H2 ECONOMICS – PROMOTIONAL EXAM 2019 QP

Section A: Case Study Question [30m]

Economic growth in Ethiopia and South Korea



Chart 1: Real GDP growth rate (%) for Ethiopia

Source: Federal Reserve Bank of St. Louis, Federal Reserve Economic Data

Extract 1: Ethiopia is Africa's fastest-growing economy

Ethiopia has an image problem. For decades, the mere mention of the country has conjured up images of famine and conflict. But a new Ethiopia is emerging from troubled times and the latest International Monetary Fund (IMF) forecast says Ethiopia will be the fastest-growing economy in sub-Saharan Africa in 2018.

Ethiopia's rise has been largely driven by an increase in industrial activity, including investments in infrastructure and manufacturing. Much of the investment in Ethiopia has come from overseas, especially China. Ethiopia's growth has been fuelled by Chinese firms building factories, bringing in new technology that raises labour productivity. Despite its high rate of growth, Ethiopia still has plenty of spare capacity.

Adapted from World Economic Forum Regional Agenda, 04 May 2018

Extract 2: Ethiopia's economic miracle is an environmental tragedy

Ethiopia is doing all it can to attract foreign investors, with water and electricity almost free and rents at 10 percent of market rate. France's Castel Group has established vineyards, and the Dutch multinational Afriflora Sher has set up the world's largest rose farm, employing 1,500 workers who earn US\$83 a month. These companies pay nothing for water from the Bulbula river, which flows into Lake Abijatta.

But the rural population and the environment are the biggest losers. More than half of Lake Abijatta has disappeared in the past 30 years, and fish have vanished because of the remaining water's

increased salinity, as a result of the activities of these foreign businesses. The other lakes in the central part of the Great Rift Valley (Ziway, Shalla, and Langano) face the same threat.

Two million people depend on Lake Ziway, the region's only freshwater lake, but its level is falling relentlessly. Lake Ziway's water quality is deteriorating, driving treatment costs up. Amdemichael Mulugeta of the non-governmental organisation Wetlands International said, "At this rate, the water won't be drinkable in a decade, and the lake will be gone in 50 to 70 years. The town of Ziway used to use lake water, but now purification would be too complex to be done locally and, above all, too costly."

Source: The Nation, 01 May 2019

Extract 3: Rising inequalities in South Korea

Just a few decades ago, South Korea was seen as a model for achieving both growth and equity. In the past half-century, South Korea has gone from being one of the poorest societies in the world to an advanced industrialised economy. During the industrialisation process, the government promoted the large conglomerates (LCs) that came to be known as *chaebols*, which operate many business lines simultaneously and are often controlled by a single owner or family. These *chaebols* expanded quickly as they grew by exporting to foreign markets.

As a result of rapid *chaebol*-led industrialisation, South Korea's small and medium-sized enterprises (SMEs) became technologically outdated and domestic oriented. The low labour productivity of SMEs contributes to a wide salary gap between SMEs and LCs. This is one reason why South Korea's high growth in recent years have been accompanied by rising income inequality.

Adapted from East Asia Forum, 10 Aug 2016, and The Guardian, 02 Aug 2017

Extract 4: South Korea's soaring minimum wage

South Korean workers don't often have cause for cheer. They slog for more hours than their counterparts in any other member of the OECD, apart from Mexico. Yet the worst-off will soon be far better rewarded for their toil. Next year the country's minimum wage will leap by 16.4 percent to 7,530 won (US\$6.65) an hour, the most vigorous hike since 2000. The higher minimum wage is the most striking component of President Moon Jae-in's plan to deliver what he calls "people-oriented growth". It will probably reduce income inequality, too. Mr Moon also argues higher wages are good for their own sake, saying a 10,000-won minimum wage will give workers "the right to live like humans".

Small businesses claim the proposed increase in minimum wage will force them to lay off workers, as they are often unable to pass on the higher costs to their customers. A survey by the Korea Federation of Micro Enterprise found 92.4% of respondents are considering cutting back on workers. This could pose a serious problem, since most people on the minimum wage work for smaller firms, not large conglomerates such as Samsung.

The South Korean government has planned 3 trillion won in subsidies for small businesses to cushion the impact of minimum wage hike. While the government has experienced budget surpluses in recent years, shrinking tax revenues and increasing expenditures are expected in the future, with an increasingly ageing population and global uncertainties.

Adapted from The Economist, 25 Oct 2017, and Reuters, 9 Nov 2017

Questions

- (a) Describe the change in real GDP of Ethiopia from 2010 to 2018. [2]
- (b) Using an AD-AS diagram, explain how "Chinese firms building factories, bringing in [6] new technology that raises labour productivity" (Extract 1) has affected Ethiopia's GDP.
- (c) Using demand and supply analysis and evidence from Extract 3, account for the [4] wage differential between the workers in *chaebols* and those in SMEs in South Korea.
- (d) With reference to Extract 4, discuss the impact of South Korea's increase in minimum [8] wage on workers, firms and the government.
- (e) To what extent does actual growth for a country mean that its residents are enjoying [10] a higher level of well-being?

[Total: 30]

Section B: Essay questions [50m]

Answer two questions.

1. Recent years have seen a significant expansion of the healthcare services [25] market in Singapore. These services range from clinics for normal colds to expensive diagnostic check-ups for the rich; palliative care for the aged and complex surgical services that require high level of technology.

Discuss the demand and supply factors that determine the output for healthcare services and evaluate which is the most important factor.

[**Note**: 25m single stem essay questions exist in the old syllabus, but not in the current syllabus, where essay questions come with two parts - part (a) carrying 10 marks and part (b) carrying 15 marks. That said, the content tested here is still relevant to your syllabus.]

- 2. (a) Explain why there is allocative inefficiency in the market for alcohol. [10]
 - (b) Discuss the view that government intervention in the market for alcohol may not [15] always result in an improvement in efficiency.
- 3 (a) Explain the factors that affect the components of aggregate demand. [10]
 - (b) Discuss the effect of an increase in export revenue on the national income of [15] different countries.

----- End of paper ------

H2 ECONOMICS – PROMOTIONAL EXAM 2019 SUGGESTED ANSWERS, MARK SCHEMES & MARKERS' COMMENTS

Section A: CSQ

(a)	Describe the change in real GDP of Ethiopia from 2010 to 2018.	[2]
	Real GDP for Ethiopia increased [1] at a decreasing rate [1] from 2010 to 2018.	
	Markers' comments:	
	Content Change in GDP levels over time (each year) gives rise to GDP growth rates per year. As long as it is above zero, GDP levels have risen.	
	Skills	
	 A few students are still not sensitive to whether the data/question specifies GDP level or growth. 	
	 A few students segmented and commented on the rate of change in real GDP for each time period 	
	 Some only said GDP increased when 2 marks is allocated to the question. 	
(b)	Using an AD-AS diagram, explain how "Chinese firms building factories, bringing in new technology that raises labour productivity" (Ext 1) has affected Ethiopia's GDP.	[6]
	Chinese firms building factories in Ethiopia has led to an increase in foreign direct investment (FDI) flowing into Ethiopia, causing an increase in Ethiopia's AD since I is a component of AD . Since there is spare capacity in Ethiopia's economy, AD curve rightwards from AD_0 to AD_1 [1] on the horizontal portion of the AS curve.	
	The rise in AD causes planned expenditure to exceed output produced by firms, resulting in an unplanned fall in firms' inventories . [1] Firms respond by increasing production and hiring more FOP, causing real GDP to increase by a multiple from Y_0 to Y_1 through the multiplier effect. [1]	
	Since FDI brings in new technology that raises labour productivity, each unit of labour can produce more output. This decreases the unit cost of production , causing AS to increase , leading to a fall in GPL within the economy. Through the real balances / international substitution / interest rate effect, consumption, investment and export expenditure will rise, resulting in a movement along the AD curve , causing real GDP to increase from Y ₁ to Y ₂ .	
	OR	
	Since FDI brings in new technology that raises labour productivity, each unit of labour can produce more output. This increases the productive capacity of the economy, causing AS to increase . This leads to the full employment level of GDP to rise from Yf to Yf' .	



(c)	Using demand and supply analysis and evidence from Extract 3, account for the wage differential between the workers in <i>chaebols</i> and those in SMEs in South	[4]
	Korea.	
	The expansion of chaebols led to higher production levels and hence a higher derived demand for workers in chaebols. [1]	
	At the same time, lower productivity of workers in South Korea's SMEs led to a lower demand for workers in SME. [1]	
	There is thus a higher demand for workers in chaebols relative to those in SMEs. [1] Hence, the wages for workers in chaebols will be relatively higher than those in SMEs, resulting in the wage differential between the workers in chaebols and SMEs in South Korea. [1]	
	Markers' Comments Content	
	• There was weak interpretation of case evidence - Some students quoted the case that chaebols are usually owned by a single owner and hence the supply of labour is low. Some said that chaebols produced for foreign markets and foreign markets are more lucrative so workers earn higher pay.	
	 Many students jumped in to conclude that lower productivity in SMEs and advanced industrialisation in chaebols meant that SMEs hire lower skilled workers, and chaebols hire higher skilled workers. Hence, the wage differential is due to the differences in skills. 	
	• Some students wrote "supply of chaebols" and "demand of chaebols" (and for SMEs), and it is not clear what exactly they are referring to - Is it supply of <i>workers</i> in chaebols? Or <i>goods and services</i> produced by chaebols?	
	 Students do not seem clear between the market for labour in South Korea and market for goods that chaebols and SMEs sell. They usually end up talking about the supply and demand of the goods, with no link to the labour market. 	
	 Some students seem to interpret revenue of the infits as the wages of the firms. They talked about how chaebols collect higher revenue from selling their goods at higher prices (due to higher demand), and hence collect higher wages. 	
	• A few students interpreted wage differential as income inequality, and then quoted that chaebols are owned by a single owner which leads to income inequality.	
	Skills	
	• The question asks to account for wage differential - this refers to the <u>difference</u> in the level of wages. Answers that explain increase/decrease in DD and wages are not accurate - DD and wages can increase but still remain lower than the other.	
(d)	With reference to Extract 4, discuss the impact of South Korea's increase in minimum wage on workers, firms and the government.	[8]
	With a minimum wage, workers are guaranteed a wage above the market equilibrium wage We, through minimum wage rates legally imposed by the government. The increase in minimum wage in South Korea is likely to affect wages (and hence consumption ability) as well as employment for workers, profits of firms, and the government's microeconomic goals.	

Impact on workers

[P] The increase in minimum wage will benefit some workers but negatively impact others.

[E+E] South Korea's increase in minimum wage from Wmin to Wmin' will increase the minimum permissible wage that firms may legally pay to workers, causing workers to be guaranteed a **higher wage rate**, **Wmin'** (Ext 4 para 1). [L] The higher wage will increase workers' ability to **consume more goods and services**, allowing them to **improve their material aspect of standard of living**.

[E+E] However, not all workers will experience higher wage rates. An increase in the minimum wage rate would result in a fall in no. of workers demanded by firms from Qd to Qd', and a rise in no. of workers willing to supply their labour, from Qs to Qs'. There increases the surplus workers, [L] causing more workers to be **unemployed**, as reflected by Qd'-Qs' in the diagram below.

Wage



[Ev] This is **especially so for workers in smaller firms** as they are unable to raise prices of their goods and services to cover the higher marginal cost of production from the higher wages. A survey found 92.4% of respondents (small/micro firms) are considering cutting back on workers. (Ext 4 para 2).

Impact on firms:

[P] The increase in minimum wage will negatively impact firms.

[E+E] An increase in minimum wage raises the wage rates for affected firms, causing **cost of production to increase**, resulting in **lower profits** for the affected firms, assuming that they are not able to pass on the higher costs to consumers by raising prices of their goods and services. [L] This will negatively impact the firms.

[Ev] This impact is especially felt by smaller firms as "most people on the minimum wage work for smaller firms" (Ext 4).

Impact on government

[P] The increase in minimum wage will improve equity in the country.

[E+E] Given that most people on the minimum wage work for smaller firms, not large conglomerates (Ext 4) and that wages for workers in the smaller firms are relatively lower than those in large conglomerates (Ext 3), the higher minimum wage is likely to reduce the wage differentials between these groups of workers, reducing the income inequality in South Korea. With higher wages, these workers will have higher purchasing power, and will be able to consume more goods and services especially basic necessities, giving them "the right to live like humans", [L] **reducing inequity** in the country.

[P] However, the increase in minimum wage is likely to **worsen allocative inefficiency.** [E+E] Assuming that the labour market is initially allocative efficient

without a minimum wage, the efficient quantity of labour in the labour market is at Qe. The increase in minimum wage to Wmin' decreases the quantity of labour employed further from Qd to Qd'. [L] This worsens allocative inefficiency and results in a greater welfare loss of area abe, as compared to the initial welfare loss of area cde at the initial minimum wage Wmin.

Conclusion:

The impact of the increase in minimum wage would be mixed – some workers would gain higher wages while others will lose their jobs; firms (especially SMEs) will suffer a loss in profits; the government would achieve improved equity but worsening allocative inefficiency.

However, since the South Korean government plans to implement a subsidy (Ext 4) to mitigate the negative impacts of raising the minimum wage, then the negative impacts of loss in profits for firms and unemployment for workers would be reduced. Since the government has experienced budget surpluses in recent years, the impact on government expenditure is unlikely to be significant in the short term. However, in the long term, the government is likely to experience a greater strain on its budget given its ageing population. In addition, the increase in unemployment in affected industries will also lower income tax collected, lowering government's tax revenue. As such, the implementation of subsidies may be financially unsustainable in the long term.

Ma<u>rk Scheme</u>

	Levels	Descriptors	Marks
	L1	Answers show some knowledge of the impact of an increase in minimum wage, but is largely descriptive or lifted from extract with little explanation.	1 – 3
	L2	Clear and accurate explanation of the impact of an increase in minimum wage on all 3 agents, with reference to case evidence.	4 – 6
	E	Well-substantiated evaluative comments on the extent of the impact of a minimum wage on the different agents / considers factors by which a judgement can be on the extent of the impact.	1 – 2

Markers' Comments

Content

- A few scripts brought in the change in TR (due to fall in SS arising from rise in MCOP, and assuming PED of the goods produced by different firms) as the impact on firms. It should be noted that the focus should be on the <u>direct</u> impact of the minimum wage on firms (and not indirectly via impact in the goods market). The direct impact on a minimum wage is that firms' cost of production increase. Students should also go on to discuss how profits will be affected. Profits = TR - TC.
- A few scripts attempted to analyse the impact via firms' and workers' surplus. While the approach is theoretically sound, candidates who chose this approach struggled to follow through with the full analysis accurately (e.g. in order to assess impact on workers' surplus, assumptions of wage elasticity of supply need to be made).
- Several answers incorrectly claimed that the "surplus" labour will be hired by the government.

- Diagrams drawn should be applied to the context of labour market that means the y-axis should be labelled as wage rate not price.
- Productivity and production are not the same thing and cannot be used interchangeably. Productivity refers to output per unit of input, production refers to total output.
- Several answers also stated that when firms lay off workers, it results in a fall in productivity for the firm. Again, this shows a misunderstanding of what productivity means.
- Answers need to clearly link to impact on a specific agent. For e.g., when answers argue that income inequality is reduced, which agent does it link to? Workers are not so much concerned about inequality per se, they are concerned about how much they earn. It is the government who is concerned about equity and efficiency.
- Some students argue that reducing income inequality (which improves equity) would allow government to maximise society's welfare (efficiency). These are two separate microeconomic goals which should not be mixed up.

Skills

- Many students were not careful in reading that the question asked for the impact of an <u>increase</u> in the minimum wage, not implementation of a minimum wage.
- Many students do not know what is the end point of their explanations. Since the question is on the impact of the economic agents, answers should focus on what these agents are concerned about - e.g. firms are concerned about profits (which is determined by costs and revenue), workers are concerned about (wages, employment etc.), the government is concerned about achieving their micro (efficiency, equity) goals in the context of this qn.
- The question asks for the impact of the increase in minimum wage, but many answers discussed the impact of the government subsidy. The subsidy is a supplementary policy that is added on, so answers should instead focus on the rise in minimum wage itself. The subsidy can instead be used as an evaluative comment on the extent of the impact of the rising minimum wage.
- Some answers even went on to discuss what the government should do, which is irrelevant to the question.
- Drawing a minimum wage diagram would be helpful in making the explanation more analytical. Otherwise, explanations often remain as descriptive or mere lifting of quotes from the extract. This is especially useful to explain that there will be a rise in unemployment, where the minimum wage diagram can show that there will be a surplus of workers in the labour market.
- Evaluation is lacking for most scripts. Since the question is asking for a discussion on the impact of the policy on various agents, students can comment on the extent of the impact on different agents or for different time periods (short term/long term).

(e)	To what extent does actual growth for a country mean that its residents are enjoying a higher level of well-being?	[10]
	Actual growth refers to an increase in actual national output, i.e. increase in real GDP, where real GDP measures the value of final goods and services produced by factors of production located within a country's geographical boundaries, during a period of time, discounted for inflation. Well-being refers to standard of living, which comprises of both the material and non-material aspect.	
	Body Thesis: Actual growth for a country means residents are enjoying a higher level of well-being	
	[P] With actual growth, residents would be able to enjoy a higher level of	
	material well-being. [E] For example, Ethiopia has been experiencing actual growth since real GDP growth rates have been positive as shown in Chart 1. This means that its real GDP is increasing. [E] A rise in real GDP would mean that national income is rising. Assuming that real GDP growth is greater than the population growth rate, there would be an increase in the average resident's ability to consume more goods and services, [L] hence reflecting an increase in material well-being.	
	Anti-thesis: Actual growth for a country may not mean that residents are enjoying a higher level of well-being	
	[P] Actual growth for a country may not mean that residents are enjoying a higher SOL as the increase in real GDP does not take into account changes in the composition of national income. [E+E] If the rise in real GDP is largely due to increases in investment in infrastructure and manufacturing, like the case of Ethiopia (Ext 1 para 2), then the rise in real GDP may not mean that there is a rise in current living standards of the residents. Current living standards depend on consumer goods but a rise in investment means a rise in capital goods, which are not for current consumption but used to produce other goods and services. This thus helps to increase future production and consumption leading to higher future standard of living, [L] instead of higher current standard of living.	
	[E+E] Similarly, if the rise in real GDP is largely due to the rise in exports, like in the case of South Korea (Ext 3 para 1), it will also not contribute to higher well-being if the income generated form exports is not spent on consumer imports. Residents may not necessarily be consuming more given that foreigners are the ones purchasing the exports and consuming them. [L] Thus the higher real GDP will overstate improvements in living standards.	
	[P] Actual growth for a country may not be reflective of a higher SOL for residents as it ignores changes in the distribution of income in the country. [E+E] While actual growth would lead to an increase in real GDP, it may not reflect an increase in income of all residents equally as the higher real GDP might not be equally distributed. For example, South Korea's high growth in recent years have been accompanied by rising income inequality (Ext 3 para 2). This would mean that the increase in real GDP is concentrated in the hands of the rich minority and [L] hence the well-being of the typical individual might not have improved at all.	
	[P] Actual growth for a country may not mean that residents are enjoying a higher SOL as the increase in real GDP may be accompanied by worsening non-	
	[E+E] Actual growth may be accompanied by higher levels of pollution. For example, in the case of Ethiopia, actual growth brought about by industrialisation has polluted	

lakes, causing water quality of the lakes to deteriorate (Ext 2 para 3). This affects the intangible aspects of residents' well-being as they may fall ill more often from consuming contaminated water and pollution would result in the deterioration of the quality of their environment, hence lowering their non-material well-being. Since real GDP figures do not take into account non-material well-being, this might offset the gains from higher material well-being, [L] and therefore residents might actually not be enjoying an overall higher SOL even if there is actual growth.

Conclusion

[Stand] Actual growth for a country does not necessarily mean that residents are enjoying a higher level of well-being.

[Substantiation] Actual growth alone is insufficient to reflect that SOL of residents have improved. Given that SOL comprises of both material and non-material aspect, actual growth, at best, only seeks to reflect the material aspect. In addition, given rising income inequalities, actual growth may not even accurately reflect the improvements in material well-being of residents in the country.

Whether actual growth reflects improvement in SOL of residents depends on the source of growth, where if actual growth is achieved through extensive exploitation of natural resources (like in Ethiopia) then perhaps the residents of the country may be unlikely to enjoy a higher level of well-being. Whereas if the actual growth is achieved through more sustainable means (e.g. improvements in productivity) then the residents are more likely to enjoy a higher level of well-being.

Another consideration would be whether the government implements policies to mitigate the negative consequences of actual growth like rising income inequalities and rising pollution. Given that the South Korean government implements policies like minimum wage to reduce the income inequality in the country, it ensures that actual growth is more evenly distributed, and hence may more accurately reflect improvements in SOL for the average resident in the country. Governments of relatively more developed countries like South Korea may have more resources and capabilities to address these issues compared to less developed countries like Ethiopia, as seen from how the Ethiopian government may not have the means to purify its polluted lakes as the process is deemed too complex and costly to be done locally.

Mark Scheme

Levels	Descriptors	Marks
L1	Answers show some knowledge about what affects well- being / living standards.	1 – 3
	Largely lifting from extracts, with little or no explanation of evidence.	
L2	Clear and well-explained answer that discusses how actual growth might / might not mean a higher level of well-being,	4 – 7
	Answer is balanced, considers both sides – how actual growth might or might not be reflective of SOL	
	Answer considers both material and non-material aspect of SOL	

E	Well-substantiated evaluation on the extent to which actual growth implies improvements in well-being. $1 - 3$
Marke	rs' Comments
•	Actual growth' is not an indicator that measures something, so it cannot "overstate" changes in SOL. Actual growth is a phenomenon. Some students argued that if the economy is at full employment, actual growth would only lead to inflation and no rise in real national income. Actual growth means rising real national income, so by definition if the economy is at full employment then actual growth cannot even happen. These students have equated actual growth with rising AD. Some students did not recognise that actual growth means real GDP has increased, and instead went on to argue that if GPL rises then actual growth does not necessarily mean improvement in material SOL. Actual growth does not mean real GDP per capita is rising.
Skills •	This question is not the same as a question that asks whether GDP is a good
•	indicator of SOL. Answers should be careful to not be phrased as answering whether GDP is a good indicator of SOL; the focus is on whether a country that has actual growth would actually enjoy a higher level of well-being or not. Evaluative comments made were often not directed at answering the question of whether actual growth means that residents are enjoying better well-being; instead, comments often went on about whether GDP is a good indicator of SOL and that other indicators should be used.
•	Many answers had no reference to case material at all, making the responses entirely theoretical and a regurgitation of prepared points.

Section B: Essay Questions

Recent years have seen a significant expansion of the healthcare services market in Singapore. These services range from clinics for normal colds to expensive diagnostic check-ups for the rich; palliative care for the aged and complex surgical services that require high level of technology.

Discuss the demand and supply factors that determine the output for healthcare services and evaluate which is the most important factor. [25]

[**Note**: 25m single stem essay questions exist in the old syllabus, but not in the current syllabus, where essay questions come with two parts - part (a) carrying 10 marks and part (b) carrying 15 marks. That said, the content tested here is still relevant to your syllabus.]

R1: Explain demand factors that determine the output for healthcare services. **R2**: Explain supply factors that determine the output for healthcare services.

Ev: Evaluate which is the most important factor in determining the output for healthcare services.

Introduction

The market for healthcare services can be analysed using the demand-supply model. Demand refers to the quantity of a good or service that consumers are willing and able to buy at various prices, in a given time period. Supply refers to the quantity of a good or service that producers are willing and able to sell at various prices in a given time period. The significant expansion of the healthcare services market is likely to have been caused by a rise in both demand and supply.

Body

Explanation of factors that drive rise in demand

[P] The rise in demand could be due to a rise in affluence / income levels.

[E+E] The rise in income will increase the ability of households to consume healthcare services, given that healthcare services in general are normal goods. This will lead to an increase in demand, reflected by a rightward shift in the demand curve as the quantity of healthcare services demanded at every price level increases.

Income elasticity of demand (YED) can be used to determine the extent of the increase demand for healthcare services due to a rise in income. YED measures the responsiveness of demand to a change in income, ceteris paribus.

[Ev] The rise in demand will be more significant for expensive healthcare services like diagnostic check-ups. Given that there is less need to consume such healthcare services, the degree of necessity is much lower compared to clinic services when people do catch a cold, or surgical services when people are indeed in need of it because they contract certain diseases, therefore such services can be considered luxury goods, with YED >1. As such, there will be a more than proportionate rise in demand as income levels rise, leading to a significant rightward shift in the demand for healthcare services like diagnostic check-ups.

[P] The rise in demand could be due to a rise in population in general or a rise in ageing population. [E+E] As the general population rises, there will be an increase in the demand for most goods and services, including healthcare services. For example, demand for general healthcare services for illness such as the common cold and flu will rise with an increase in population. As the general population rises with more childbirths, there will be also a rise in demand for vaccinations and general medicine. Changes in population structure will also increase the demand for certain types of healthcare services. With the rise in ageing population, the demand for healthcare services such as palliative healthcare will also rise, as the elderly are more susceptible to health issues due to their weaker immune system. This will lead to an increase in demand and cause a rightward shift in the demand for healthcare services.

[Ev] This is an important factor driving the demand for healthcare services for countries where the general population is rising rapidly, like India. For countries that are experiencing ageing population like Japan and Singapore, this is also an important factor as the need for healthcare rises as the population ages, in particular the demand for palliative healthcare for the aged.

[P] The rise in demand could also be due to supplier-induced demand for more complex surgical procedures and medicine and diagnostic check-ups.

[E+E] As doctors tend to have more knowledge about complex surgical procedures and medicine compared to consumers, consumers may seek second opinions and tend to be more receptive to doctors' recommendations for such healthcare services as well as additional diagnostic checks. Hence the demand for healthcare services as a whole would rise, causing a rightward shift in demand for healthcare services.

[Ev] This may be an important factor driving the demand for healthcare services like diagnostic check-ups, for a country where the population is more affluent and hence more willing and able to pay more attention to their health condition.

Explanation of factors that drive rise in supply

[P] The rise in supply could be due to improvements in technology.

[E+E] As global medical technology improves, the marginal cost of providing expensive and complex surgeries and other medical healthcare services would fall. This fall in the marginal cost of production would increase the total profits for firms. Hence, firms will be more willing to supply the good at every price level, leading to a rise the supply as shown by a rightward shift in the supply curve.

[Ev] This factor is most important for healthcare services that are more complex and requires high level of technology in its provision. For example, laser surgery or the use of various treatments for cancer that rely heavily on complicated machinery.

[Ev] However, this rise in supply may be offset by the shortage of skilled personnel like doctors and nurses; as well as technicians who are able to operate advanced machinery.

[P] The rise in supply could also be due to government policies to ensure sufficient healthcare for the population.

[E+E] The Singapore government has implemented numerous policies to increase the availability of basic healthcare and care for the aged, as well as to enhance the quality of healthcare services available to the citizens. Building more hospitals and polyclinics would directly increase the supply of healthcare. In addition, an increase in government subsidies for healthcare would further increase supply of healthcare. A subsidy given to healthcare providers will lower the marginal cost of production and hence reduce the price producers require for producing any given amount of healthcare services, thereby increasing the supply of healthcare.

[Ev] Government subsidies is especially important in countries where the cost of healthcare provision is high. Without such subsidies that are usually given to the poorer households, they may not even be able to afford basic healthcare services.

Explanation of adjustment process (reinforcement of DD & SS to bring about a more significant rise in output for healthcare services market)

[P] The combination of a rise in demand and rise in supply would lead to a significant increase in the output of healthcare services.

[E+E] The rise in demand shifts the demand curve rightwards from D1 to D2, and the rise in supply shifts the supply curve from S1 to S2. Since both a rise in demand and supply of healthcare services lead to an increase in output of healthcare services, they reinforce each other, [L] causing the equilibrium quantity to rise significantly.

The impact on equilibrium price will depend on the extent of shifts in demand and supply of healthcare services. Given that there is little need to consume more quantities of basic healthcare services in general if one is not in need of it due to illness or diseases, demand side factors like a

change in income is likely to result in a less than proportionate increase in demand for general healthcare. Therefore, supply factors like technological advancements and government subsidies are likely to play a more important role in the rapid expansion of the healthcare services market. Hence, with a rise in demand and supply, at the original price P1, there would be a surplus, causing a downward pressure on prices.

As prices fall, the quantity demanded of healthcare is likely to rise and quantity supplied of healthcare is likely to fall, until a new equilibrium is reached when the new demand D2 equals the new supply S2. Therefore, the rise in demand and supply will cause equilibrium price to fall to P2 and [L] equilibrium quantity to rise significantly to Q2.



Evaluation / Conclusion (accept answers that are able to justify the most important factor)

[Stand] Whether demand or supply factors are more important in determining the output for healthcare services varies from country to country, and may also vary depending on the type of healthcare services.

[Substantiation] In Singapore, supply factors are more likely to play an important role in the rise in healthcare services due to the high cost of provision, which includes cost for training of medical personnel, purchase of equipment and land space. As it takes time to train medical expertise like doctors and build new hospitals, the supply for healthcare is likely to be price inelastic, especially in the short run. This means that when the price of healthcare rises, the quantity supplied would rise by less than proportionate to the rise in price, ceteris paribus. Thus, any rise in demand would only lead to significant rise in prices of healthcare. Hence, the increase in supply to meet any rise in demand would be important, as a significant rise in supply would be needed to bring about the large expansion in the healthcare services market. Without government policies in place to provide more healthcare services, there will not be a significant expansion of the healthcare services market in Singapore and hence supply factors is likely the main contributing factor to rising healthcare services in Singapore.

The relative importance of demand and supply factors may also differ for different types of healthcare services. For expensive diagnostic checks that do not require high level of technology, a rise in income may be a more important factor in driving the overall increase in output of such services as they tend to be less of a necessity, and hence demand is likely to increase more than proportionately to the rise in income levels.

On the other hand, supply factors like technological advancements may be a more important driver for the output of complex surgical services that require high level of technology. Demand for complex surgical services may be relatively more price elastic as they are usually expensive and take up a

larger proportion of consumers' income. As such, a rise in supply due to technological advancements that cause a fall in price is likely to result in a rise in quantity demanded more than proportionate to the fall in price, ceteris paribus, causing a significant rise in the output for such complex surgical services.

Mark Scheme

Knowledge, Application/Understanding and	Analysis	
For an answer that applies thorough economic factors that affect the change in output of consideration of the context of healthcare marke of elasticity concepts (PED, PES, YED) in the a	analysis of demand and supply healthcare services. Stronger et. Good application of a number analysis.	18 - 20
For an answer that uses contextualised deman- how the factors affect the changes in output. Att in the analysis.	d and supply analysis to explain empts to use elasticity concepts	15 - 17
L2 For an answer that explains demand and supp changes in output, but with little consideration / a when analysing the factors influencing the char At least 3 factors and covers both DD & SS with	ly factors and how that leads to application of elasticity concepts nge in output h adjustment but undeveloped	12 - 14
For an answer that mostly addresses the que demand or supply factors is undeveloped or de to how this leads to changes in output	estion, but explanation of either escriptive, with little explanation	9 - 11
L1 For an answer that shows some relevance and and supply factors – e.g. a largely unexplain output. Explanations largely inaccurate / has significant Limited in scope – considers only 2 factors that	knowledge of possible demand ed list; little or no reference to gnificant errors. affect DD and SS	5 - 8
For an answer that is mostly irrelevant. Shows s supply and elasticity concepts. Mere listing without explanation.	some knowledge of demand and of demand and supply factors	1 – 4

Note: Please ignore the above mark scheme as 25-mark questions are no longer tested in your syllabus.

E3	For an answer that uses contextualised analysis to support an evaluative conclusion on the relative importance of demand and supply factors in explaining the change in output of healthcare services.	5
	E.g. Considers different context (e.g. different types of healthcare services) and weighs the relative importance of factors in these contexts	
E2	For an answer which attempts to explain and support evaluative statement(s) on the relative importance of demand and supply factors in explaining the change in output of healthcare services.	3 – 4
E1	For an answer that gives an unsupported evaluative statement(s) on the relative importance of demand and supply factors in explaining the change in output of healthcare services.	1 – 2

Markers' Comments

Content

- Some students are still making the mistake that PED/PES would justify the extent of shift of DD/SS. PED/PES only examines the relative extent of change of P vs Qd or Qs, not extent of shift.
- PED may be used to show how much Qe rises when SS rise. Similarly PES may be used to show how much Qe rises when DD rise. In order for the rise in Qe to be substantial, given price inelastic DD and SS, the extent of shifts in both DD and SS will have to be more

significant so that the eventual rise in equilibrium quantity will be large (where preamble suggests rapid expansion).

- There were inaccuracies in the use of income elasticity concept (YED). Necessities have YED value of 0<YED<1. Normal goods have YED>0. Luxury goods have YED>1. When income levels rise, the extent of the increase in DD will depend on the type of healthcare service (necessity versus luxury services).
- Some answers covered many DD & SS factors but did not properly explain how these factors would affect the output of healthcare services. There is a need to show the shifts of DD & SS affecting Qe, and explain the process of changes in the market. The significant expansion should come from a reinforcement of rise in both DD and SS; particularly given that both the DD and SS are price inelastic.
- Some answers had scant explanations of DD/SS factors, giving one-liners that were more statements rather than developed explanations.

Skills

- Many students did not actually properly understand what the question is asking for and simply
 regurgitated what they recalled from other DD-SS essays. This was evident in things like
 explaining the extent of price change or change in TR, which is irrelevant to this question that
 is focused on output.
- Spamming elasticities with no application also showed mere regurgitation. Answers should have linked these concepts to explain why certain DD or SS factors were more important in affecting output changes.
- Some students did not use a DD-SS diagram at all in their answers. Diagrams will help to make your explanation clearer, when you explain the adjustment process.
- Evaluation was often not done well. Some answers merely repeated earlier points, or just stated that somehow one particular DD/SS factor is very significant without substantiation, or gave very illogical claims. It is useful to note that basing judgements on context is one way that evaluation can be done - e.g. different types of healthcare services (the preamble already deliberately highlighted this) or using the context of Singapore to emphasize particular issues like ageing population.

2a) Explain why there is allocative inefficiency in the market for alcohol.

R1: Explain one reason why there is allocative inefficiency in the market for alcohol (consumer ignorance).

R2: Explain another reason why there is allocative inefficiency in the market for alcohol (negative externalities).

Introduction

Allocative inefficiency is a situation in which the combination of goods and services produced does not maximise the total economic welfare of society. There is allocative inefficiency in the market for alcohol as alcohol is over-consumed due to consumers' failure to recognise the expected costs to themselves and the disregard for the costs incurred by third parties.

Body

[P] Consumer ignorance in alcohol consumption leads to allocative inefficiency.

[E+E] The consumption of alcohol causes long term harm to one's own health. Alcohol consumption increases the likelihood of further health complications in the future such as liver issues. Due to imperfect information, consumers may be **ignorant about these harms from alcohol consumption to themselves** and over-estimate the true value of alcohol consumption. The over-estimation of the value of alcohol consumption by the consumer causes the **perceived MPB to be greater than the true MPB** of alcohol consumption. Consumers would base their consumption decision on their perceived MPB, hence the perceived MPB is also the market demand curve.

Assuming no externalities, the MSB curve will be the same as the true MPB curve, while the MSC curve is the same as the MPC curve, which is also the supply curve. Left to market forces, market equilibrium output will be at Q, where demand curve intersects supply curve. The socially optimal output is at Q*, where MSC = MSB and society's welfare is maximised. Since the market equilibrium is at Q, there is an overconsumption of alcohol by QQ*units. For Q* to Q, the MSB (Area B) is lower than the MSC (Area A+B), which means that there is a net loss to society of area A. The overconsumption of QQ* causes a deadweight loss of area A to be incurred by society, as the total social costs of consuming Q* to Q units (areas A+B) is greater than the total social benefits (area B). [L] Thus, there is allocative inefficiency.



[P] Consumption of alcohol generates negative externalities, leading to allocative inefficiency.

[E+E] Consumption of alcohol generates negative externalities as consumers may act in ways that cause negative impacts to those not directly involved in the consumption or production, such as being a public nuisance or cause accidents when they drive after drinking, which causes medical costs to be incurred for these third parties as they get injured in fights or traffic accidents. This negative externality causes the marginal social cost (MSC) to be greater than the marginal private cost (MPC) of consuming alcohol, since the MSC includes both MPC and the marginal external cost (MEC). The existence of MEC causes MSC curve to be higher than the MPC curve, where MEC is reflected in the vertical distance between MSC and MPC curves.



Under the free market, consumer and producers pursuing self-interest would only consider their private costs and benefits. Left to market forces, the market equilibrium output is at Q, where DD = SS (which is also where MPC = MPB). However, the socially optimal quantity is at Q^{*}, where MSB = MSC and societal welfare is maximised. With the quantity of alcohol consumed exceeding the socially optimal quantity by QQ^{*}, there is a deadweight loss of area A as the total social costs of the QQ^{*} units of alcohol consumed (Area A+B) are greater than the total social benefits (Area B). [L] Hence, there is allocative inefficiency and society's welfare is not maximised.

Mark Scheme

Level	Descriptors	Marks
L1	Mere stating of definitions with little or no explanation.	1 - 4
	Answers contain conceptual errors.	
L2	Under-developed answer with gaps in the explanation of how consumer ignorance and negative externality leads to market failure in the market for alcohol	5 - 7
	OR	
	A good and thorough explanation of how either consumer ignorance or negative externality leads to market failure in the market for alcohol	
L3	Well-explained answer that demonstrates understanding that alcohol market fails because of consumer ignorance and negative externality.	8 - 10

Markers' Comments

Content

• The correct expression is "consumption of alcohol generates negative externalities", not variants like "alcohol has negative externalities".

- The contextual application of consumer ignorance and negative externalities were not done well for many answers. Contextual application should clearly show the harm to <u>themselves</u> that consumers are ignorant about, and the cost to <u>third parties</u> from alcohol consumption.
- Despite many similar practices done in the past, there remain many gaps in explanations. Free market eqm Q, socially optimal Q, welfare loss areas are often not explained.
- Conditions of the free market equilibrium and socially optimal equilibrium was often not included in the answers. Free market equilibrium occurs where DD=SS while socially optimal equilibrium occurs where MSC=MSB. Some students gave variants of the conditions which has no meaning (though diagrammatically correct) e.g. while diagrammatically MPB=MSB, saying that socially optimal level occurs where MPB = MSC does not have any meaning (why would society's welfare be maximised when marginal <u>private</u> benefits = marginal social costs?)
- The y-axis of diagrams drawn should be labelled as Cost/Benefit/Price, not just Price. The diagrams are illustrating cost and benefit curves as well, not just DD and SS.
- Marginal cost/benefit is not an area marginal means with one additional unit.
- There is confusion on what the various MB and MC are to consumers, producers, and society. In the diagram, the MPC curve represents MPC of production to producers, which is why it is equated to SS. The MPB curve represents MPB of consumption to consumers, which is why it is equated to DD. Both consumers and producers consider their respective MB and MC in the free market to give rise to the market eqm output where DD and SS intersect.

2b) Discuss the view that government intervention in the market for alcohol may [15] not always result in an improvement in efficiency.

R1: Explain the view that government intervention in the market for alcohol may result in an improvement in efficiency.

R2: Explain the view that government intervention in the market for alcohol may <u>not</u> result in an improvement in efficiency.

Introduction

When the free market fails to achieve allocative efficiency, the government would intervene in the free market to improve allocative efficiency. In the market for alcohol, the government can intervene by imposing a tax or a ban on alcohol, or discourage the consumption of alcohol through public campaigns. However, government intervention may not always result in an improvement in allocative efficiency.

<u>Body</u>

Thesis: Government intervention may result in an improvement in efficiency

[P] Government intervention through public education may lead to an improvement in allocative efficiency.

[E] The government can carry out public campaigns such as road shows to educate the public about the true costs of alcohol consumption by providing information about higher risk of contracting liver disease. This reduces the extent of information failure in the market and encourages the consumers to consume less of the good as they improve their individual decision making.

[E] With public education, consumers are aware of the true marginal private benefits of alcohol consumption. Hence, consumer's willingness to consume alcohol decreases, causing the demand for alcohol to decrease to the true MPB curve.

[L] The market equilibrium quantity matches the socially optimal quantity to be consumed at Q^{*}, resolving the allocative inefficiency problem.



Figure 1: Education to address ignorance problem

[P] Government intervention through imposition of a tax may result in an improvement in efficiency.

[E] Taxes are implemented on producers to discourage the production of good and services. To correct the problem of negative externalities in the market of alcohol, the government can impose a per unit tax on alcohol equal to the MEC at the socially optimally output, Q*. **[E]** The tax increases MPC from MPC to MPC', causing market supply to fall and hence prices of alcohol to rise. In response, consumers will reduce the quantity of alcohol consumed. Assuming that the government has perfect information and is able to estimate the MEC accurately, the tax will result in a fall in market equilibrium output from Q to Q*. **[L]**The new market equilibrium output coincides with the socially optimal output level Q*, and the deadweight loss to society (area A) would be eliminated and allocative efficiency will be achieved.



Figure 2: Tax to address negative externalities

Anti-Thesis: Government intervention may not result in improvement in efficiency.

[P] Government intervention may not result in an improvement in efficiency if the government has inaccurate information.

[E] The government may not be able to determine accurately the extent of MEC. This could be due imperfect information and difficulty to monetise the external costs on third parties. Thus, the amount of tax implemented on alcohol may not be accurate. If the government implements a tax that is too high, government intervention may actually lead to a less efficient outcome.



Figure 3: Tax on alcohol consumption

[E] In the case where the government implements too high a per-unit tax which exceeds the MEC significantly, it leads to MPC increasing to MPC", causing the new market equilibrium output to be at Q¹ in Figure 3 above. This leads to an under-consumption of Q¹Q*. The additional benefit possibly obtained from consuming Q¹Q* exceeds the additional cost incurred by society, resulting in a net benefit foregone of Area C. This deadweight loss exceeds that of Area D, which is the initial deadweight loss present in market, demonstrating that government intervention can possibly lead to a less efficient allocation of resources and hence may not result in an improvement in efficiency.

[L] Thus, government intervention may not result in an improvement in efficiency if the government does not have accurate information.

[P] Government intervention may not result in an improvement in efficiency if the policy does not tackle the root cause of the problem.

[E] At times, governments may seek short term solutions or "quick fixes", rather than taking a long term perspective in solving economic problems. However, the risk is that myopic decision-making will only provide short term relief to particular problems but does little to address the root cause of the issue.

[E] For example, besides taxes, another possible means of tackling the above market failure is through the imposition of a total ban on alcohol consumption in enclosed public areas. A total ban results in zero consumption as the good is no longer available for consumption.



Figure 4: Ban on alcohol consumption

While implementing a total ban means society will no longer incur the welfare loss of area B (Figure 4), it does not address the root causes of this problem (i.e. negative externalities from alcohol consumption and the issue of ignorance).

Moreover, the imposition of the ban may also cause allocative inefficiency to worsen as society loses the net social benefit from consuming at the socially optimal level Q^* . As explained in part (a), without government intervention, the market equilibrium quantity is Q, and the welfare loss is area B. When a total ban is imposed, the quantity of alcohol consumed is reduced to 0, and the original welfare loss of area B is eliminated. However, from output 0 to Q^* , total social benefit = 0CEQ^{*}, and total social cost = 0DEQ^{*}. Since output from 0 to Q^{*} is now no longer consumed with the total ban, the net total social benefit of area A is therefore lost. The total ban would therefore result in an overall welfare loss of area A-B, which is greater than 0.

[L] Thus, government intervention using short term solutions that do not address the root cause of the problem may not improve efficiency, and may even worsen the efficiency problem instead.

[P] Government intervention may not result in an improvement in efficiency if the costs of the intervention exceeds the benefits from the intervention.

[E+E] In the use of policies such as a ban, for a ban to be effective, there must be sufficient monitoring. If the monitoring costs incurred exceeds the benefit of the intervention which is the reduction in welfare loss in the alcohol market, the intervention leads to a net welfare loss for society.

[L] Thus, government intervention may not always improve allocative efficiency if the costs of the intervention exceed the benefits.

Note: Any 3 well-elaborated points would be sufficient.

Conclusion

[Stand] Government intervention in the market for alcohol may not always result in greater allocative efficiency because it depends on whether the measure(s) adopted by the government are appropriate in terms of the context of the market failure (causes of the problem and nature of the country).

[Substantiation] The use of public education addresses one of the root causes of the problem, i.e. imperfect information but it is not likely to succeed in improving allocative efficiency in the short term because it takes time to change consumers' attitudes towards alcohol. The use of sales tax addresses the other root cause of the problem, i.e. negative externalities. However, this measure could also be rather ineffective in discouraging alcohol drinking in the short term too due to the price inelasticity of demand for alcohol. Thus, effective intervention would require supplementing public education and sales with other policies like regulation. A total ban on alcohol consumption is very likely to lead to greater welfare loss for society. However, a government could opt for a partial ban (e.g. only in certain hours) to prevent an over-correction of the market failure.

The use of sales tax or partial ban would lead to the incurring of monitoring costs. As explained earlier, the costs of intervention could well exceed the benefits of the intervention. However, if the country is small geographically, such monitoring costs are not likely to be too high. As such, it is fiscally easier for the government to undertake sufficient monitoring to ensure the effectiveness of the measures and the benefit of the intervention is also more likely to exceed the cost of the intervention such that overall, it is possible for government intervention to improve allocative efficiency.

Thus, while government intervention dos not always lead to improvement in allocative efficiency, if the appropriate mix of measures are used given the context of the problem, government intervention in the alcohol market could improve society's welfare.

Mark Scheme

Level	Descriptors	Marks
L1	Mere stating of definitions with little or no explanation Answers contain conceptual errors	1-4
L2	Under-developed answer with gaps in the explanation on whether government intervention improves allocative efficiency. OR A good and thorough explanation of how government intervention may OR may not lead to improvement of allocative efficiency	5-7
L3	Well-explained and balanced answer that analyses whether government intervention improves allocative efficiency.	8-10
E1	Unsubstantiated judgement of the extent to which government intervention will lead to improvements in allocative efficiency	1-2
E2	Attempts to substantiate whether government intervention will lead to improvements in allocative efficiency	3-4
E3	Makes well-explained substantiated judgement on when government intervention is more likely to improve allocative efficiency by considering the context (alcohol market), different factors that affect the likelihood to which policies will improve efficiency e.g. accuracy of information available and nature of market failure etc.	5

Markers' Comments

Content

- Some answers do not explain well the workings of the policies, which limits the clarity of explanation as to why there is an improvement / worsening of efficiency.
- Diagrammatic analysis is helpful to illustrate the changes in society's welfare due to govt intervention.

Skills

- Many answers given were rehearsed responses discussing which policy the government should undertake, which is not what this question is asking for. Students must be sensitive to the differences in questions posed.
- Many answers equated no improvement in efficiency with not achieving allocative efficiency. They are not the same thing, and again shows regurgitation of answers instead of answering the given question.
- Evaluation was evidently lacking in this question. Explaining the limitations of the policy does not constitute evaluation in this question. Students can evaluate by considering the likelihood/extent to which government intervention may not result in an improvement in efficiency in the given context (market for alcohol).

[10]

- 3 (a) Explain the factors that affect the components of aggregate demand.
 - (b) Discuss the effect of an increase in export revenue on the national income [15] of different countries.

(a)

R1: Explain factors that affect one component of AD. **R2**: Explain factors that affect another component of AD.

Need to cover at least 2 factors. Strictly speaking, such questions will likely not appear at your A-Level exams anymore due to the new R1/R2 system.

Introduction

- Aggregate demand (AD) refers to the total planned expenditure by households, firms, government and foreigners on final goods and services produced in the economy at various general price levels.
- The components of AD are planned consumption expenditure (C), investment expenditure (I), government expenditure (G) and net exports expenditure (X-M) on goods and services. i.e. AD = C + I + G + (X-M)
- A change in in AD occurs if there is a change in the factors that affect one or more of its components (i.e. C, I, G or X-M).

Body

[P] Changes in expectations about future income levels affects AD via autonomous C

[E+E] Optimism about the country's economic growth would result in the households expecting a higher future income level. For example, with strong economic growth in the US, households will have more confidence in the economy and expect the higher economic growth to bring about higher future income levels. They will thus be more willing to spend on goods and services, causing consumption expenditure to increase. [L] The rise in autonomous C causes the AD curve to shift right as the total planned expenditure on goods and services increases at every general price level.

[P] Changes in expectations about future business conditions affects AD via I

[E] With a poor business outlook, firms may expect economic growth to slow or fall, leading to lower profit margins in the future. Assuming interest rate remains unchanged, this lowers the expected rate of return of future investments. With the expected rate of return now lower than the interest rate, the marginal benefit of investments is thus lower than the marginal cost, hence firms will lower investment spending. [E] E.g. with Britain's imminent exit from the EU, firms expect greater uncertainties and lower economic growth in the country as exports to the EU is likely to be adversely affected. The poor economic outlook results in lower expected returns on investments, thus reduce firms' investment spending. [L] The fall in I causes AD to fall as the total planned expenditure decreases at every price level.

[P] Changes in foreigners' income levels affects AD via X-M

[E+E] Demand for a country's exports is dependent on the income level of foreigners. For example, strong economic growth in countries like US and China will result in higher income levels for their residents, increasing their purchasing power and ability to purchase goods and services from their trade partners like Singapore. The demand for Singapore's exports thus increases, [L] causing an increase in export revenue and assuming no change in import expenditure, there will be a rise in AD.

Conclusion

The factors that affect autonomous C, I and X, which are components of AD will thus result in changes in AD.

Mark Scheme

Levels	Descriptors	Marks
L1	Shows some knowledge of components of AD. Merely listing with little explanation of the factors that affect the components of AD.	1 - 4
L2	Undeveloped explanation of the factors that affect the components of AD. At least 2 factors or 2 components of AD.	5 – 7
L3	Well-developed explanation of factors from different components of AD. Provides relevant examples / scenarios in explanation.	8 - 10

Markers' Comments

Content

- The C in AD refers to all household consumption expenditure, not only on domestically produced goods & services.
- It is <u>changes</u> in expectations of future income levels / price changes that affects C, not simply expectations. Students also tend to mix up the explanations for the two cases above.
- State of economy refers to the macroeconomic health of the economy, such as looking at economic growth. It does not refer to things like equity in distribution.
- Some students did not read the question carefully, ended up explaining what the components of AD are (i.e. C, I, G, X-M), instead of focusing on the factors that affect the components.

Skills

• Rather than spamming many factors at a superficial level, students should develop explanation of a few key factors with more depth and analysis. Spamming many factors also means less time available for the other questions in the exam. Students should aim for scope (considering factors affecting beyond just 1 component of AD), as well as <u>rigour</u> in their explanation.

(b)

R1: Explain the effect of a rise in X on real NY of an economy (direction).R2: Explain how the magnitude of the effect of a rise in X on real NY might differ across economies.

Approach

Students would need to examine how an increase in exports revenue may affect a country's national income. Students should use the **AD-AS model** as the tool for analysis, and would need to consider the effect of a rise in exports revenue on **AD**, and hence national income. To address the command word "discuss", students should analyse the **direction and extent of effect on the national income** and would need to consider the context of **different countries** in the analysis.

Introduction

- National income (NY) is the **total income earned by a nation** over a given period of time and is measured by the Gross Domestic Product (GDP) which refers to the total money value of the final goods and services produced within a country during a period of time.
- Exports revenue refers to the revenue earned from the foreigners' purchase of domestically produced goods and services. The effect of a rise in exports revenue on NY can be analysed using the AD-AS model.
- The extent of the effect on NY depends on the initial state of the economy, the size of the multiplier and the nature of the economy, and the analysis will be based on the context of a small and open economy like Singapore and a large but less open economy like US.
- The analysis assumes that all other factors of AD are unchanged.

Body

1. Effect of rise in exports revenue (X) on NY

[P] Rise in in X leads to a rise in AD, causing NY to increase by a multiple, assuming that the economy has spare capacity.

[E+E]

- Assume that the economy is initially in equilibrium where AD₀ = AS₀, where the original equilibrium national income occurs at Y₀. When exports revenue rises by \$100m, foreigners buying domestically produced goods and services will cause aggregate demand to rise as X is a component of AD.
- The rise in AD (shift in AD curve from AD₀ to AD₁) causes **total planned expenditure to be higher than the country's national output**. Firms will have to draw from their inventories, causing actual inventories to fall short of the planned inventories.
- To meet the planned level of inventories, firms will then increase their output by \$100m. Firms hire factors of production from households to produce more goods and services, thereby increasing the income of households by \$100m.
- When households' income increase, part of this increase is spent on consumption of domestically produced goods, while the rest is saved, taxed and spent on imports. Assuming that the marginal propensity to consume (MPCd) = 0.5 and the marginal propensity to withdraw (MPW) = 0.5, when households experience a rise in income of \$100m, they will increase their consumption of domestic goods and services by \$50m and spending on savings, taxes and imports will also increase by \$50m.
- Firms that produce these domestic goods will in turn increase their production and income will rise again whereby a portion of their additional income will be spent on domestic goods and services, leading to another round of increase in output and employment. This process will continue with each round of spending on domestic goods and services.
- Equilibrium is restored when the overall increase in savings, taxes and imports amount to \$100m (i.e. when injections = withdrawals).
- In the end, the initial rise in exports revenue will trigger a much larger change in national income as expenditure by one party is income to another. The initial increase in income due to the rise in exports revenue triggered further rounds of spending, causing national income to increase by the size of the multiplier k. Since k = 1/MPW = 2, the initial increase in exports revenue of \$100m results in national income increasing by \$200m. [L] Equilibrium national income rises from Y_o to Y₃.



The extent of the increase in NY will be different for different countries, depending on the nature of their economy, as well as the size of their multiplier effect.

[P] The increase in NY is affected by the level of exports revenue as a proportion of AD

[E+E] The extent of the rise in NY depends on the relative importance of X as a proportion of AD. If X accounts for a large percentage of the AD, then the initial shift in AD due to the increase in export revenue will be large, and [L] hence the increase in NY can be significant.

Evaluation

The extent of the rise in NY will be significant for a country that is highly dependent on the external market. For countries like Singapore, who has a small domestic economy, it needs to rely heavily on trade for economic growth, compared to US, which has a large domestic market and can rely on its domestic demand to bring about growth. As such, X accounts for a larger proportion of Singapore's AD due to its heavy reliance on trade for economic growth as compared to US, and hence the rise in X will lead to a larger rise in NY for Singapore as compared to US.

[P] The increase in NY is affected by the size of the multiplier

[E+E] The extent of the rise in NY also depends on the size of the multiplier. The size of the multiplier (k) is dependent on the marginal propensity to withdraw (MPW). Since k is the inverse of MPW, the smaller the MPW, the greater will be the size of the multiplier and hence the rise in NY. This is because a smaller MPW would imply that the domestic consumption induced by each round of increase in income is larger due to the smaller leakages at every round of the multiplier effect, [L] hence causing the overall increase in NY to be large.

Evaluation

For a small, open economy like Singapore, the multiplier is small due to the high marginal propensity to save (MPS) and marginal propensity to import (MPM). MPS is higher because of the compulsory saving scheme (CPF) and the lack of social safety nets like unemployment benefits or retirement pensions, thus compelling people in Singapore to save a rather significant amount of each dollar increase in income. MPM is higher as Singapore has to import most of its consumer goods and raw materials due to the lack of factor endowment. A higher MPW would imply that the domestic consumption induced by each round of increase in income is smaller due to the larger leakages, hence k is smaller and the overall increase in NY will not be as large.

For a large, less open country like US, the size of the multiplier is large due to the lower MPW. MPS is smaller in US because of the availability of social safety nets like unemployment benefits and retirement pensions so there is a lesser need for the US citizens to save for emergency or retirement needs. MPM is lower as US has abundant factor endowments so there is lesser need to import raw materials, goods and services. As such, the lower leakages mean that the overall increase in NY will be larger in the US as compared to Singapore.

[P] The increase in NY may be limited by the lack of spare capacity.

[E+E] The presence of spare capacity, which is affected by the state of the economy, affects the extent of the increase in NY. If the economy is operating close to full employment, when there is a rise in AD, factor costs will rise due to the lack of spare capacity, as firms compete for limited resources. This leads to firms raising prices of goods and services to cover part of the rising costs. Equilibrium is restored partly by the firms increasing GPL and partly by increasing output, hence limiting the rise in NY. Compared to the case where there is a lot spare capacity and the economy is operating on the horizontal portion of AS, the abundance of unutilized resources would mean that there is no need to bid up factor prices to obtain resources, and hence equilibrium can be restored solely through an increase in output. Hence, the full multiplier effect is able to take place, causing the rise in NY to be much larger.

Evaluation

In recent years, the Singapore economy is likely to be operating close to full employment level as the labour market is tight. This means that there is a lack of spare capacity, and the rise in AD will likely lead to a rise in the general price level, limiting the increase in NY. The US economy however has higher spare capacity, so the rise in NY may be more significant.

Evaluative Conclusion

[Stand] The rise in X will lead to a rise in NY due to the increase in AD, though the extent of the increase in NY will be different for different countries depending on the nature of their economy, as well as the size of their multiplier effect.

[Substantiation] For a small and open economy like Singapore, the extent of the increase in NY may be limited by the small size of its multiplier and the lack of spare capacity as compared to a large and less open economy like US.

However, while the Singapore's multiplier is small due to the higher leakages, the rise in NY can still be significant since X is a larger % of AD (X is 173% of SG's 2017 GDP) as compared to the US who is more reliant on Cd (more than 60% of GDP) due to its larger domestic market.

Mark Scheme

Levels	Descriptors	Marks
L1	Some knowledge of national income (NY) or characteristics of the country but not actually addressing the question.	1 - 4
L2	Descriptive explanation of the effect of a rise in X on NY.	5 - 7
	Undeveloped analytical explanation of the effect of a rise in X on NY (e.g. only adjustment process of how AD affects NY but no idea of the multiplier effect)	
L3	Well-developed analytical explanation of the effect of a rise in X on the NY which includes the multiplier effect including factors that affect the extent of the impact (e.g. size of multiplier, state of economy or nature of the economy). Includes a well-illustrated diagram to aid explanation.	8 - 10
E1	Makes unsupported statement about the effect of the rise in NY for different countries.	1 – 2
E2	Some attempt at judgement of the difference in the effect of a rise in X on different countries' NY.	3 – 4
E3	Provides a well-substantiated analytical evaluation of the effect of a rise in X on different countries' NY by considering the state of the economy and the nature of the economy (link to size of multiplier, relative importance of X in AD). Contextual real-world examples required.	5

Markers' Comments

Content

- Students tend to use the phrase "Singapore is a small and open economy" loosely, attributing the MPM, proportion of X out of SG's AD all to this fact. There is a need to explain the implications of "small and open economy" to show how this then affects the size of MPM, proportion of X out of SG's AD.
- Singapore's reliance on exports is not just because it is an open economy, it's because of our small domestic market. Other countries have a larger domestic market, hence their AD has a larger proportion of C.
- There is a misconception that when firms increase output and hire FOP from households, it is only labour. Households own all FOP, and firms will hire all types of FOP to increase output.
- Multiplier effect should be explained only on the horizontal section of the AS curve as the key assumption of the concept is that there is spare capacity and GPL is constant in the economy.

- Many students simply assert from the formula that because MPW is large, k is small and hence increase in national income is smaller. Students should explain how the size of MPCd/MPW affects leakages or induced consumption in each round of the multiplier effect and how this subsequently affects the magnitude of the increase in national income.
- Despite the repeated emphasis in lectures, some students are still claiming that developing countries will have spare capacity while developed countries are at full employment. Level of development and availability of spare capacity are two entirely different things.
- Choosing to discuss different nature of economy and thus the significance of X as component of AD gives more scope for evaluation as it clearly shows different country characteristics. Discussing the state of the economy would give less scope for evaluation as all countries may (at different times) have spare capacity or be at full employment.

Skills

- For a 15m question about the effect of a rise in X on the national income (NY) of different countries, students need to strategize and plan their answers to provide both breadth, depth with well-illustrated diagrams and comparisons of different countries with different nature of the economy and the state of the economy.
- It thus makes sense to start with the explanation of the direction of change in NY. Using AD-AS diagram, illustrate and explained well with the multiplier process the effect of the rise in X on the NY. Then proceed to explain the extent of the rise in NY using factors such as size of multiplier, nature of the economy and the state of the economy. Instead, some students went straight into discussing the factors that affect the extent of the change in national income and did not explain how the increase in X will affect NY.
- AD-AS diagrams drawn to illustrate multiplier often have errors or are incomplete x-axis not labelled to show NY change, extents of AD shifts, when to use dotted versus solid lines for AD curves.
- Some answers went on to claim that if X rises for a country, it means M rose for another country and thus their national income falls. First, it is irrelevant to this question that is asking what happens when X rises. Second, the other country may have experienced a rise in national income (for some other reason) and that is why they are buying more imports.