free Entry) to solve market failure arising from the presence of merit goods, alternative policies to subsidies

Intro:

- Presence of merit goods leads to market failure due to imperfect information and positive externality.
- To achieve efficient allocation of resources, government has to implement policies to encourage more consumers to visit art galleries.

Body:

1: Thesis → Subsidies to provide free entry to art galleries is one of the best ways to achieve efficient allocation of resources

- By giving subsidies to provide free entry, consumers will consume up to the point where MPB equates to zero as the cost to them is zero.

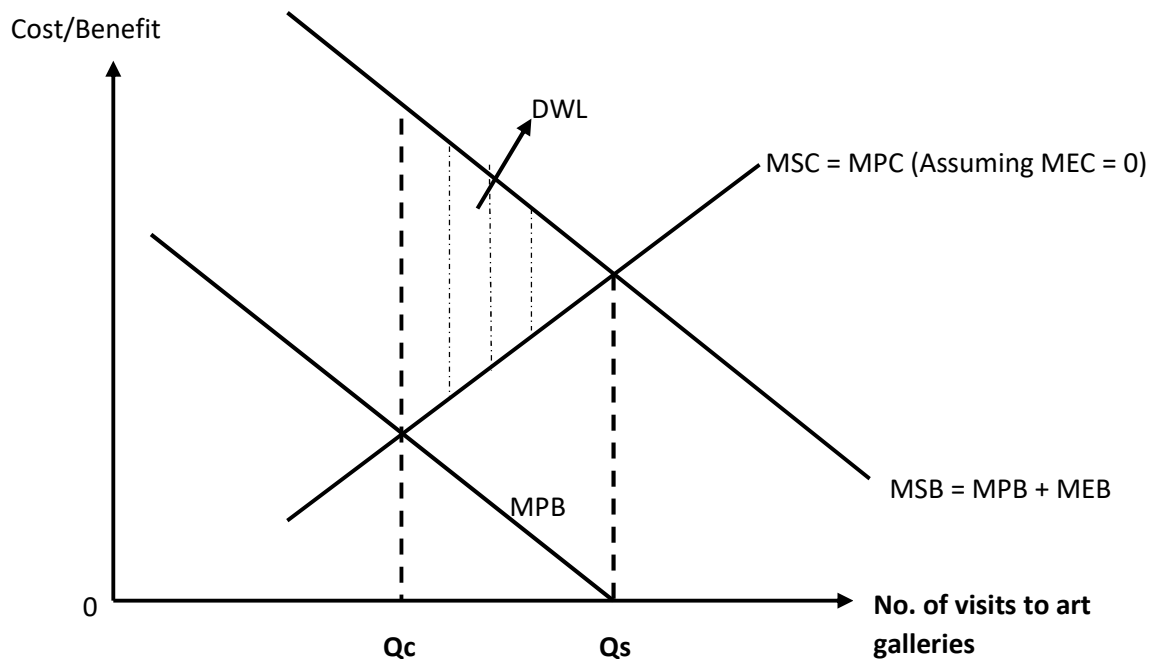


Figure 3

- With reference to Figure 3, when $MPB = 0$, consumers will now consume at Q_s level which is the socially optimal level of consumption. Thus, the market has achieved efficient allocation of resources.
- Nevertheless, this is the best method only if $MPB = 0$ at the Q_s level.

2: Anti-thesis: Limitations of subsidies to provide free entry

- As mentioned, it is only the best method if $MPB = 0$ at Q_s level. However, when services are provided for free, consumers tend to overconsume the goods and hence, they will visit the art galleries beyond the Q_s level as shown in figure 4.

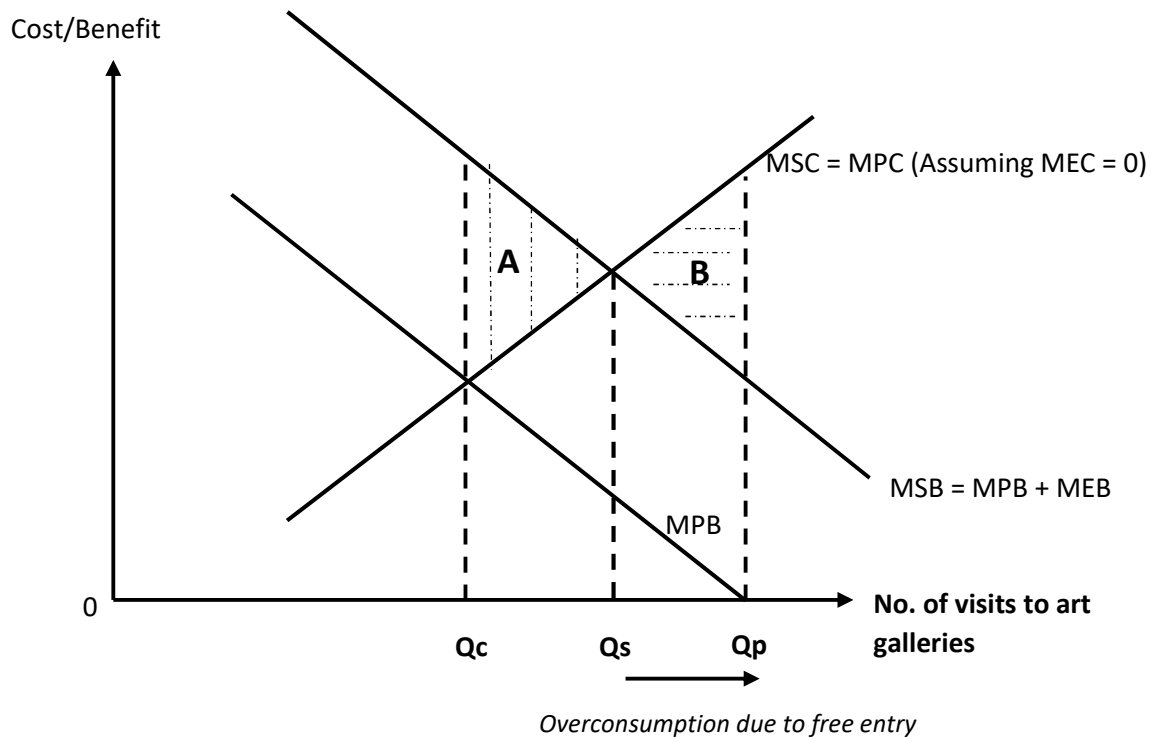


Figure 4

- As $Q_p > Q_s$, there is overconsumption of the visits to art galleries and it will create a new deadweight loss of area B as shown in figure 4. The deadweight loss may be even larger than the initial deadweight loss (when there is no government intervention) if Q_p is significantly larger than Q_s .
- Furthermore, the government incurs a large opportunity costs as the large sum of money that is used to provide free entry can be spent in other areas such as healthcare and education services.

- The government may even experience budget deficit if it has to provide entrance to art galleries for free for a long period of time so as to increase consumption.
- Also, by providing it for free may only solve part of the problem due to the presence of positive externality. Providing it for free does not tackle the problem with regard to imperfect information. There may be free entrance but if consumers do not think that it's beneficial for them, the increase in visiting the museums may be limited.
- Therefore, subsidies to provide free entry to art galleries is not the best way to achieve efficient allocation of resources

3: Anti-thesis: Alternative policies should be implemented instead

Alternative policy 1: Partial Subsidy

- Instead of providing it for free, the government should implement partial subsidy. If the government has sufficient information about the external benefit, they can equate the amount of subsidy to be the MEB value instead of providing it for free to avoid overconsumption.
- Hence, consumers' MPC will now fall by the MEB value to MPC_1 as shown in figure 5 and it will intersect MPB at Q_s level. Thus, the deadweight loss is reduced and efficient allocation of resources is achieved.
- Government is also able to adjust the level subsidy over time to ensure the visit to art galleries to be at Q_s level. Therefore, this may be a better alternative to free provision.

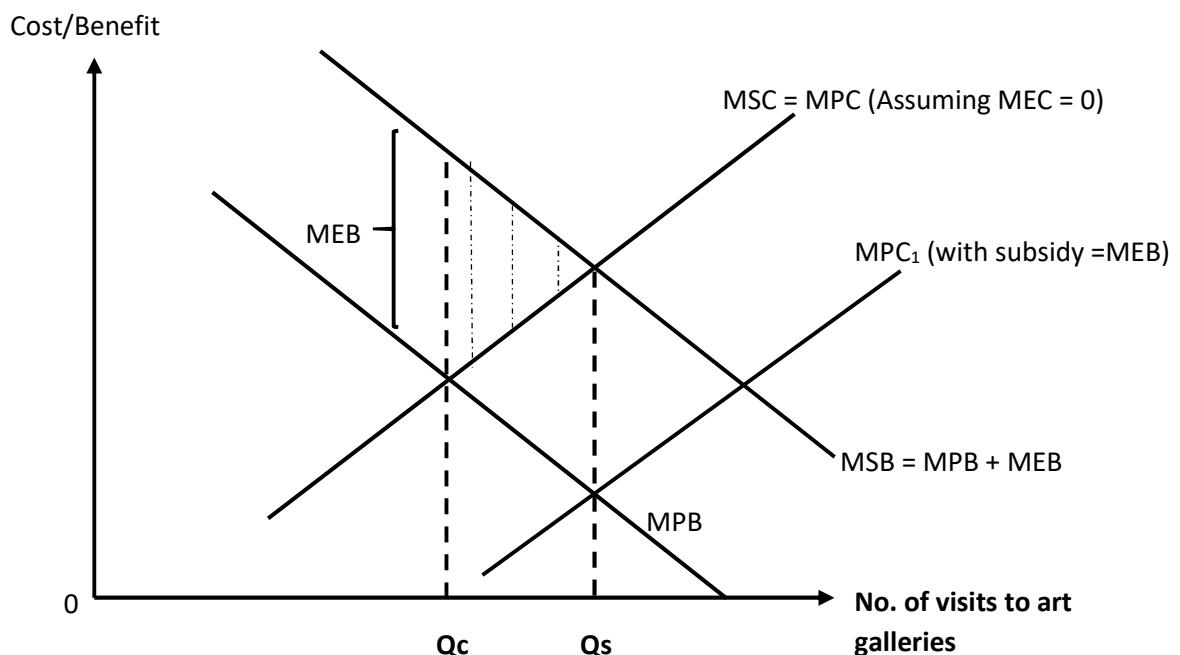


Figure 5

- However, the government must have sufficient information and the ability to accurately measure the value of MEB. Government may over or under subsidise due to imperfect information and the deadweight loss may not be reduced.
- Providing partial subsidy also incurs an opportunity cost and it doesn't tackle the issue of consumers having imperfect information to make the right decision.

Alternative policy 2: Education

- To solve the problem of imperfect information, government may want to provide the public with information on the various exhibitions showcased by the various art galleries so as to increase the number of visits.
- Also, the government can include visits to art galleries as part of the education curriculum in schools and highlight the importance of the arts to the students from a young age so that they can understand and appreciate the importance of the arts.
- However, the results are uncertain. Even if consumers understand the benefits of visiting art galleries, they may still choose not to visit the art galleries for various reasons such as having to pay entrance fee which may be quite high for some art galleries.

Conclusion:

Whether subsidies to provide free entry to art galleries is the best method to achieve efficient allocation of resources would depend on

- the financial capability of the government to provide it for free
- whether the government is able to estimate the value of MEB accurately
- whether the deadweight loss of overconsumption will be large if there is free provision
- whether the issue of the presence of positive externality or imperfect information is a more pressing problem to solve.

If the deadweight loss due to overconsumption as a result of free provision is limited and that the government has the financial capability to provide it for free, then it would be perhaps the best method among all the available policies.

In addition, the problem of imperfect information is not solved even with free provision. Thus, the government has to implement a mixture of policies such as partial subsidy and education to ensure that both the issue of positive externality and imperfect information will be tackled.

Marking Scheme

L3	For a well-developed explanation of how subsidies to provide free entry to art galleries can achieve efficient allocation of resources with limitations provided. Alternative policies are also provided and well explained. <i>*One of the alternative policies explained must focus on reducing imperfect information.</i>	9-11m
L2	An unclear explanation on whether subsidies to provide free entry to art galleries and an alternative policy can help achieve efficient allocation of resources. Max of 7 marks for a good explanation on how free entry will solve market failure with limitations explained.	6-8m
L1	Descriptive answer lacking in economic analysis.	1-5m

E2	• Substantiated judgement	3-4m
E1	• Unsubstantiated judgement	1-2m

2017 JC2 H1 Econs Prelim Exam

Suggested Answers for Question 4

- a) Explain how standard of living is measured in an economy. [10]
- b) Discuss whether an improvement in trade balance will help to achieve a higher standard of living in an economy. [15]

Introduction

The term Standard of living (SOL) is broad and is usually examined in terms of material SOL and non-material SOL. The material SOL measures the quantity and quality of goods and services accruing to each person in the country. The non-material SOL measures the intangibles and focuses on the quality of life.

Body – Measuring material SOL

Material SOL can be measured using nominal GDP. Nominal GDP is a national income accounting statistic evaluated at current market prices reflects the money value of all goods and services produced within the territory. Such a statistic is also known as "*current dollar GDP*". *Nominal* GDP estimates reflect the money value of all goods and services produced within the territory but have not been adjusted for price changes. Within the year, there could have been actual increases in output or price increases (eg. inflation) or both. Hence in times of inflation, nominal GDP will increase BUT this may have no positive impact on the amount of goods and services available overtime because no additional goods may have been produced. The magnitude of the increase in nominal GDP estimates during times of inflation may also be due to higher prices rather than the increase of output.

Real GDP on the other hand, measures the money value of all goods and services produced within the territory adjusted for price changes. Hence if there is a rise in real GDP, it is definite that there has been an increase in physical output.

More precisely, real GDP per capita or real GNP per capita are used as we try to measure the material standard of living each person has.

$$\text{Real GDP per capita} = \text{Real GDP} \div \text{Population size}$$

On average, people in high GDP per capita countries enjoy larger, better-constructed, and more comfortable homes, higher quality food and clothing, a greater variety of entertainment and cultural opportunities, better access to transportation and travel and other communications, indicating a higher material standard of living.

The Real GDP pc of a country may have increased over time, however it is important to note that the national pie may not be divided equally among the population of the country despite the higher Real GDP pc overtime. Hence although more goods and services are available, it may not be equally accessible to all.

If the increase in national income is accrued to a minority, this does not mean that everyone is better off. Thus it would be correct to say that more goods and services are accessible to the minority only. In this scenario, although the Real GDPpc may be higher, the income is not evenly distributed and hence the conclusion drawn from the Real GDPpc that each person is now better off may be misleading. Hence it is important to consider the distribution of income before concluding on the welfare of the residents of a country.

The Gini coefficient is an inequality indicator which measures the inequality of income distribution in a country. It varies from zero, which indicates perfect equality, with every household earning exactly the same, to one, which implies absolute inequality, with a single household earning a country's entire income. Hence a country with higher Real GDPpc as well as a smaller Gini coefficient overtime shows a more reliable conclusion about material SOL improvements in general than one with a larger Gini coefficient.

Body – Measuring non-material SOL

The non-material SOL focuses on the life expectancy, standards of education, health, hygiene in the country & other social indicators such as the amount of leisure time, divorce rates etc.

The qualitative aspect of SOL cannot be captured by output or income figures as the average person's well-being is not determined solely by the quantity of goods and services he can consume. Thus there is a need to look at qualitative indicators like the number of leisure hours the average person enjoys.

Measuring leisure hours can provide an indication of the non-material SOL. The fall in leisure time may result in more people falling ill due to being overworked as well as less likely to gain access or enjoy the available goods and services or spend time with family and friends. This may have social implications. Thus the quality of life i.e. the non-material aspect of life may be affected. Similarly the working hours may not have changed but the working conditions could have gotten better (or worse) which may have an impact on the non-material aspect of life.

Measuring pollution level can provide an indication of the non-material SOL. A higher pollution level if unaddressed may also reduce the quality of life. People may be faced with health issues that may arise from water or even air pollution. Again, although a larger real GDPpc from increased production of goods would imply a higher material SOL, the increasing negative externality due to the increased production would result in a lower non-material SOL.

Conclusion

Many ideas have been developed and promoted, to complement the GDP figures with other indicators of welfare to better reflect both material and non-material aspects of life or the quality of life for policymaking. An example would be a composite indicator such as the Human Development Index (HDI).

The HDI is a simple average of three indicators of development designed to capture three key components of human development:

1. Life expectancy at birth
2. Education attainment (adult literacy and years of schooling)
3. GDP per capita (measured using PPP exchange rates).

A composite index therefore may provide a more complete measurement that includes both the material and non-material aspects of SOL.

L1	- An answer that lacks the use of relevant economic concepts - Largely irrelevant answer - Listing of points without explanation. - Glaring conceptual errors.	1 - 4
L2	- An answer that uses relevant economic concepts	5 - 6

	<ul style="list-style-type: none"> • Real GDP per capita • Other indicators <p>- Some explanation (but with gaps) of real GDP per capita and other indicators in assessing rise in SOL.</p>	
L3	- Good elaboration of the indicators that can be used to assess material and non-material SOL with some mention of composite indicators.	7-10

b) Discuss whether an improvement in trade balance will help to achieve a higher standard of living in an economy. [15]

Introduction

The balance of the export and import values is called the balance of visible trade or visible trade balance. A trade surplus is when the value of visible exports exceeds the value of visible imports. A trade deficit is when the value of visible exports is less than the visible imports. An improvement in the trade balance may have positive and/or negative impacts on the material and non-material standard of living.

Body – Improvement in trade balance helps to achieve a higher material standard of living

Actual growth occurs when there is an improvement in trade balance. With reference to the AD-AS framework, an increase in $(X-M)$ that gives rise to an increase in real national income on the horizontal axis due to a rightward shift of the AD curve.

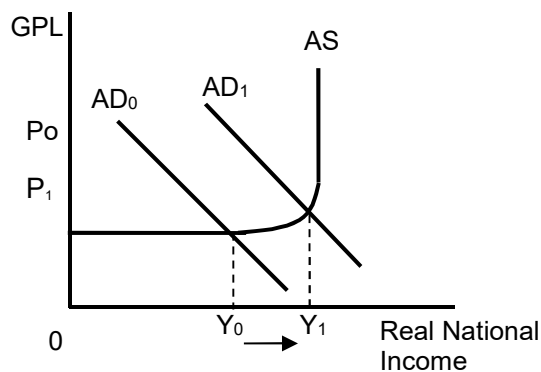


Figure 1a: Actual growth due to shift in AD

Provided economic growth outstrips population growth, it will lead to higher real income per head. Since labour is a derived demand, when demand for goods and services increase, demand for labour increases, creating more employment opportunities. If national incomes rises, government can redistribute incomes from the rich to the poor without the rich losing. For example, as people's income rise, they automatically pay more taxes. This extra revenue for the government can be spent on programmes to alleviate poverty. All these leads to higher levels of consumption of goods and services and higher material standard of living.

Body – Improvement in trade balance helps to achieve a higher non-material standard of living

With economic growth due to an improvement in trade balance, cyclical unemployment will fall as firms will hire more workers in export-oriented industries to increase production since demand for labour is a derived demand. The fall in unemployment could possibly lead to fewer social problems like falling crime rates and hence rise in non-material SOL.

A higher income from an improving trade balance may also allow greater access to better healthcare resulting in a longer life-expectancy hence rise in non-material SOL.

Higher national income may allow governments to improve on the standard and increase the access of education leading to an improvement in non-material SOL.

Body – Improvement in trade balance may not achieve a higher material standard of living

Improvement in trade balance leads to economic growth. An economy that is near full employment enjoying high economic growth leads to demand pull inflation. Demand-pull inflation is usually the consequence of high growth as AD rises at a rate that is not matched by the increase in output of goods and services (ie, AS). Also, wages tend to go up when the economy is near full employment as resources become scarcer leading to wage-push inflation. A sustained increase in general price level will lead to a deterioration of material SOL.

Improvement in trade balance due to changing CA may result in structural economic changes. Different groups of labour with different skills and education will benefit differently. For example, Singapore moving away from low-end manufacturing result in many low skilled and educated workers losing their jobs. On the other hand, other workers in sunrise export oriented industries will benefit from more job opportunities and higher salaries. Thus different groups will experience differing rates of returns, resulting in widening disparity in income hence worsening material SOL.

Body – Improvement in trade balance may not achieve a higher non-material standard of living

A higher demand for a country's exports from an improvement in trade balance may result in an increase in the working hours of the population. The opportunity cost of increasing working hours is leisure time. The fall in leisure time may result in more people falling ill due to being overworked as well as less likely to gain access or enjoy the available goods and services or spend time with family and friends. This may have social implications. Thus the quality of life i.e. the non-material aspect of life may be negatively affected.

An improvement in trade balance can also result in greater pollution level due to the increased levels of non-environmentally friendly production. A higher pollution level if unaddressed may reduce the quality of life. People may be faced with health issues that may arise from water or even air pollution. The increasing negative externality due to the increased production would result in a lower non-material SOL.

Suggested evaluation

Evaluate the overall impact of an improvement in trade balance on SOL

- Different reasons for BOT improvement may have difference outcomes
 - Acquiring a new CA?
 - Depreciation?
 - High investment in R&D?
 - Expenditure reducing/switching policies, protectionism?
 - FTAs?
- Short term vs Long term impact
- Economy at different stages of development

L3	For a well-developed explanation of how an improvement in BOT will affect material and non-material standard of living positively and negatively.	9-11m
L2	For an under-developed explanation of how an improvement in BOT will affect material and non-material standard of living positively and negatively. Max of 7 marks for one sided discussion – Only material or non-material SOL OR only improvement or deterioration of SOL	6-8m
L1	Descriptive answer lacking in economic analysis.	1-4m

E2	• Clear judgement with strong substantiation	3-4m
E1	• Judgement with some clarification and substantiation	1-2m