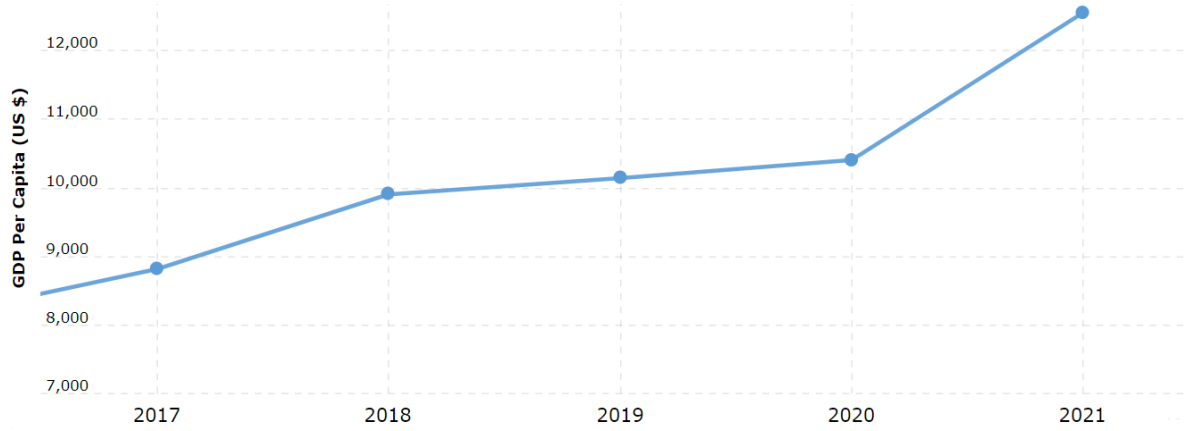
H2 ECONOMICS – PROMOTIONAL EXAM 2022 QP

China's quest for inclusive economic growth

Figure 1: China's Gross Domestic Product (at current prices) per capita, 2017 - 2021



Source: World Bank, 2022

Extract 1: China's income inequality grows despite village modernisation

The Chinese government's push to modernise rural areas of China has improved lives and reduced poverty, but villagers nationwide face an even wider gap in income inequality against their urban counterparts as economic opportunity in the countryside remains sparse.

China has an urban population of roughly 900 million while another 500 million live in rural areas. Urbanites earned US$6,321 annually on average in 2020, while rural residents averaged US$2,470, government data shows.

China's rural areas have few work options outside agriculture, and the farming field lacks business growth. Growing crops like grains, oil crops, and cotton yields low returns. Many villagers leave for big cities to be migrant workers, whose average earnings reached about US$577 a month in 2020 – a pay far better than that for farmers.

But they remain far behind office workers, such as those working in the finance sector. White-collar employees in Beijing, Shanghai and other cities that host booming industries make US$1,442 to US$4,326 a month, resulting in a clear divide with villagers and migrant workers.

Adapted from Nikkei Asia, 13 Jun 2021

Extract 2: Minimum wage hikes sweep China in 'common prosperity' push

Chinese provinces have responded to President Xi Jinping's "common prosperity" campaign by hiking minimum wages, but higher labour costs could prompt manufacturers to shift production elsewhere.

Twenty out of China's 31 provincial-level regions have increased their minimum wages so far in 2021. Guangdong Province, China's largest province by economic size, lifted its monthly minimum wages Wednesday to between US$234 and US$340 from between US$203 and US$317. This is likely to benefit migrant workers from rural areas to cities the most.

Many overseas companies, including Toyota Motor, Honda Motor and Nissan Motor, operate in Guangdong. Larger offices and factories already pay above minimum wage, so "the increase will

have no direct impact at all," as an executive at a Japanese automaker puts it. But the contractors in charge of cleaning or food service for these companies may need to increase wages, possibly leading the contractors to raise rates and indirectly add to the big corporations' costs.

This may drive foreign firms away. Labour costs are already higher in China than in many Southeast Asian countries. Nearly one in four European companies in China are considering shifting their investments out of the country. Samsung Electronics shifted smartphone production to Vietnam from China in 2019. Further wage increases could pressure more businesses to follow suit.

Adapted from Nikkei Asia, 2 Dec 2021

Extract 3: For China, hosting the Olympics is worth every billion

To make an Olympic ski jump, China clad a hillside in steel and blanketed it with artificial snow. To construct a high-speed rail line linking the venues and Beijing, engineers blasted tunnels through the surrounding mountains. Hosting the Winter Olympics is costing China billions of dollars, a scale of expenditure that has made the event less appealing to many cities around the world in recent years.

But China looks at the Games with a different calculus. Beijing has long relied on heavy investments in building railway lines, highways and other infrastructure to provide millions of jobs to its citizens and reduce transportation costs. The national government spent US$2 billion building an expressway from northwest Beijing to Yanqing, where Olympic sliding and skiing events are being held, and an additional US$3.6 billion to extend the expressway to the ski resorts. With the 2022 Games, it also hopes to nurture an abiding interest in skiing, curling, ice hockey and other winter sports that could increase consumer spending, particularly in the country’s chilly and economically struggling northeast.

China regards the Olympics as transforming Beijing, which gets only a foot of natural snow most winters, into a global destination for winter sports.

“The success in opening the Winter Olympics has brought positive economic benefits and created new sources of growth for the local economy,” said the top spokesman for the city of Beijing.

Adapted from The New York Times, 15 Feb 2022

Extract 4: China's fake snow frenzy for Beijing Olympics strains water supplies

Artificial snow has become a Winter Olympics fixture as climate change shrinks the number of countries that get enough natural snowfall to hold the event. But Beijing will be the first host to rely completely on man-made powder.

Experts worry that the push to transform Zhangjiakou, the main venue for the Winter Olympics, will worsen the region's severe water scarcity, which ranks among the worst in the country. To reduce the need for groundwater extraction, China has built water tanks to collect rainfall, and pipe water from a reservoir in a nearby town.
There's also risk that the fake snow could be harmful to the environment when it melts. Furthermore, water isn't the only environmental concern. Making snow at such a large scale is an energy-intensive process that can at times spew tons of planet-warming gases. This appears to be a low risk, however, since all the snow canons used for the Games are powered by nearby wind farms.

The concerns haven’t stopped China from investing heavily in Zhangjiakou's tourism industry since Beijing won its bid for the Winter Olympic Games in 2015. Today it has seven bustling ski resorts and the city receives 3 million skiers annually. The government says the Games are a turning point, with infrastructure investments and jobs related to winter sports lifting more than 430,000 residents out of poverty.

Despite promises of prosperity that the ski resorts would bring, some local residents have found only incremental improvements to their daily lives. Mr Chen, a 60-year-old farmer, says he's glad the resorts hire locals like him during the cold months when they can't farm. But not everyone is happy about the changes. The development has destroyed forests and degraded soil in the area. Mr Ren, 54, was forced to relocate after his village was demolished to make room for luxury hotels. "It's good that we now have places to work," said Mr Ren, who now earns less than he used to as a farmer. "It just pays too little."

Adapted from The Straits Times, 22 Jan 2022

Questions

(a) Using the information in Extract 1, explain the opportunity cost incurred by villagers when they leave for big cities to be migrant workers. [2]

(b) With the aid of diagram(s), explain one possible reason why a farmer in rural China earns less than a white-collar employee in urban China (Extract 1). [3]

(c) With the use of a production possibility curve diagram, explain the impact of "companies… shifting their investments out of the country" (Extract 2) on China's economy. [3]

(d) Explain the impact of minimum wage hikes (Extract 2) on China's workers. [4]

(e) Assess the usefulness of Figure 1 in determining the change in living standards of an average Chinese citizen from 2017 to 2021. [8]

(f) Discuss whether the Chinese government's decision to host the 2022 Winter Olympics could be justified. [10]

Note: This question contains points that cover Sustainable Growth (Book 8 Section 6) and is not included in the 2023 Promo exam. However, it is still worth going through the question to understand the question requirements and points covered.

[Total: 30]

Essay Questions

Question 1

In Feb 2022, Abbott laboratories, the largest U.S. supplier of powder infant formula recalled many of their products after reports of bacterial infection in babies. In the same period, U.S. experienced a marginal fall in their real gross domestic product.

Adapted from The Washington Post, 2022

(a) Explain the impact of above-mentioned events on the total expenditure on powder infant formula by consumers in the U.S. [10]

(b) Discuss the appropriateness of various policies the U.S. government can adopt to enable low-income households to afford powder infant formula. [15]

Question 2

Even though e-cigarettes have not been approved by the U.S. Food and Drug Administration (FDA) as a smoking aid, e-cigarettes manufacturers have been proposing that e-cigarettes have benefits and have engaged in persuasive advertising to increase sales. Meanwhile research shows that ultrafine particles from secondhand vape aerosol can increase the risk of cardiovascular disease among secondhand smokers.

Source: FDA, Accessed Aug 2022

*E-cigarettes are devices that make vapour for inhalation, simulating cigarette smoking.

(a) Using the information provided, explain why governments intervene in the market for e-cigarettes. [10]

(b) Discuss whether government intervention in the market for e-cigarettes will result in a more efficient outcome. [15]

Question 3

In his National Day Rally speech, Prime Minister Lee Hsien Loong highlighted that Singapore must preserve its business hub status, attract more foreign investments, and continue to develop local companies and entrepreneurs to sustain growth in the long run. He also recognised that for economic growth to benefit all Singaporeans, it must be inclusive.

Adapted from: CNA and PMO, Aug 2021

(a) Explain possible reasons for changes in autonomous consumption and investment expenditure. [10]

(b) Discuss whether attracting more investments will enable Singapore to achieve inclusive growth. [15]

Note: Part (b) contains points that cover Inclusive Growth (Book 8 Section 7) and is not included in the 2023 Promo exam. However, it is still worth going through the question to understand the question requirements and points covered.

H2 ECONOMICS – PROMOTIONAL EXAM 2022
SUGGESTED ANSWERS, MARK SCHEMES & MARKERS' COMMENTS

General comments:

- Please spend some time reading the case evidence **carefully**! Quite a few students misinterpreted the information provided in the case, leading to incorrect or irrelevant analysis.
- For the higher order questions, there is need to craft the [P] statements more carefully to **avoid contradicting** yourself. Having 1 paragraph start with 'Fig 1 is useful…' and the next paragraph start with 'Fig 1 is not useful …' leads to a disjointed response - but you should be writing a single coherent response to the question!

a. Using the information in Extract 1, explain the opportunity cost incurred by villagers when they leave for big cities to be migrant workers. [2]

From Extract 1, many villagers leave for big cities to be migrant workers to earn 'a pay far better than that for farmers.' Since farming is the next best alternative, the opportunity cost incurred by the villagers would be the income earned from farming forgone.

[2] for **contextualised** explanation of opportunity cost.

Markers' comments:

Content:

- There were conceptual misunderstandings. Some students misunderstood opportunity cost to be the next best alternative forgone, so they wrote that the opportunity cost is having to give up being a farmer. However, opportunity cost should be the **net benefit** that is forgone, in terms of either income or profits earned from the next best choice.
- The word "forgone/sacrificed" was missing in some responses. But this is **crucial** to the understanding of opportunity cost! That the net benefit from the next best choice is sacrificed.
- In some responses, it was not clear what the villagers' next best choice is. Based on the case evidence, if not a migrant worker in the cities, the villagers' next best choice is to be a farmer.
- A handful of scripts focused on intangible benefits forgone such as time spent with their family members and the peaceful lifestyle in the village. In such cases, it was frequently unclear what the next best choice (of employment) is. Students should reference Ext. 1 to identify the relevant opportunity cost here!

Skills:

- Some students did not explicitly state that for this question, the net benefit forgone is the income earned from farming, instead leaving it vague as just 'net benefit'. There should be better contextualisation of responses, especially since this is a case study.

b. With the aid of diagram(s), explain one possible reason why a farmer in rural China earns less than a white-collar employee in urban China (Extract 1). [3]

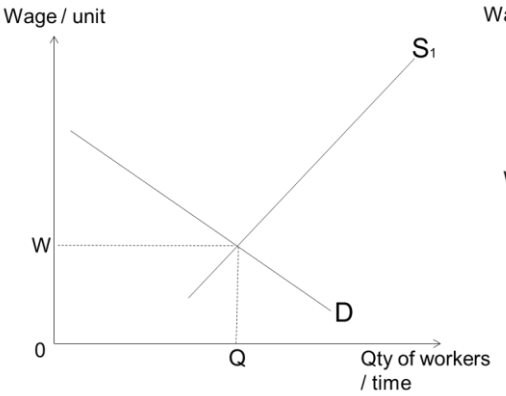


Fig 1. Labour market for farmers

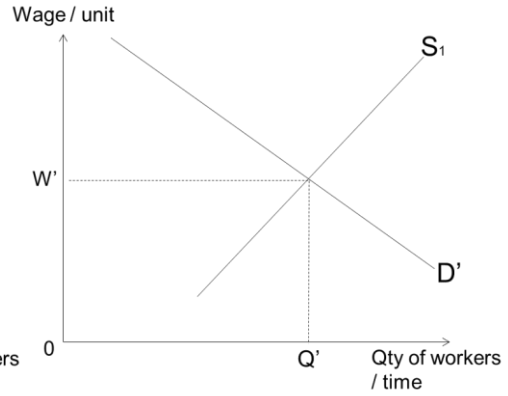


Fig 2. Labour market for white-collar workers

One reason is because of high demand for white-collar workers and comparatively low demand for farmers. As the price of farm produce is relatively low (Ext 1: Growing crops like grains, oil crops, and cotton, had low returns), compared to services produced by the white-collar workers like banking services, the marginal revenue each farmer brings to the firm is low. This would mean a lower demand for farm workers compared to demand for white-collar workers (Fig. 1 & 2). Ceteris paribus, wage earned by farmers W in Fig 1 would be lower than that earned by white-collar workers, represented by W' on Fig. 2.

Alternative answer: Students can also argue that the wage differential is due to supply for white-collar workers being low and supply for farmers being high because the former requires far higher qualifications and skills / expertise, so less households would be able to offer the labour services.

[2] for explanation of either why demand OR supply for the two types of labour is different.
[1] for correctly drawn and labeled diagram(s).

Markers' comments:

Content:

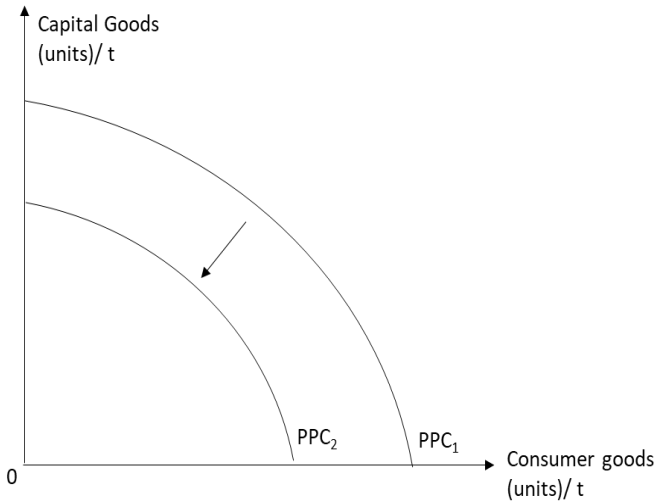
- Many students seem to think that higher levels of qualifications will automatically affect the demand for labour. Recall that demand for labour is the **willingness and ability** of firms to purchase labour services. Firms would not be willing to hire university graduates who lack the necessary skills for the jobs.
- Many students mentioned that higher productivity will make the demand for workers higher. However, this is not relevant in this context. If the comparison is between workers in similar/the same occupations, then yes, the argument holds. But how would someone compare the productivity of a lawyer in the city with that of a pair of farm hands in the rural area? It is more sensible to argue on the account that the final product white-collar workers are hired to produce is valued higher/ priced higher and that makes the revenue generated by their work hours higher than that of farmers.
- Many students mentioned that because there are "booming industries" in some cities, the demand for white-collar workers is high. This is not necessarily true as "booming industries" just means demand for such goods and services are rising. If the starting point is very low levels of demand, then even with demand for such goods and services rising, the current level of demand might not be high. Derived demand for such white-collar workers might therefore not be high. Regardless, students should make the link to the amount of **revenue** generated by one more worker when it comes to analysing the level of demand for workers.
- Some students said the reason for why supply of farmers is higher is because "500 million people live in rural areas" or that "rural areas have few options outside agriculture". This is incorrect analysis because the urban population is much larger at 900 million. The lack of options also

does not mean all are willing and/or able to become farmers. For supply of labour, it is also important to make the link to willingness and ability of households to offer their labour for hire.
- A handful of students drew the AD-AS diagram, which is incorrect. The labour market is very much like your market for other goods and services — it should be microeconomic analysis!

Skills:
- This question is **not** asking for widening/increasing wage differential. There is thus no need to explain "increasing demand for white collar workers" vs "falling demand for farmers". The focus of this question is just a difference in the **wage level**, **not** a **change** in wage. Students who mistakenly tried to explain a widening wage differential went on to explain the price adjustment process, which was irrelevant.
- The question called for one possible reason - some students explained why the levels of demand differ, and why the levels of supply differ. Instead of two (usually) briefly explained reasons, focus on one and elaborate in better detail.
- Some students only explained why demand for white-collar workers is high OR why supply for white-collar workers is low, without explaining why the case is reversed for farmers. This leads to incomplete analysis, because a comparison between the wage earned by white-collar workers and farmers needs to be made.
- A handful of students merely lifted from the case to support why demand is high for white collar workers — on its own, it would not be credited. There is need to make links to the higher revenue that is generated by their work i.e., need to explain the case evidence using economic analysis.
- Make reference to the diagram(s) drawn! Your explanation is meant to be aided by the diagram(s), not separate.
- Many students did not label their labour market diagrams properly, and it wasn't clear which type of workers (white collar or farmers) they were referring to in their analysis.
- A handful of students drew one diagram on top of the other instead of putting them side-by-side. Putting the diagrams side-by-side would allow for a clearer comparison of the wage earned by a farmer and white-collar worker, making the wage differential clearer too.

c. With the use of a production possibility curve diagram, explain the impact of "companies… shifting their investments out of the country" (Extract 2) on China's economy. [3]

With firms shifting their investments out of China, there would be a fall in quantity of capital in China. With less resources available, maximum possible output of the economy falls. The fall in productive capacity leads to an inwards shift of the PPC from PPC_1 to PPC_2.



[2] for explanation of how productive capacity will be impacted. There must be a relevant link to change in quantity/quality of FOP.
[1] for correctly drawn and labeled diagram.

Markers' comments:

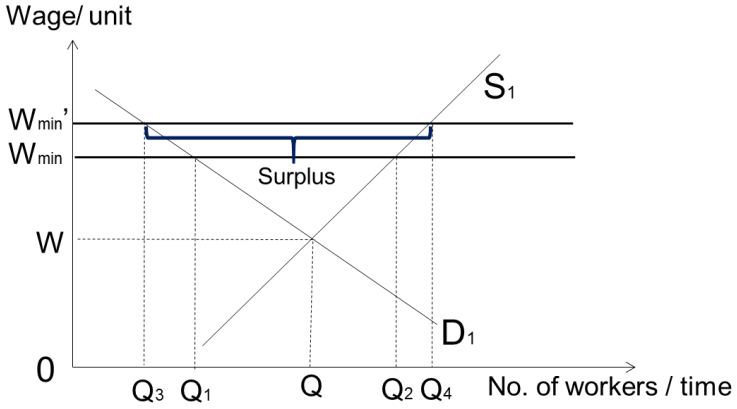
Content:

- There is a fair bit of confusion between a few similar looking terms. Many students used the terms '**productive capacity**' and '**productive efficiency**' interchangeably and **incorrectly**. Productive capacity is the maximum possible output of an economy (**not** of a firm!). In this case, a fall in capital stock will lead to productive capacity falling, not productive efficiency.
- Productive efficiency is a situation in which the economy cannot produce more of one good without sacrificing the production of another good. When a country is producing a combination of goods on the PPC, it is in a state of productive efficiency.
  Note: You may see other definitions of 'productive efficiency,' but they all lead to the same 'state' where the economy cannot produce more of one good without sacrificing the production of another.
- In the same vein, **productivity** of a factor of production is also different. Productivity refers to the output per unit factor of production, e.g., labour productivity looks at the output per unit of labour.
- Quite a few students wrote that unemployment would lead to a fall in the quantity of labour, leading to a fall in productive capacity and hence the PPC shifts inwards. This is **incorrect**! Quantity of labour does **not** change just because there is increased unemployment as the labour force is made up of people who are willing and able to work, including those who are employed and unemployed. The size of the labour force, which also measures the quantity of labour in the country, does not change just because unemployment rises since those unemployed are still counted in the labour force. Using the PPC diagram, unemployment (or underemployment) is represented by the economy producing at a point within the PPC.
- A handful of students wrote that factors of production will fall but it is not clear if it is quantity or quality of factors of production that would fall. Saying just factor of production throughout is also too vague. Make it clear that the quantity of capital will fall, leading to a fall in productive capacity.

Skills:

- Many students unfortunately lost their diagram mark due to incomplete or incorrect labeling of their PPC diagram, with wrong axes labelled, or missing labels of the PPC. Students should also take note to label their PPC as PPC itself, instead of using C1 to C2, or P1 to P2. C is an abbreviation for Consumption Expenditure and P is a common abbreviation for Price!
- Make reference to the diagram(s) drawn! Your explanation is meant to be aided by the diagram(s), not separate.

d. Explain the impact of minimum wage hikes (Extract 2) on China's workers. [4]



[P] Some workers would earn higher wages, improving their SOL.
[E+E] A minimum wage is the lowest wage producers can legally pay their workers. It is a regulation aimed at ensuring workers earn a certain level of income for their daily needs and needs to be set above equilibrium wage rates to be effective. Minimum wage hikes would mean an increase in the initial minimum wage, such that it is higher, [optional: e.g. from W_{min} to W_{min}' in the diagram]. As minimum wages increase e.g. 1410 yuan to 1620 yuan in Guangdong (Ext. 2), workers previously earning W_{min} will now earn more. This increases their ability to consume more goods and services to satisfy material needs, [L] allowing them to enjoy higher SOL.

[P] However, workers who lose their jobs will find themselves negatively impacted.
[E+E] As minimum wages increase, quantity demanded for workers fall [from Q_1 to Q_3], as it is now more costly for firms to hire, while quantity supplied of workers increase [from Q_2 to Q_4] as more workers are incentivised to offer their labour. This increases the surplus of workers [from Q_1 to Q_2 units to Q_3 to Q_4 units], signifying more would be unemployed. The minimum wage prevents the labour market from adjusting to equilibrium, and so the surplus will be persistent. [L] For those previously employed who now find themselves unemployed, their earnings will fall significantly, causing a fall in their living standards too.

Note: There is no need for a diagram.

[2] for explaining how wages will increase for those who remain employed.
[2] for explaining that some workers will be retrenched, leading to a rise in unemployment.
Max 2m if students explained the impacts of implementing a minimum wage, rather than increasing the min wage.

Markers' comments:

Content:

- Many students missed the point about the "min wage **hike**" and made clear this error with their diagram. While there was no real need to compare the 'before' and 'after', some evidence of the awareness of the min wage hike i.e., an increase in minimum wage imposed, should surface in the explanation.
- Quite a few students mentioned that with the minimum wage hike, workers who were previously earning below the minimum wage will now earn a higher wage rate. This response is considering the effect of a minimum wage being implemented, and **not** a minimum wage hike. Since the focus is a minimum wage hike, students should only consider workers who were previously earning less than the new minimum wage (and not workers who were earning below the minimum wage) now earning a higher minimum wage rate. Such incorrect responses suggest students not responding critically to the question. Moving forward, students must dissect the questions more carefully.
- Students were often not thorough when explaining that there would be a greater surplus of labour with the hike and just went on to say that there would be greater unemployment. This is especially so for scripts without a diagram.
- For those who illustrated with the aid of a diagram, unemployment (willing and able to work but cannot find work) is the entire surplus at the higher minimum wage. It is NOT only the fall from initial Qd (at old min wage) to the lower Qd' (at new higher min wage).
- The imposition of a higher minimum wage DOES NOT alter the demand for labour or supply of labour. An increase in minimum wage is a **price factor**, so it is quantity demanded and quantity supplied that is impacted.
- While it may not be totally wrong to suggest that a min wage may increase the workers' productivity out of fear of being retrenched, there is no clear supporting theory (in the H2 syllabus) that allows for a rigorous explanation/demonstration of content. There was also no case evidence supportive of this. This response is therefore not quite a good choice of "point".
- Please take note of the labelling for the diagram. It should ideally be wages on the Y-axis and the different wages should be labelled W1, W2 instead of P1 or P2 as the Y axis shows wages and not prices.

Skills:

- Question asked for "impact on **workers**". Big problems such as equity and efficiency are likely not relevant to workers who are more concerned with the income they receive if they remain employed. Some students also fell short in linking the rise in surplus of workers to more workers becoming unemployed.
- Students should also not choose to analyse the factor market here using consumer and producer surplus since this economic tool is more commonly applied to the goods market. Furthermore,

the question is not asking for a welfare analysis (efficiency) in this market thereby making such analysis even less relevant.
- While there was no mark allocated to a diagram, in this case, it would be easier for students to illustrate and explain the min wage hike with one. If it helps in making your response clearer, it is okay to include a diagram!
- While it is factual that workers who already earn higher than the minimum wage would not be affected by the hike, it was not helpful to include that in your response since the focus was on workers impacted by the hike.
- A handful of students forgot that a minimum wage hike would benefit some workers while harming others, thus only bringing in one impact. This leaves a glaring gap in their analysis. Moving forward, students should be more aware of the mark allocation as bringing in 1 point for a 4m question is likely insufficient. This will push them to think harder and **bring in the 2nd point needed** for this question.

e. Assess the usefulness of Figure 1 in determining the change in living standards of an average Chinese citizen from 2017 to 2021. [8]

Introduction
Living standards comprise both material and non-material aspects. Material SOL stems from consumption of goods and services, while non-material SOL is impacted by intangibles.

Body

Side 1: Figure 1 is <u>useful</u> in determining the change in living standards of an average Chinese citizen.

Figure 1 shows nominal GDP per capita. GDP per capita is the total value of all final goods and services produced by factors of production located *within a country's geographical boundaries,* divided by the population size.

China's nominal GDP per capita has risen from 2017 to 2021. Assuming prices remain constant (or increase more slowly than the rise in nominal GDP), each Chinese citizen would have, on average, higher purchasing power, and is better able to consume more goods and services to satisfy their material SOL. This suggests an improvement in material SOL.

Side 2: Figure 1 is <u>not so useful</u> in determining the change in living standards of an average citizen because of several limitations.

'Per capita' is a 'mean,' and may not accurately reflect how much an average citizen earns if income is unevenly distributed. Ext 1 suggests rising income inequality in China. If income is fairly unevenly distributed, per capita data would be a poor gauge of change in living standards of an average citizen since the rise in income may be largely enjoyed by the higher income earners. Fig. 1 is thus likely to overstate the improvement in SOL in China.

Nominal GDP may be rising from increases in prices and/or output. As Figure 1 only reflects nominal figures, we will need to know the inflation rate to calculate the change in real GDP per capita. Real figures are more useful in determining material standards because it indicates the purchasing power of the citizens and how much goods and services they are able to consume. If GDP per capita increases more slowly than prices, then real GDP per capita would in fact be falling and citizens will likely experience a lower material standard of living. Fig. 1 is thus likely to overstate the improvement in SOL in China.

Fig. 1 is also unable to tell us how non-material living standards have changed. The increase in GDP per capita suggests more production in the country. Profit-motivated firms would ignore negative effects on third parties and select the cheapest methods of production, which is also often the most pollutive. If increased pollution led to a deterioration of air quality, it may mean any increase in

material SOL is offset in part by the decrease in non-material SOL that comes with poorer air quality, which impacts on health negatively and lowers citizens' quality of life.

Alternatives: Other points e.g., change in no. of work hours (leisure time), change in composition of GDP over time can also be valid.

Conclusion

[Stand] Figure 1 is limited in its usefulness in determining the change in living standards of an average Chinese citizen.
[Substantiation]
Ext 1 details the widening gap in income inequality between rural and urban China. Ext 4 also suggests that policies and prosperity only brings "incremental improvements" to some residents. Therefore, it is likely that an increase in GDP per capita will overstate improvements in living standards of an average Chinese citizen, as it may only benefit the urban citizens or the capital owners.

Furthermore, with increased economic activity, there can be significant impact on the environment, such as how the development of ski resorts in Zhangjiakou has "destroyed forests and degraded soil". Therefore, non-material SOL will likely have fallen over the years. Since Fig. 1 does not take into consideration such changes, it is limited in its usefulness in determining the change in living standards of an average Chinese citizen.

Level	Descriptors	Marks
2	Answers must cover BOTH material AND non-material SOL. Well elaborated explanation of given indicator and its limitations to measure change in SOL over time.	4 – 6
1	Answer that only focuses only on material OR non-material SOL. OR Answers that is undeveloped but covers both material and non-material SOL.	1 – 3
E	Well substantiated stand on whether GDP per capita is useful in determining change in SOL of average citizen in China's context.	1 – 2

Markers' comments:

Content:

- The **most common error** in the scripts was the confusion with the indicator - GDP per capita (current prices) is nominal GDP per capita not yet adjusted for inflation. Real GDP would be GDP (CONSTANT prices) where prices used would have been the base year prices. As a result, most answers did not access the higher level marks for this question.
- There were others who chose to be vague and discussed how GDP could reflect an improvement in material SOL but has its limitations such as "composition", inequality, etc. This approach hides the ignorance about the indicator in Figure 1, but it also does not demonstrate an awareness of what the question is looking for. Therefore, it also limits access to the higher mark range. Note that GDP is **not** the same as GDP per capita!
- Many students did not begin their responses by explaining nominal GDP per capita, missing out on opportunities to demonstrate understanding of what is given in Fig. 1. Many went on to immediately comment on how a rise in GDP per capita indicates higher material SOL without any comments on what the indicator signifies. To do so, they can define GDP and explain what 'nominal' and 'per capita GDP' values mean.

- While most students recognise the need to address both the material **and** non-material aspect of standard of living, the quality of explanation of how the indicator (GDP per capita) reflects changes in the material standard of living did have some variation with the weakest ones merely asserting that a rise in GDP (instead of GDP per capita) leads to an increase in standard of living. Likewise, many answers tend to begin the non-material discussion by asserting that the indicator given in Figure 1 is "inaccurate in showing non-material well-being". The national income figures were NOT designed to capture non-material well-being so there is little need to wonder why this indicator failed to be useful here.
- Instead of highlighting the limitations of how GDP does not include non-material well-being indicators such as leisure hours and pollution levels, it is better to argue how the rise in GDP per capita might overstate the improvement in the well-being of the citizens since the non-material living standards could have deteriorated over the period, leading to a limited overall improvement in standard of living of the citizens.
- Note that higher income allowing access to better quality goods and services, access to education and/or healthcare will all impact and increase material SOL. Some students **incorrectly** wrote that these would result in an improvement in non-material SOL.
- Explanations of how non-material SOL may fall when GDP per capita rises need to be elaborated. There were many responses which just quoted evidence without any explanation.
- Students should also note that there is a difference between 'income of the average Chinese citizen' and 'average income of each Chinese citizen'. GDP per capita shows the average income of each Chinese citizen, NOT 'income of the average Chinese citizen'.
- The Gini coefficient does not reflect inequity, but the degree of income inequality.

<u>Skills:</u>

- Many students answered this question as a purely theoretical question when they should have contextualised their answers with the case material in order to gain the content and evaluation marks. Stronger candidates were able to quote various evidence from extracts to support their points.
- It was laudable that many students were well-prepared for a question on SOL but there should not be hefty spamming of every limitation unnecessarily since this is only an 8m question in the case. Between writing more points and carefully using case extract to support your analysis or stand/judgement in response to the question, the latter will surely add value to the response than well-rehearsed theoretical points being raised.
- As the question focus is on the **change in living standards over time**, students need to reflect the **change over time** in their arguments, rather than just looking at the level of living standards at a point in time. It is also not a comparison of living standards across space (i.e., between economies). Points such as data collection problems is thus not quite relevant in addressing the question.
- Many students did not write a stand/overall conclusion. Students should note that for 8- and 10-marks case study questions, there is a need to have a justified stand to earn the full evaluation marks. And for those who attempted to evaluate, many only repeated points from previous paragraphs and commented that additional indicators are needed to make it more useful. A summary of points is **not** evaluation.
- The focus of this question was on the usefulness of the indicator to determine the changes in standard of living for an average Chinese citizen. Any attempt to evaluate should relate to the "usefulness of nominal GDP per capita presented in Figure 1" for the above purpose. Students who brought in additional indicators often were not addressing the question. **Make use of case evidence** to determine if certain arguments are stronger/more valid in the context of China.

f. Discuss whether the Chinese government's decision to host the 2022 Winter Olympics could be justified. [10]

Note: This question contains points that cover Sustainable Growth (Book 8 Section 6) and is not included in the 2023 Promo exam. However, it is still worth going through the question to understand the question requirements and points covered.

Introduction

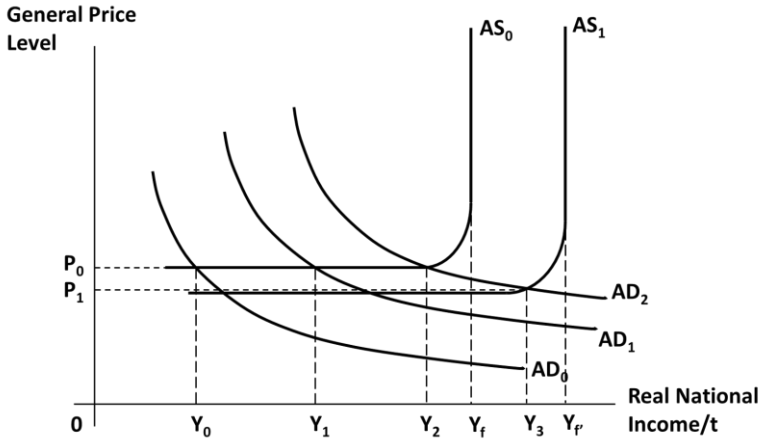
To determine if the decision to host the 2022 Winter Olympics is justified, we first examine both microeconomic and macroeconomic impacts of the decision.

Body

Side 1: There are benefits to China from hosting the Winter Olympics.

[P] Hosting the Winter Olympics will lead to economic growth.
[E+E] In preparation for the Olympics, the government spent $2 billion on infrastructure (Ext. 3). This spending by the government on domestically produced goods and services e.g. construction services leads to **a rise in government expenditure** (G) and thus AD increases from AD_0 to AD_1. This causes AD to exceed output, leading to firms facing an unplanned fall in inventories. Firms will thus increase production, and will do so by hiring more factor input such as labour (assuming there is spare capacity in the economy) and paying out more factor income. National income rises from Y_0 to Y_1. Households spend a portion of this rise in income on consuming domestically produced goods and services, causing a rise in induced consumption expenditure (C). At the same time, households save more, pay more taxes and buy more imports, increasing withdrawals. The increase in induced C causes AD to rise once more, which triggers a further fall in firms' inventory levels, and firms increase production again. The process continues until injections equals withdrawals once more and the economy is in equilibrium at a higher level of national income Y_2. [L] Actual growth is thus achieved.

Note: AS is held constant in this explanation at AS_0. Students can also explain that C and X will increase with growing local interest in winter sports and the increase in tourism ("transforming Beijing… into a global destination for winter sports") respectively.



[P] Economic growth can also be better sustained.
[E+E] The infrastructure built contribute towards the quantity of capital in the economy. With more factor input, maximum possible output of the economy increases. This increase in productive capacity is reflected in the rise in Yf from Yf to Yf', and AS increases (vertical potion shifts out). The increase in Yf allows real GDP to increase beyond Yf, [L] allowing for more sustained economic growth.

Alternative: Ext 3 mentions a reduction in transportation costs. The addition of transport infrastructure reduces time taken to travel from one place to another, hence cutting down transport cost. This leads to a fall in unit COP for firms, and AS increases from AS_0 to AS_1 (horizontal portion shifts down). The increase in AS leads to GPL falling from P_0 to P_1 – this increases the real wealth of households and their purchasing power, enabling them to consume more. The increase in consumption would lead to real GDP to increase from Y_2 to Y_3, achieving actual growth.

Alternative: Ext 4 mentioned ski resorts lifting residents out of poverty. Increase in interest for winter sports → increase in DD for related services e.g., ski resorts. This increases derived demand for workers in such industries, leading to higher wages → many residents lifted out of poverty. [This impact is likely regional, in the "struggling northeast."]

Side 2: However, there are also costs to China from hosting the Winter Olympics.

[P] Hosting the Winter Olympics leads to unsustainable growth as there would be environmental degradation.
[E+E] As the Olympics relied on artificial snow, there was need for large amounts of water to be used for the creation of artificial snow. Large amounts of energy were also required, which contributes to global warming and can result in more extreme weather conditions for future generations. The fake snow may also harm the environment when it melts, lowering the quality of water resources (Ext. 4).
[L] The depletion of clean water for residents in the country will lower the living standards of future generations, as they may lack clean water to fulfil their needs.

Alternative point on water shortages for residents in Zhangjiakou – fall in SS of drinking water as part of the water is used to create fake snow. Ceteris paribus, this leads to a water shortage and increase in price of water, which may lead to some residents being unable to consume water (issue of inequity, esp. since water is essential to daily life).

Alternative point on how economic growth may not be inclusive – Ext 4 says that some local residents found only incremental improvements to their daily lives.

Conclusion

[Stand] The Chinese government's decision to host the 2022 Winter Olympics can be justified.
[Substantiation] The large increase in G would lead to a significant increase in real GDP, as AD would increase significantly. Furthermore, it is likely that China has a larger multiplier size due to a smaller MPW. China is a large country with natural resources and hence their marginal propensity to import is lower. Overall, the increase in G will lead to a much larger multiplied increase in real GDP, indicating actual growth. The investments in infrastructure will ensure sustained growth without inflationary pressures, which indicates an improvement to the citizens' material standard of living.

The decision also reduced poverty in some regions, especially for the farmers. They now gain employment in cold months when they cannot farm, which means a more steady stream of income which would likely significantly improve SOL in those months.

While there is a possibility that citizens' non-material well-being may deteriorate due to the effects of water scarcity and use of energy, Extract 4 suggests that there are policies that the government has taken to mitigate some of these effects. For example, China built water tanks to reduce groundwater extraction, and power the snow canons for snow-making using wind power, which is cleaner and sustainable since wind is a renewable energy source.

Level	Descriptors	Marks
2	Well-developed and balanced explanation of the benefits and costs from hosting the Winter Olympics. To get full credit, students should make the link clearly to a 'benefit' or 'cost'.	4 – 7

1	Low L1 (1-2): Mere listing of points that outline some benefits and costs from hosting the Winter Olympics to China. Answer lacks economic analysis and rigour. High L1(3-4) Under-developed but balanced explanation of the benefits and costs from hosting the Winter Olympics. OR Well-developed but one-sided explanation of either the benefits or costs from hosting the Winter Olympics. *Note that at the A-levels, the mark range is L1 (1-3m), L2 (4-7m) for 10m case study questions.	1 – 4*
E	Well substantiated stand on whether hosting Winter Olympics is more beneficial or detrimental to China.	1 – 3

Markers' comments:

Content:

- Most students recognised that the approach to the question involved discussing the costs and benefits of hosting Winter Olympics before arriving at a reasoned conclusion. The difference in quality of the response lies in the rigour of analysis when discussing these points. The weakest responses merely plucked points out of the extracts with limited/no analysis while the better ones used economic tools such as ADAS to analyse the impact on China's growth and hence the decision to host the Winter Olympics.
- A good link from case evidence of increased government spending and/or export revenue when hosting the Winter Olympics is necessary instead of doing a theoretical analysis (e.g. multiplier) without even explaining how the increase in AD came about.
- While it was good to have economic analysis, some got carried away with the explanation of allocative inefficiency in the "market for fake snow" and invested too much time on this one aspect of hosting the Winter Olympics instead of the bigger picture – the government has other economic goals besides allocative efficiency e.g., increasing SOL, economic growth.
- Likewise, the focus of this question is not about how the hosting of Winter Olympics will lead to a multiplied rise in national income. Rather, actual growth is one of the benefits that should be raised to address this question. So while it is good to explain how there is stimulus in the economy when government expenditure (G) rises, which leads to multiplied rise in real GDP via the multiplier, there is no need to go through the 3 cycles of expansion. Succinctly explain how an increase in government expenditure will raise AD, cause firms' inventory to fall and relate to increases in the national income. Allude to the presence of multiplier by highlighting how households will spend a portion of additional income on consumption of domestic goods and services, and how that will lead to further increases in AD and real GDP. Note that via the multiplier effect, the initial rise in G will cause a larger increase in national income (focus is not on multiple increases in AD).
- In justifying the hosting of the Olympics note that the issue is not so much a microeconomic issue as it is a macroeconomic issue. The government is not thinking specifically about the winter sports market when they were deliberating over the hosting of the Olympics.
- Some students **incorrectly** identified the government's expenditure on infrastructural projects as I, when it should be G. Some students also wrongly commented that foreign direct investments will increase as they thought the investments were done by foreign firms. These students should note that it is the government of China who is building the infrastructure.
- Similarly, tourism is considered as export of services to foreigners, i.e., export revenue, X is what is impacted and not consumption expenditure, C.
- An equally **common error** was to suggest that when the government steps up spending for the Olympics, there was increased employment which led to increased income and thus consumption expenditure, leading to a rise in AD rises. An increase in induced consumption (due to increased income) cannot cause an initial rise in AD.

- Students like to bring in the concept of opportunity cost incurred hosting the Olympics. It is not clear how this point adds value to the entire response since every decision will incur an opportunity cost as resources are scarce. The more crucial issue here is whether there is a strong rationale to undertake such an economic decision - which is found in the benefit vs cost such a decision could have on China.
- Some students explained that when people are lifted out of poverty due to more job opportunities, there will be an increase in the quantity of labour and hence AS increases and vertical AS shifts right. This is **incorrect**! Increase in employment does not affect the quantity of labour, rather, it allows more efficient use of resources! Those previously unemployed were already part of the labour force, and so there is **no** change in the quantity of labour.
- A handful of students linked the rise in employment from hosting the Winter Olympics to improvement in income equality. Such a cursory relationship is not accurate as it does not show how the gap between the lower and higher income earners are closing because of having more people employed for the Winter Olympics. Given the lack of information in the case extracts, this is therefore not the best point to bring in for the question.
- Students used the case extract of 430000 lifted out of poverty to justify the hosting of Winter Olympics without being able to explain the link. This piece of information is at best a supporting evidence for a point of argument and not a strong argument on its own for a nation with a huge population like China.
- Students who brought in market failure due to negative externalities often:
  1. could not identify the external cost on 3rd parties accurately
  2. spent too much time writing about how market failure is resulted, without linking back to why it will affect China. There should be a link back to non-material SOL, the government's microeconomic aim of efficiency, or that the growth experienced is unsustainable to address the question more directly.
- Many students could not label their AD-AS diagram well. Please note that the X-axis is REAL GDP not real GDP per capita. And please use Y, Y1 etc to label the income levels instead of Q as we are not looking at output here.

<u>Skills:</u>

- Similar to part e, there were very few and weak attempts to contextualise the answer to the case of China. Students need to work on application of concepts to the case material rather than giving pure theoretical points, as the latter will gain minimal credit in a case study.
- Some responses approached this question as an SOL question, where costs and benefits of hosting the Games were analysed through its effect on SOL. This limited the scope of answers that the students could provide.
- This question is not on whether China should or should not host the Olympics. Some students misunderstood and ended up answering their own questions (and losing their evaluation marks).
- Quite a handful of students mentioned the 'stand' in their introduction and not in their concluding paragraph. This is not the wisest choice since students should always take the stand at the end after considering all possible points in the body. There should also be a **clear** stand on whether the decision is justified or not justified, taking into consideration the significance of the benefits and costs discussed earlier.

Essay Questions

Question 1

In Feb 2022, Abbott laboratories, the largest U.S. supplier of powder infant formula recalled many of their products after reports of bacterial infection in babies. In the same period, U.S. experienced a marginal fall in their real gross domestic product.

Adapted from The Washington Post, 2022

a) Explain the impact of above-mentioned events on the total expenditure on powder infant formula by consumers in the U.S. [10]
b) Discuss the appropriateness of various policies the U.S. government can adopt to enable low-income households to afford powder infant formula. [15]

Part (a)

Requirement 1:	Explanation of DD & SS factors + market adjustment process
Requirement 2:	Explanation of impact on TE, with relevant application of PED

Introduction

In this essay, we will be using the demand-and-supply model as well as price elasticity of demand concept to analyse the impact of the above-mentioned events on the total expenditure on powder infant formula by consumers in the U.S in 2022.

Explain the DD factor

[P] A fall in the real gross domestic product (real GDP) led to a fall in the demand for powder infant formula in the U.S.
[E+E] A fall in real GDP in the U.S. translated to a fall in household income and purchasing power among American consumers. Assuming powder infant formula is a normal good, this would have led to a fall in ability and willingness of consumers (households with infants) to pay for it.
[L] This would have led to a fall in demand for powder infant formula in the U.S.

Explain the SS factor

[P] The recalling of powder infant formula by Abbott Laboratories led to a fall in the supply of powder infant formula in the U.S.
[E+E] Due to reports of bacterial infections among babies, Abbot Laboratories made the decision to recall many of their products, which led to a fall in availability of powder infant formula in the market. Producers as a whole are less able and willing to sell at every price level.
[L] This would have led to a fall in supply of powder infant formula in the U.S.

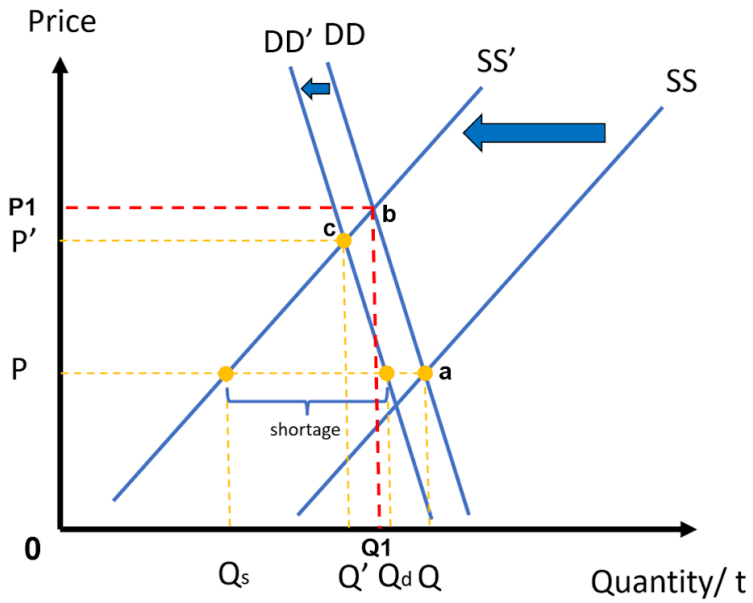
Explain SS falls > DD falls

[P] The supply for powder infant formula would likely have fallen more than the demand.
[E+E] Powder infant formula is likely considered a normal necessity good because the degree of necessity is very high as it is the main food source for infants. Hence, a fall in household income likely led to a less than proportionate fall in demand for powder infant formula. Additionally, the fall in real GDP is said to be “marginal”. Hence, demand likely fell to a small extent. On the other hand, supply likely fell to a large extent. This is because Abbott Laboratories is the largest producer in the U.S and it recalled many of their products. This would have significantly reduced the availability of powder infant formula in the market.
[L] On balance, supply would likely have fallen more than the demand.

Explain the market adjustment process with reference to diagram

[P] With the fall in supply outweighing the fall in demand, the equilibrium price would have risen while equilibrium quantity would have fallen.

Market for infant powder formula in U.S



[E+E] The fall in demand is illustrated by a leftward shift of the demand curve from DD to DD' while the fall in supply is illustrated by a leftward shift of the supply curve from SS to SS'. With fall in supply outweighing the fall in demand, there is a shortage created at the original equilibrium price P, as quantity demanded Qd exceeds the quantity supplied Qs. This puts an upward pressure on the price as frustrated consumers enter a bidding process. As the price rises, producers would increase the quantity supplied since it has become more profitable to sell while consumers who are not willing and able to pay the higher price will reduce their quantity demanded. This process continues until a new equilibrium is reached.
[L] The equilibrium price rises from P to P' while the equilibrium quantity falls from Q to Q'.

Analyse the change in TE

[P] Since the equilibrium price and equilibrium quantity changed in the opposite direction, we must analyse the impact of the above-mentioned events on total expenditure on powder infant formula step-by-step.
[E+E] Holding demand constant at DD, the fall in supply from SS to SS' led to a rise in price and fall in quantity. The demand for powder infant formula is likely to be price inelastic due to the lack of close substitutes for it so when price rises, consumers cannot easily switch away to other goods. Therefore, the rise in price from P to P1 leads to a **less than proportionate** fall in quantity demanded from Q to Q1, leading to a rise in total expenditure from area 0eaQ to area 0P1bQ1.

Holding supply constant at SS', the fall in demand from DD to DD' led to a fall in total expenditure from area 0P1bQ1 to area 0P'cQ' since both price and quantity fell from P1 and Q1 to P' and Q' respectively.

As the fall in supply outweighs the fall in demand, the rise in total expenditure due to the fall in supply will outweigh the fall in total expenditure due to the fall in demand.

[L] The total expenditure on powder infant formula by consumers in the U.S in 2022 would thus have risen from area 0PaQ to area 0P'cQ'.

Mark Scheme

Level	Descriptors	Marks
L3	• A clear and accurate analysis of how the events affect both supply and demand • Clear and accurate **analytical** explanation of how the combined impact of the change in supply and demand affects **total expenditure** on powder infant formula • Includes **diagram(s)** that are accurately drawn and well-referenced	**8 - 10**
L2	• An underdeveloped answer that attempts to link the events to impact on total expenditure on powder infant formula • Answer is generally accurate but with some gaps in analysis • One-sided analysis that involves only either a shift in demand or shift in supply	**5 – 7**
L1	• Mere listing of some demand and supply factors and assertions of how the events affects total expenditure on powder infant formula • Limited/ incorrect use of DD-SS tool of analysis Contains major conceptual errors	**1 – 4**

Markers' comments:

Content:

- Some students only did a single shift analysis, which was incomplete as they did not use the entire preamble. A few students left out the part on 'marginal fall in real GDP,' causing the analysis to be incomplete. For questions where the preamble is binding (with the question highlighting 'abovementioned events') and must be addressed, make sure to read the information carefully and use the entirety of the preamble. Moving forward, students should spend a bit more time analysing the question and preamble (if binding) during the planning phase.
- A handful of students identified the recalling of Abott's products to be a DD factor. This is not a strong point because ultimately, we are looking at the market for powder infant formula of **all brands**, not just Abott's. Scripts mentioning that this factor will affect consumers' taste and preferences for powder infant formula often fell short. This is simply because in reality, the dominant effect is consumers switching away from Abott's products to other brands, instead of consumers switching away from powder infant formula as a whole.

- Not all students explained the market adjustment process before doing the step-by-step TE analysis. This leaves a gap in the analysis because the market adjustment process is the mechanism behind why market prices and quantity changes. And the change in price and quantity is what determines the change in total expenditure. Moving forward, students must remember to include the market adjustment process whenever they encounter questions that require them to analyse impacts on a market.

- Some students were still not able to identify the shortage/surplus correctly on their diagrams. It is done by looking at the initial equilibrium price and dotting horizontally to the new DD (giving Qd) and SS (giving Qs) curves. Students who were unable to do so should clarify their errors and practice more during their own revision to gain familiarity with it.

- Many students used PED and PES to justify the extent of DD and SS shift. This is **incorrect**. PED & PES tells us the responsiveness of Qd and Qs when price changes respectively, i.e., movements along the DD and SS curves. PED & PES does not tell us anything about shifts in DD and SS! Students should be looking back at the DD and SS factors to justify the relative shifts of DD and SS. For example, SS falls significantly since Abott is the largest producer in the U.S. and recalled many of their products while DD fell marginally since powder infant formula is a

normal necessity due to its high degree of necessity and a rise in income leads to a less than proportionate fall in demand.

PED should be brought in to determine the change in TE when SS fell during the step-by-step TE analysis.

- Many students who brought in the step-by-step TE analysis failed to explain it in a coherent manner. For example, some brought in PED during the step where they analyze DD shifting when they should have brought it in during the step where they analyse SS shifting. This reveals a lack of deep understanding of why PED is brought in during the analysis. Moving forward, students should look into the rationale behind the concepts more closely and do more practices prior to the exam.

- On a related note, quite a few students did not apply PED explicitly in their step-by-step TE analysis. For example, they wrote "since DD is price inelastic, a fall in SS would lead to a rise in TE". There is a gap in the analysis where students should elaborate that "... a fall in SS will lead to a rise in price. As the **rise in price would lead to a less than proportionate fall in quantity demanded**, TE will increase".

- The common expression used by some students "the income elasticity of demand is inelastic" should be correctly expressed as "the demand for infant formula is income inelastic, with YED value between 0 and 1". Precise expressions are important since they affect the accuracy of the analysis. Moving forward, students must practice writing the correct expressions to avoid getting unnecessarily penalised.

- A small handful of students brought in PES and mentioned how that contributed to a sharp rise in price. This is not relevant to the question since the question is asking for how total expenditure changed and not the extent to which equilibrium price changed. This also reveals a lack of understanding as to when to bring in PES in the answer. Moving forward, students must understand the rationale of bringing in PES and only bring it in if the question requires.

- A small handful of students mistakenly brought in AD-AS analysis, possibly because they saw the words "real GDP" in the preamble, thinking this must be a macroeconomics question. What they didn't realise is that this factor would have affected households' income, which is a DD factor. Moving forward, students must dissect the question very carefully to know what concepts to bring in. Microeconomics concepts are used for questions looking at single markets (e.g., powder infant formula) while macroeconomics concepts are used for questions looking at the entire economy.

Skills:

- A handful of scripts **incorrectly** analysed the market for Abott's powder infant formula instead of the market for all powder infant formula. This was apparent when they analyse a change in demand due to a change in taste and preference for Abott's products or when they argue that Abott's products are demand price elastic since consumers perceive them to have many close substitutes (other brands). Moving forward, students must be very clear on which market they are analysing lest they make the same mistake.

- There was a lack of elaboration of the DD and SS factors for some scripts. The minimum one can elaborate on is to acknowledge a change in the willingness and/or ability of consumers/producers to buy/sell, causing a change in the market demand/supply.

- Students should read the preamble carefully to pick up hints that supply shifted more than demand. Possibly because they wanted to avoid bringing in the tedious step-by-step analysis, some students forcefully argued otherwise. Such analysis unfortunately sounded rather contrived and was not convincing. **Responding to the question critically** is very important to score well for economics. Students must craft their answers to address the question rather than come into

the exam with a rehearsed set of answers. The former plan is a much better strategy to score well.

- Many students did not apply the step-by-step TE analysis in their answer, limiting the rigour of their analysis. Bringing in the TE analysis is needed whenever the equilibrium price and equilibrium quantity changes in the opposite direction. It is not enough to simply look at the diagram and determine whether the equilibrium price has changed more than the equilibrium quantity. This 'analysis' is not based on any economics concept. Moving forward, students need to explain their points rigorously.

- Reference to diagrams can be better e.g. identification of 'shortage' at initial equilibrium price, identifying the different areas of TE in the step-by-step TE analysis etc. Diagrammatic references in your analysis will enable higher L marks since they add much rigour to your explanations.

b. Discuss the appropriateness of various policies the U.S. government can adopt to enable low-income households to afford powder infant formula. [15]

Requirement 1:	Analytical explanation of one policy that enables low-income households to afford powder infant formula.
Requirement 2:	Analytical explanation of one other policy that enables low-income households to afford powder infant formula.

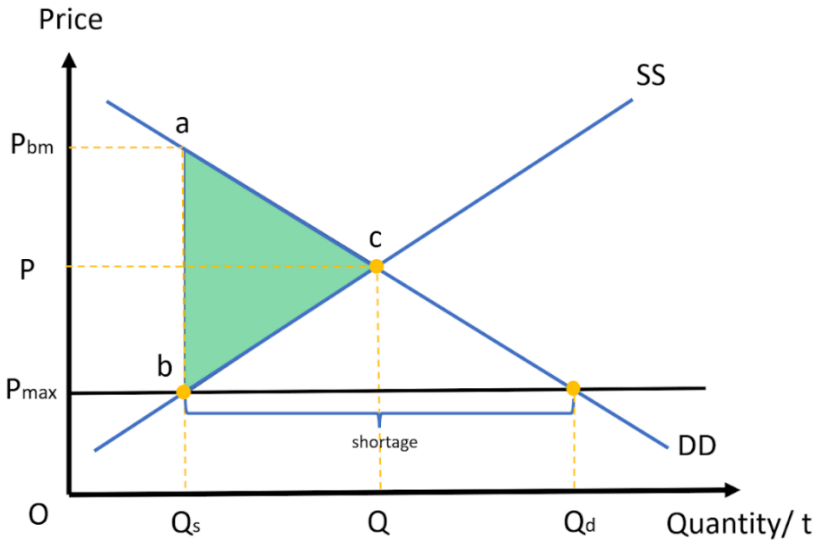
Introduction

As the price of powder infant formula rises, the U.S government can adopt a few policies to increase its affordability. In this essay, we will explain how a price ceiling and importing more foreign brands can lower the market price of powder infant formula in the U.S, thereby enabling low-income households to afford them. To evaluate the appropriateness of the policies, we will discuss their effectiveness to lower the market price as well as some of their unintended consequences.

Policy 1: Explain how price ceiling works

[P] To increase affordability of powder infant formula, the U.S government can impose a price ceiling or set a maximum price on it.

Price ceiling on powder infant formula in the U.S



[E+E] A price ceiling would only be effective if it is set below the market equilibrium price, P. The government can set the price ceiling at Pmax, where producers are not legally allowed to charge any price level above it. At Pmax, the quantity demanded Qd exceeds quantity supplied Qs, resulting in a shortage. Left to the free market, there will be an upward pressure on the price as frustrated consumers enter a bidding process. However, since producers cannot raise the prices with a price ceiling, the shortage will persist, and the prices of powder infant formula will be artificially capped at Pmax. Given the persistent shortage, an alternative allocation system for powder infant formula will be required, e.g., rationing through coupons.
[L] If the low-income households can obtain the infant powder formula, they would be able to do so at a lower price than before, enabling them to better afford it.

Possible in-body evaluation points for price ceiling

[Evaluation – Unintended Consequence] The price ceiling will result in an overall welfare loss for society, assuming that the initial equilibrium quantity Q is allocative efficient. With the implementation of the maximum price Pmax, the quantity bought/sold at Qs is now less than the socially optimum level Q. For Q_s – Q units that are under produced/consumed, the total social benefit is greater than

the total social cost. There is net gain to society if these units were to be produced. Since this net gain is not enjoyed by society, this constitutes a welfare loss represented by the area abc. Therefore, the price ceiling will lead to an overall welfare loss for society.

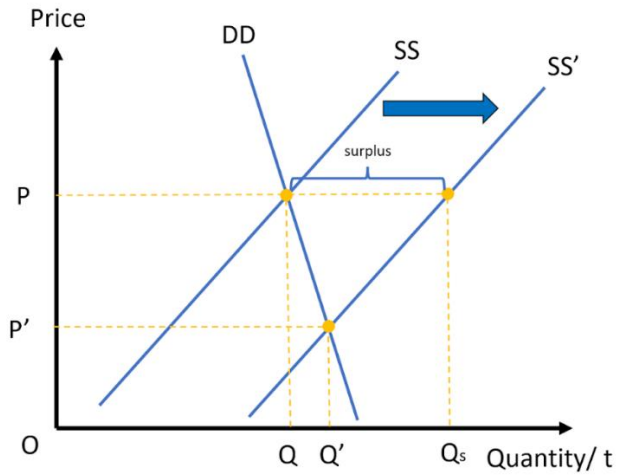
[Evaluation – Effectiveness] A price ceiling may not be an effective policy to improve affordability of powder infant formula. While some households enjoy lower prices, the policy may not be able to help all the consumers. The immediate impact of a price ceiling is that quantity demanded will be higher and quantity supplied will be lower, thereby causing a shortage (Qd – Qs). While some of the low-income households can buy the powder infant formula at a lower price, the rest are unable to do so due to the shortage. Furthermore, this policy is a broad-based measure and not targeted at low-income households. This means that the consumers that manage to buy the formula at the lower prices may not necessarily be from the lower-income families who could not afford them at the higher price without the intervention.

[Evaluation – Effectiveness] There may also be some consumers who are able to pay a higher price but are unable to obtain the powder infant formula. This may lead to the emergence of a black market where consumers resort to buying powder infant formula at a price higher than the legal price at Pbm. In the U.S, the likelihood of a black-market emerging is quite high since the resale market via online platforms is popular. Without appropriate regulation that prevents consumers from reselling, this would defeat the purpose of implementing the price ceiling in the first place, limiting the effectiveness of the policy to enable low-income households to obtain the product.

Policy 2: Explain how importing more foreign brands works

[P] To increase affordability of powder infant formula, the government can increase the supply of powder infant formula by importing more foreign brands into the market.

Importing more foreign brands into the U.S market of powder infant formula



[E+E] The U.S government can source for foreign brands and import them into the market, increasing the availability of powder infant formula. This increases the market supply illustrated by a rightward shift of the supply curve from SS to SS', resulting in a surplus at the original equilibrium price level P as quantity supplied Qs exceeds quantity demanded Q. This puts downward pressure on prices as producers lower their prices to clear excess stock. As price falls, Qd rises while Qs falls until a new equilibrium is reached.
[L] The market equilibrium price falls from P to P', enabling how-income households to better afford powder infant formula.

Possible in-body evaluation points for importing more foreign brands

[Evaluation - Effectiveness] As the demand for powder infant formula is likely to be price inelastic (mentioned in part a), the rise in supply due to the policy will lead to a significant fall in the equilibrium price. This is because it requires a large drop in price to clear the surplus since consumers are unresponsive to price changes. Hence, this policy will be effective in enabling how-income households to better afford powder infant formula

[Evaluation - Effectiveness] This policy is likely effective immediately, which is appropriate given the urgency of the situation. The U.S. seems to be heavily reliant on Abott in the production of powder infant formula. The unexpected recalling of products by Abbott resulted in a sudden drop in market supply that requires intervention which increases the availability of powder infant formula in the market immediately. Diversifying its sources beyond local production and importing more foreign brands from neighbouring countries such as Canada into the domestic market does just that.

Policy 3: Explain how vouchers work briefly

To better enable low-income households to afford powder infant formula, the government can also provide vouchers to targeted segments of people, for example, lower-income parents with infants. With these vouchers that enable households to exchange for powder infant formula, the ability to consume for the lower income households would increase and they would have greater access to powder infant formula.

Alternative policies such as production subsidies (similar explanation to policy 2 above) are accepted.

Conclusion

[Stand] In conclusion, these policies are likely appropriate to enable low-income households to afford powder infant formula. However, importing more foreign brands is probably more appropriate than a price ceiling.

[Substantiation] As explained in part a, there is a shortage of powder infant formula in 2022 due to the recalling of many products by Abbott. While a price ceiling can lower the market price, it unintentionally worsens the shortage that already existed in the first place, resulting in more consumers being unable to obtain powder infant formula for their babies. This is extremely detrimental to the health and survival of the infants and likely pushes consumers to black markets as they become increasingly desperate to secure the good. This would further reduce its affordability as consumers must pay a much higher price of Pbm, especially to low-income households. Importing more foreign brands into the U.S market on the other hand targets the root cause of the problem by filling the gap caused by the recalling of Abbott's products. This policy is not only able to lower the market price but also increase the market quantity quickly, alleviating the detrimental impacts of a powder infant formula shortage.

Mark Scheme

Level	Descriptors	Marks
L3	• Well-developed answers that discuss at least ***two*** policies that improve the affordability of powder infant formula • Clear diagrams drawn and explained	**8 - 10**
L2	• Answers may lack accurate economic analysis, depth and/or coherence • Inadequate scope in answers, e.g., only one policy is explained	**5 – 7**
L1	• Answer contains several theoretical mistakes • Mere assertions of how government policies improve the affordability of powder infant formula • Listing of policies without economic explanations	**1 – 4**

Evaluation		
E3	• For an answer that provides supported evaluative statements and arrives at an analytically well-reasoned and synthesised judgement with reference to context (e.g. powder infant formula, the U.S)	**5**
E2	• Attempts to consider different possibilities and perspectives (e.g., how a policy that worsens the shortage may not be appropriate even if it can lower the price of powder infant formula) or question assumptions, but not clearly explained or elaborated	**3 – 4**
E1	• For an answer that gives an unsupported justification • Purely theoretical evaluation without consideration of the context	**1 – 2**

Markers' comments:

Content:

- There were generally gaps in the explanations of the policies i.e., policies were not well-explained to illustrate how they better enable low-income households to consume powder infant formula.

Production Subsidy

- Many students did not bring in the market adjustment process when explaining a production subsidy. This is important as it is the mechanism behind how the subsidy lowers the market price to better enable low-income households to consume powder infant formula. The market adjustment process, while not extremely crucial for questions on market failure, is important for this question tackling inequity. Moving forward, students must be more aware of the relevant analysis to bring in to answer different questions.

- Some students were confused and explained how a production subsidy tackles allocative inefficiency instead of inequity. This reveals an insufficient understanding that the same policies can be used to tackle different microeconomic issues; a production subsidy can be used to tackle welfare loss from positive externalities but also reduce inequity in the distribution of a good/service, since it lowers price. Students' confusion was made evident with a diagram illustrating the presence of positive externalities and how the subsidy can address the "underconsumption" and remove the welfare loss. Since the focus of this question is on inequity, one should not lose focus and bring in market failure because it would be irrelevant to the requirement of explaining how the policies can improve equity. There was also no evidence of positive externalities in this context of powder infant formula anyway.

- On that note, a handful of scripts also mentioned that "if the government has perfect information, the government can implement a corresponding per unit subsidy". This assumption is not relevant because there is no 'ideal' per unit subsidy to improve the affordability of powder infant formula, unlike the case where a 'correct' amount of production subsidy is able to eliminate the welfare loss due to positive externalities completely. Moving forward, students must move beyond pure memory work and respond to questions more critically.

Price Ceiling (Maximum Price)

- Many students were unable to elaborate on how the price ceiling works beyond the fact that it is set below the equilibrium price. Many students also brought in the 'shortage' created without really going anywhere after that. The appropriate elaboration is to explain how the 'shortage' cannot be cleared due to the price ceiling, unlike when left to the free market where consumers can enter a bidding process. Therefore, a price ceiling artificially caps the price at Pmax and prevents it from rising. Additionally, there is also a need for alternative ways to distribute the goods, since the shortage means that not everyone can consume it.

Other comments

- While the intention to improve the purchasing power of low-income households is acknowledged, imposition of a nation-wide minimum wage policy is **not** an appropriate choice for a problem that affects only 1 market. Furthermore, the powder infant formula market only affects households

with infants. Moving forward, students should select policies that address the problem directly i.e., policies that tackle that specific market.

Skills:

- Given the time constraint, students should focus on explaining 2 'rigourous' policies. Good choices would be a price ceiling and a production subsidy, both of which allow for diagrammatic analysis. Students who chose 'less rigorous' policies like direct provision, free provision or a vague transfer payment are unable to score high L marks due to a lack of rigour. Moving forward, students should always go for rigorous points, rather than easy points to bring in for their analysis.

- Many students attempted to evaluate without any consideration to the context of the US when the country has been clearly specified in the question. This makes the evaluation theoretical and not rigorous, limiting the amount of E marks the scripts can score. Moving forward, students must remember to contextualise to score higher E marks in their answers. Do not be afraid to attempt it. Contexutualisation needn't be about bringing in precise real-world statistics; it can simply be educated arguments based on the characteristic of the country e.g., the U.S. is a large country with many states so the effectiveness of a price ceiling could vary widely since it depends on the individual state's ability to implement an appropriate allocation system as well as to curb the emergence of a black market.

- On a related note, selection of evaluation points is also important. Students should not repeat one evaluation point across different policies for example unintended welfare loss or high opportunity cost for all the policies. Instead, students should bring in different evaluation points for a greater scope of evaluation. Moving forward, students should plan to bring in a variety of evaluation points before writing their answer.
- By itself, opportunity cost is not a good 'limitation' since every decision undertaken incurs an opportunity cost. If the policy requires a lot of resources, however, then perhaps there may be some value in highlighting how the opportunity cost incurred would be significant.

- Because of the way the question is phrased, there was no clear stand to take, which unfortunately resulted in many students not concluding with a stand that directly addresses the question. If you encounter such a question again, the trick is to identify the key word in the question. The main task over here is to evaluate the "appropriateness" of the policies so a concluding stand must at least assert whether the policies are appropriate or not. Students can either conclude that all the policies are appropriate OR all are not appropriate OR some are appropriate while others are not. If they wish, students may also compare the appropriateness of the policies, though it is not required since the question did not ask for **relative** appropriateness specifically.

- Many attempts at evaluations are also under-developed and often stay at the assertion level i.e., unexplained statements about the limitations of the policy. Students must link back to the issue of improving equity. For example, many students simply wrote "A price ceiling may cause a black market to emerge." But so what? This statement is only an assertion that does not seem to have any significance to answering the question. A better evaluation would go on to elaborate how the emergence of black market may result in consumers paying an even higher price of Pbm than before, defeating the entire purpose of the policy and limiting its effectiveness to improve affordability of powder infant formula. Another example is "A subsidy is not appropriate because it causes allocative inefficiency." Okay.. and then? Again, this statement is not linked back to address the question. A better evaluation would acknowledge that subsidies are not appropriate as the government's attempt to address inequity may result in an unintended trade-off of another goal of allocative efficiency. It's all in the writing! Try to pick up such nuances when you read suggested responses and **practice** crafting more elaborated evaluations that address the question more directly.

Question 2

Even though e-cigarettes have not been approved by the U.S. Food and Drug Administration (FDA) as a smoking aid, e-cigarettes manufacturers have been proposing that e-cigarettes have benefits and have engaged in persuasive advertising to increase sales. Meanwhile research shows that ultrafine particles from secondhand vape aerosol can increase the risk of cardiovascular disease among secondhand smokers.

Source: FDA, Accessed Aug 2022

*E-cigarettes are devices that make vapour for inhalation, simulating cigarette smoking.

a) Using the above extract, explain why governments intervene in the market for e-cigarettes. [10]

b) Discuss whether government intervention in the market for e-cigarettes will result in a more efficient outcome. [15]

Part (a)

Requirement 1:	Analytical explanation of how supplier induced demand by e-cigarette producers leads to market failure.
Requirement 2:	Analytical explanation of how negative externality from the consumption of e-cigarettes leads to market failure.

Introduction:

Market failure refers to the failure of the free market to allocate resources efficiently. Since one of the microeconomic goals of the government is to maximise society's welfare, governments intervene in the market for e-cigarettes due to market failure arising from supplier induced demand and negative externalities.

Body:

[P] Governments intervene as there is supplier induced demand in the market for e-cigarettes.
[E, E] Due to asymmetric information, the producers of e-cigarettes will know more than consumers about the true adverse impacts of smoking e-cigarettes such as respiratory problems and increased risk of cancer. To increase their profits, producers of e-cigarettes have proposed that e-cigarettes have benefits through persuasive advertising, and likely withheld information on the negative impacts. This have caused consumers of e-cigarettes to overestimate the benefits of consuming e-cigarettes. The perceived marginal private benefit (MPB) of consuming e-cigarettes will be higher than the true MPB of consuming e-cigarettes.

In the diagram below (Fig. 1), assuming no externalities, marginal private cost (MPC) equals marginal social cost (MSC) and true MPB equals marginal social benefit (MSB). Consumers base their demand on perceived MPB and consume e-cigarettes up till Qe where DD=SS. However, society's optimum level of consumption is at Q* where MSB=MSC and society's welfare is maximised. There is an overconsumption of e-cigarettes from Q* to Qe. Between Q* and Qe, MSC is greater than MSB. The addition to total social cost from consuming Q* to Qe units (Area A+B) is greater than the addition to total social benefit (Area B). Hence there is a deadweight loss of the shaded area A which represents a net loss to society's welfare.
[L] Governments will intervene in order reduce consumption of e-cigarettes and maximise society's welfare.

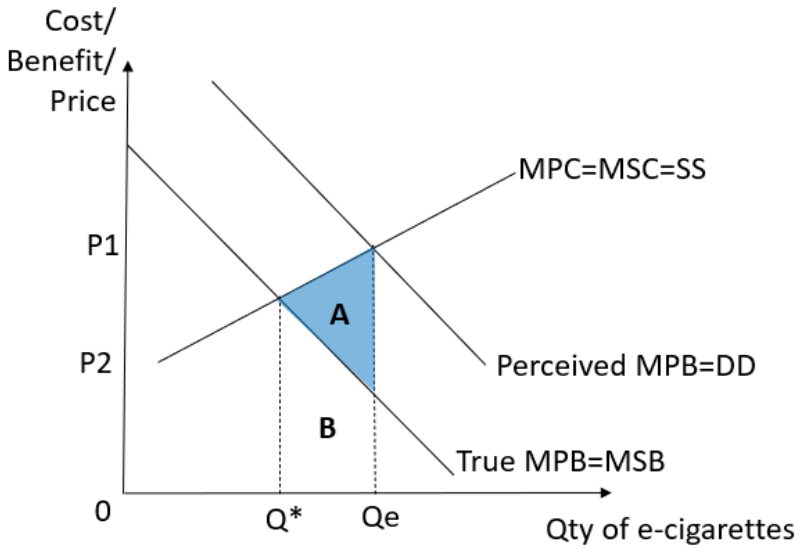


Fig.1 Supplier induced demand in the e-cigarette market

[P] Governments intervene as consumption of e-cigarettes also generates negative externalities which result in market failure.
[E, E] Negative externalities are external costs imposed on uncompensated third parties not involved in the consumption or production of e-cigarettes. The consumption of e-cigarettes results in "ultrafine particles" which increase cancer risk in secondhand smokers. The family members or friends of e-cigarette users breathe in the vapour which subsequently increases their risk of cancer. This results in higher medical bills which represent external costs. Due to the presence of these marginal external costs (MEC), the MSC lies above the MPC.

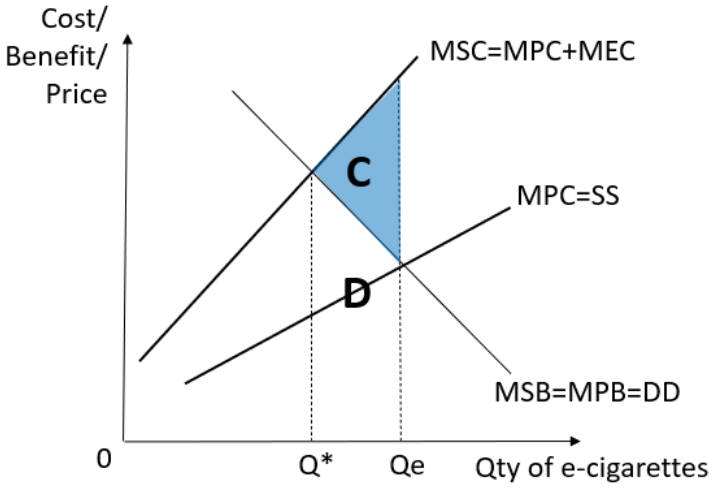


Fig.2 Negative externality in the e-cigarette market

In the above diagram (Fig 2), assuming no positive externalities, MPB equals MSB. Consumers of e-cigarettes seeking to maximise their self-interest only consider their own private costs and benefits and ignore the external cost borne by third parties. As such, in the market where equilibrium is where DD=SS, they consume Qe units of e-cigarettes. However, society's optimum level of output is where MSC=MSB, which is at Q*. There is an overconsumption of e-cigarettes from Q* to Qe. Between Q* and Qe, MSC is greater than MSB. The addition to total social cost from consuming Q* to Qe units (Area C+D) is greater than the addition to total social benefit (Area D). Hence there is a deadweight loss of the shaded area C which represents a net loss to society's welfare.
[L] Governments will thus intervene to reduce consumption of e-cigarettes and maximise society's welfare.

Mark Scheme

Level	Descriptors	Marks
L3	Well-explained and contextualised answer that demonstrates understanding of why governments intervene due to due to market failure caused by supplier induced demand and negative externalities in the market for e-cigarettes.	8 - 10
L2	Under-developed answer with gaps in the explanation of why governments intervene due to market failure caused by supplier induced demand and negative externalities in the market for e-cigarettes. OR A good and thorough explanation of why governments intervene due to market failure caused by supplier induced demand OR negative externalities in the market for e-cigarettes.	5 - 7
L1	Mere stating of definitions with little or no explanation. Answers contain basic or major conceptual errors.	1 - 4

Markers' comments:

Content:

- Many students still identify the area of welfare loss wrongly. This affects the accuracy of the analysis. Moving forward, students should move beyond pure memory work and really understand and look at the areas of TSB and TSC from consuming Q*Qe units to identify the correct area of welfare loss.

- There were gaps in the explanations such as not making the necessary assumptions and not analysing how the area of welfare loss came about. It is **insufficient** to just explain what the externality is or how information is imperfect; students should also follow through to explain the welfare loss.

- Some scripts were not thorough in how the two quantities (market outcome and socially optimal level of output) were determined. The **market** outcome is where DD=SS, and the socially optimal level of output is where MSB=MSC, because at that point, societal welfare is maximised!

- Some students used terms such as MSB or MSC **incorrectly**. It is wrong to say that "MSB of consuming Q* to Qe units is smaller than the MSC of consuming Q* to Q units". It should be **T**SB and **T**SC. 'Marginal' only looks at the next additional unit – so in contrast, saying that 'for **every** unit between Q* to Qe, MSB is less than MSC' will be correct.

- There were a handful of students who were confused whether the negative externalities arise from consumption or production of the good. In this case, they should consider what the external cost is. Since most students wrote about secondhand inhalation of vapour and subsequent medical impacts, it must be due to consumption!

- Some students also seemed to be confused whether it is the consumer or producer who will 'ignore the negative externalities in their decision-making'. Actually, **both** self-interested consumers and producers would ignore the external cost!

- The question asks for why governments intervene in the **market** for e-cigarettes, but many scripts did not label DD and SS in the diagram. Instead, students chose to illustrate the cost-benefit analysis for e-cigarette use and the analysis was based on consumers' perspective only (considering MPC and MPB for private equilibrium) rather than a market analysis (considering market equilibrium where DD=SS). The latter is what is needed to address the question directly.

- Students also tend to miss out the label for MSB in the diagram for supplier induced DD. As a result, this affected their analysis as students were not able to identify where the allocative efficient output (where MSB=MSC) is.

- It was rare but there were scripts that combined both negative externalities and imperfect information in the same diagram which led to incomplete and confusing analysis. Keep them separate for ease of explanation.

Skills:

- Some students only identified one cause of market failure. Given the mark allocation, this is clearly **insufficient**. The information in the question also highlighted 2 sources of market failure.

- When the question reads “Using the above”, there must be reference made to the preamble. Many students explained consumer ignorance from a pure theoretical standpoint without considering the preamble (persuasive advertising).

- Many students simply quoted the information from the preamble without explaining using their own words and economic concepts, some to the extent of using direct quotations. This limits the rigour of analysis. Moving forward, students need to explain in greater detail beyond lifting from the preamble.

- Diagrams were drawn but there were many mistakes in the labelling of curves and missing axis labels. Please also draw diagrams that are big enough, with a ruler. Also, do not cram words around your diagrams!

Part (b)

Discuss whether government intervention in the market for e-cigarettes will result in a more efficient outcome. [15]

Requirement 1:	Analytical explanation of how government intervention might result in a more efficient outcome.
Requirement 2:	Analytical explanation of how government intervention might result in a **less efficient** outcome.

Introduction:

There is market failure in the market for e-cigarettes due to the presence of supplier induced demand and negative externality, prompting governments to intervene in the market. If the welfare loss after intervention is less than the welfare loss originally in the market, government intervention will have resulted in a more efficient outcome.

Body:

Side 1: Government intervention can result in a more efficient outcome.

[P] Government intervention via public education can result in a more efficient outcome.

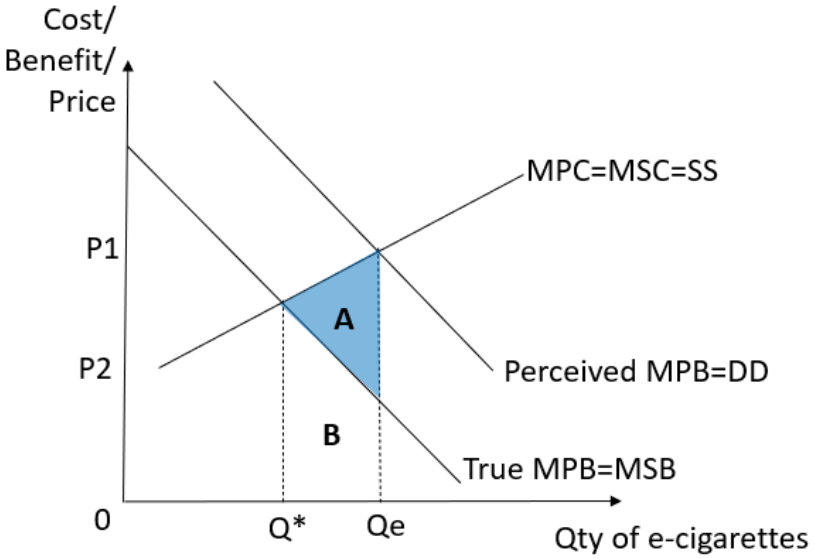


Fig. 3 Impact of public education

[E, E] Public education addresses the problem of asymmetric information, by educating consumers on the true marginal private benefits of using e-cigarettes. The government can carry out public health campaigns such as advertisements on social media to educate the public on the increased risk of cancer from smoking e-cigarettes. This reduces the extent of asymmetric information as consumers are now more aware of the harms to themselves arising from e-cigarette consumption. The perceived MPB will fall closer to the true MPB and demand falls since consumers will be less willing to consume e-cigarettes after knowing their true benefits of doing so. If such public education campaigns are perfectly successful in closing the information gap such that the perceived MPB aligns with the true MPB = MSB, the new market equilibrium output will coincide with the socially optimal output Q* (since demand would now be based on true MPB), and the initial welfare loss of area A will be eliminated.
[L] Government intervention will result in a more efficient outcome.

[Ev - Limitations] However, given that e-cigarettes are addictive in nature, public education may have a limited effect on discouraging current users from kicking the habit. Hence the extent to which government intervention can improve allocative efficiency is limited.

[Ev – Limitation] Given that e-cigarette manufacturers already have existing advertisements which promote e-cigarettes as the healthier alternative, public education campaigns organised by the government will have limited impact on improving society's welfare. This is because the perception created by e-cigarette manufacturers have already been entrenched among consumers, and a change in mindset will take considerable time. As such the extent to which government intervention can improve allocative efficiency is limited.

Alternative:
[P] Government intervention in the form of a tax can result in a more efficient outcome.

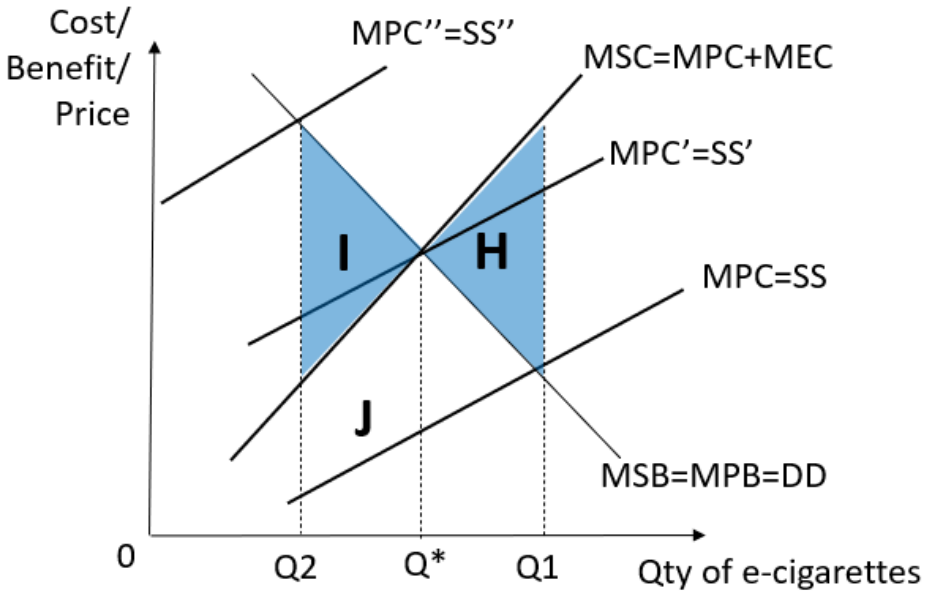


Fig.4 Impact of a per unit tax

[E,E] Governments can impose a per unit tax equal to MEC at Q* to solve the market failure arising from the consumption of e-cigarettes. A per unit tax will raise the marginal cost of production for e-cigarette producers, resulting in a fall in their willingness and ability to produce e-cigarettes. The resulting fall in supply will create a shortage, causing a rise in the market price of e-cigarettes and reducing its consumption. If the government has perfect information on the extent of MEC, the per unit tax will cause MPC to rise to MPC' and SS to fall to SS'. The market equilibrium quantity where SS'=DD now coincides with the socially optimal level of output where MSB=MSC. This will mean that output will fall from Q1 to Q* and the deadweight loss of area H (Fig. 4) is removed.
[L] Hence government intervention can result in a more efficient outcome.

Side 2: However, in certain cases, government intervention may result in a less efficient outcome.

[P] If the government lacks perfect information on MEC and impose a wrong amount of tax, the outcome may be worse.
[E,E] Should the government overestimate the MEC and impose a tax that is too large, MPC might rise till MPC'', with supply falling till SS". This results in an underconsumption of e-cigarettes as the new equilibrium output where SS''=DD (Q2) is less than the socially optimum level (Q*). Between Q2 and Q*, MSB is higher than MSC. Hence there is a net benefit to be gained for every additional unit of e-cigarette consumed between Q2 and Q*. By consuming e-cigarettes up till Q2 there is a deadweight loss of area I which represents the net benefit that is not enjoyed due to the excessive tax by the government.
[L] Should area I be larger than area H, government intervention has resulted in a worse outcome.

Alternative:
[P] If the government uses policies that may overcorrect, such as a ban, the outcome may become less efficient.
[E,E] With a ban on e-cigarettes, consumption of e-cigarettes falls to **zero** since e-cigarettes will no longer be consumed.

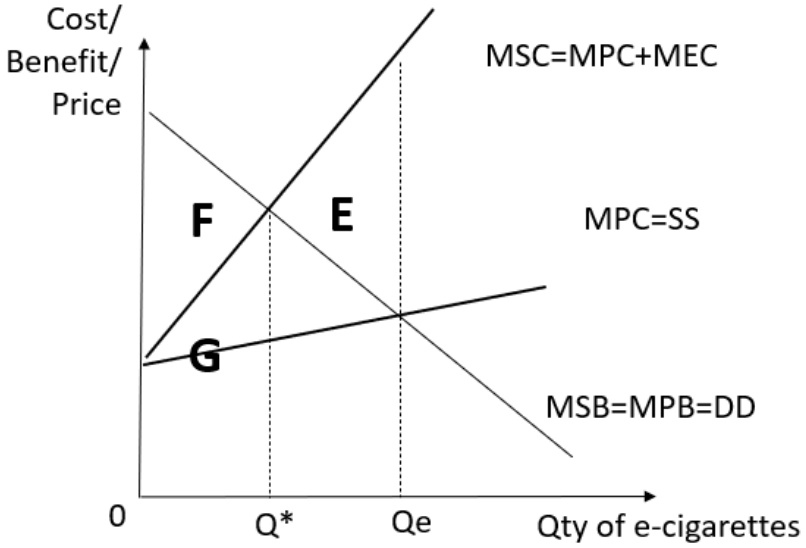


Fig 5. Impact of a ban on e-cigarettes

Without the ban, consumption of e-cigarettes will be at Q, where DD=SS. This incurs a deadweight loss of area E as previously explained. With the ban on e-cigarettes, society incurs a deadweight loss of area F as there is no consumption of e-cigarettes. From 0 to Q*, MSB lies above MSC. The addition to total social benefit from consuming Q* units (Area F+G) is greater than the addition to total social cost (Area G). This leads to a deadweight loss of area F as society did not realise the net benefits from having some consumption of e-cigarettes.
[L] If area F is larger than area E, the ban would lead to a larger welfare loss, i.e., less efficient outcome.

[Ev – validity of argument] There might be some truth to the claims of e-cigarette manufacturers regarding e-cigarettes possibly helping those who are addicted to smoking cigarettes to slowly cure their addiction. Hence, for countries where a significant proportion of the population are addicted to smoking, banning the consumption of e-cigarettes may result in a greater welfare loss as the net benefit of consuming e-cigarettes that is lost to a ban may be significant.

Conclusion:

[Stand] Government intervention in the e-cigarette market will likely result in a more efficient outcome.
[Substantiation] The extent of asymmetric information in the consumption of e-cigarettes is likely to be significant since e-cigarette companies have been actively advertising (in countries where they could) and pods are usually sweet smelling, making it more likely that consumers underestimate the harms that it might cause them. This would imply the initial welfare loss in the market is large, and there is potential for public education, even if not very successful, to improve the outcome. Furthermore, information regarding the health risks can likely be easily understood by the public, making it more likely that public education will improve efficiency in the market.

Excessive taxes and bans are also unlikely to result in a worsening of market outcomes since the extent of MEC in e-cigarette consumption is likely to be large. Since secondhand smoke from e-cigarettes can result in cardiovascular diseases which are often serious and require extensive medical attention, the external costs to third parties in the form of healthcare costs will likely be high. Since MEC is large, implying initial welfare loss in the market is large, a ban will likely result in an improvement in society's welfare. In addition, a large MEC makes it less likely that a tax imposed by the government will be greater than MEC at Q*. Even if the tax imposed is greater than MEC at Q*, it is not likely that the extent of over tax will be significant to cause a worsening of allocative efficiency. Hence, government intervention in the e-cigarette market will likely result in a more efficient outcome.

Note: Taxes and bans may be implemented to tackle welfare loss from asymmetric information too – since the welfare loss from asymmetric information is likely to be large in this context, the latter argument would work for the case of asymmetric information too.

Mark Scheme

Level	Descriptors	Marks
L3	Well-explained and balanced answer that analyses whether government intervention improves allocative efficiency.	8-10
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 in allocative efficiency.	5-7
L1	Mere stating of definitions with little or no explanation. Answers contain basic or major conceptual errors.	1-4
Evaluation		
E3	Makes well-explained substantiated judgement on whether government intervention is more likely to improve allocative efficiency by considering the context (e-cigarettes market), different factors that affect the likelihood to which policies will improve efficiency e.g. accuracy of information available etc.	5
E2	Attempts to substantiate whether government intervention will lead to improvements in allocative efficiency.	3-4
E1	Unsubstantiated judgement of the extent to which government intervention will lead to improvements in allocative efficiency	1-2

Markers' comments:

Content:
- Many students did not explain their chosen policies rigorously. There is need to refer to the diagrams drawn and explain how the market outcome will be impacted e.g., is there a change in

DD or SS? and how the new market output level will be closer to the socially optimal level of output.

- When explaining a production tax, some students only drew a DD-SS diagram showing that supply will fall, without including the initial market failure problem in the diagram (i.e., there is no MEC or underestimation of true MPB). Such a diagram is **not helpful** in complementing the explanation of how a production tax can improve efficiency in the market for e-cigarettes because there is no 'problem' for the tax to solve, and the diagram does not show how the tax can result in the market equilibrium quantity falling to Q*, the socially optimal output level.
    - **Learning Point:** To illustrate how a policy can solve market failure, students should draw in the cause of the market failure together with how the policy works to improve or achieve allocative efficiency.

- The welfare loss areas were frequently inaccurately shaded, especially for policy interventions that may also lead to an inefficient outcome. This may be because students are used to policies eliminating welfare losses rather than worsen inefficiency and therefore were not able to identify the correct areas. Make sure to clarify this!

- The policy of public education tackles consumer's ignorance and not negative externalities. Some students mention that the government can educate the consumers on the negative impacts on 3rd parties like their friends and family members, leading to a fall in perceived MPB to their true MPB. This is theoretically **incorrect** because consumers are assumed to be self-interested and therefore would ignore impacts on third parties in their decision making, regardless of whether they know of the impacts. Externalities also do not influence the consumers' MPB or MPC.

- In explaining how a ban works to address the market failure, students were generally able to state that quantity would be 0 with the implementation of a ban. However, several scripts wrongly made the link to a missing market since quantity becomes 0 and digressed from explaining the policy. The focus should be on how the ban can impact on welfare in the market.

<u>Skills:</u>

- Many candidates did not answer the question directly, but rather approached this question from the angle of the typical "discuss appropriateness of policies" question. However, this question required consideration of potential government failure instead. Evaluative comments should therefore be made in response to this, rather than on the policies.
  This incorrect approach also contributed to why many essays were imbalanced (i.e., one-sided), and why many evaluation points were irrelevant. For example, mentions of monitoring cost and budget constraints were common evaluation points which did not address the question and therefore were not credited.

- Besides the above reason, many evaluation points also did not address the question as the final [L] or link back to the question was not made. For example, many students evaluated that public education takes a long time to take effect but did not link back to say that therefore, government intervention might not lead to a more efficient outcome in the short run. Moving forward, students need to read the questions carefully to ensure that their evaluation points are relevant.

- Some evaluation points were also too generic and were not applied to the context of e-cigarettes, resulting in less insightful evaluation. There is also potential in this question to consider how the scenario may be different in different countries since no specific country context was provided.

- A small handful of students made use of their diagrams in part (a) to illustrate their policies in part (b). This in itself is okay, but the problem comes when they do not bother to make a note to the marker to refer to the diagram in part (a). Markers are not expected to flip to and fro the pages if they are not asked to. Moving forward, students should make clear references to their diagrams (e.g., Fig 1 in part (a)).

Question 3

In his National Day Rally speech, Prime Minister Lee Hsien Loong highlighted that Singapore must preserve its business hub status, attract more foreign investments, and continue to develop local companies and entrepreneurs to sustain growth in the long run. He also recognised that for economic growth to benefit all Singaporeans, it must be inclusive.

Adapted from: CNA and PMO, Aug 2021

(a) Explain possible reasons for changes in autonomous consumption and investment expenditure. [10]

(b) Discuss whether attracting more investments will enable Singapore to achieve inclusive growth. [15]

Note: Part (b) contains points that cover Inclusive Growth (Book 8 Section 7) and is not included in the 2023 Promo exam. However, it is still worth going through the question to understand the question requirements and points covered.

Part (a)

Requirement 1:	2 factors for changes in autonomous C
Requirement 2:	2 factors for changes in autonomous I

Introduction

- Define key terms
  - Consumption expenditure (C) refers to disposable income that households spend on consumer goods and services to satisfy their current wants. Changes in autonomous consumption refers to changes in consumption expenditure arising from changes in non-income factors.
  - Investment is the process of creating capital goods not for current consumption but for the expansion of the productive capacity of the economy. Therefore, investment spending refers to spending by firms on new capital goods.
- Outline approach
  - This essay will explain some possible factors that affect autonomous consumption and investment expenditure.

Body

[P] Changes in **interest rate** will change both autonomous consumption and investment expenditure. [E+E] A fall in interest rate, such as in the case of Turkey in recent times, decreases the cost of borrowing. With a decreased cost of borrowing, households are incentivised to borrow to purchase big ticket items. Additionally, a fall in interest rate decreases returns to savings. Hence, when interest rates fall, the opportunity cost of consumption decreases and households' willingness to consume in the current period will rise. Thus, a fall in interest rate will cause autonomous consumption expenditure (C) to rise.

Interest rate is also the marginal cost (MC) of investment. When interest rates fall, the MC of investment decreases, and assuming that MB=MC initially, some previously unprofitable units of investments will now become profitable since the fall in interest rate would result in MC being lower than marginal benefit (MB) for these units. These investments would now be undertaken. Hence, the fall in interest rate will cause autonomous investment expenditure (I) to rise.

[L] Therefore, a fall in interest rate will increase autonomous consumption and investment expenditure, and vice versa.

[P] Changes in **direct taxes** will also change both autonomous consumption and investment expenditure.
[E+E] For households, disposable income is income that is available for consumption or savings after deducting income taxes and other compulsory contributions and adding transfer payments from the government. Hence, disposable income (Y_d) = National income (Y) - direct taxation + transfer payments. When there is a fall in personal income tax, which is a form of direct tax for households, Y_d will increase, ceteris paribus. For example, in 2022, income tax for yearly earnings in Spain's Valencia region was lowered. This increases households' purchasing power and hence their willingness and ability to consume goods and services rise, increasing C.

In the case of firms, a fall in corporate tax rate will increase the expected rate of after-tax profits on investment. With higher returns on investment, firms will demand more capital goods, and this increases I.
[L] Hence, a fall in direct taxes such as personal income tax and corporate tax will result in a rise in C and I respectively.

[Alternative Point]
[P] A country's **economic outlook** will also affect autonomous consumption and investment expenditure.
[E+E] When there is optimism about the future state of the economy, economic outlook is positive. This increases consumer confidence as households expect the economy to do well in the future. With the expectations of a rise in their future income, C increases as consumers are now more willing to purchase big-ticket items such as cars and luxury watches.

When economic outlook is positive, firms also expect the economy to do well and expect improved profit margins in the future. Hence, MB of investment increases since their expected rate of returns to investments increases. Assuming that MB=MC initially, and that interest rate is constant, some initially unprofitable units of investments will now become profitable since the rise in expected rate of returns would result in MB exceeding MC for these units. Firms will hence want to increase their capacity by buying more capital, causing autonomous investment expenditure (I) to rise.
[L] Hence, a positive economic outlook can result in a rise in both C and I.

Note to students:
- *There is no need to repeat the explanation for the marginalist principle multiple times when explaining changes in I. You will just need to do it well one time.*
- *Other possible factors are accepted, though level of rigour in analysis may differ (e.g. change availability of credit that impacts both C and I).*

Mark Scheme

Level	Descriptor	Marks
L3	**Knowledge + Application + Analysis** ● Well-developed explanation of at least 2 factors that affect autonomous consumption and investment expenditure respectively, supported with relevant examples	8 – 10
L2	**Knowledge + Application**	5 – 7

	● Incomplete or underdeveloped explanation of factors that affect autonomous consumption and investment expenditure ● One-sided answer that only explains factors affecting autonomous consumption OR investment expenditure	
L1	**Knowledge** ● Answer states some definitions and/or shows some knowledge of factors affecting autonomous consumption and investment expenditure ● Answer contains basic or major conceptual errors	1 – 4

Markers' comments:

Content:

- Considering that the main subject matter of this question is on autonomous consumption and investment expenditure, too few scripts bothered to define them or build their definition into their explanations.

- For those who attempted to define autonomous consumption and investment expenditure, these were some of the common errors:
  - There were many students who **incorrectly** thought that consumption expenditure (C) refers to consumption expenditure on domestically produced goods and services (Cd). They are is **not the same**, because C includes the expenditure on imported consumer goods and services as well.

    On a similar note, some students thought that I only referred to foreign direct investment by foreign firms, when it can in fact also be from domestic firms.
  - Understanding of what investment expenditure is tends to be much weaker than what consumption expenditure is. Some students wrote that entrepreneurs are the ones investing (in firms, or on capital) while a number explained how household investments rises/consumers increase investments when they expect higher rates of return. This is **incorrect**.
    Also, while the government could undertake spending on capital goods, this would not have been considered investment expenditure but government expenditure.
  - In addition to the points mentioned earlier, there were students who, through their writing, showed signs of confusion between microeconomics and macroeconomics. Commenting on how poor business outlook during covid causes producers to switch from producing one good to another (face masks) reveals weak understanding of investment expenditure, since the example provided focused on a singular market only (microeconomics).
  - On a related note, when choosing points such as expected changes in future prices, students need to be cognizant that this is macroeconomics and not microeconomics (i.e., DD/SS). For accuracy – what you should be considering is not the future price of a specific good, but general price levels of goods and services.
  - Additionally, there were still students who think that investment is money and hence used phrases like "investing their money". Revise the definition of investment! Given that we're looking out for economic analysis, students should be using the **economic definition** of investment, rather than the 'layman'. Investment entails spending on capital goods e.g., machinery that is used to produce other goods and services. It is NOT spending on human capital, research and development etc. This error shows itself in part (b) of the essay too, because some of the impacts being explained would not be because of an increase in I.
    - **Learning Point:** The definition of investment is **FIRMS' spending** on **capital goods**!

- The focus of the question is on explaining possible reasons for **changes** in autonomous consumption and investment expenditure. Hence, students should explain the factors as an increase / decrease (or rise / fall) , and NOT the factor is high / low.
    - **Learning Point:** 'Increase' / 'Decrease' (or 'rise' / 'fall') refer to changes. 'High' and 'Low' describe levels.

- A change in income affects induced C and **NOT** autonomous C. The correct factor affecting autonomous C is **expectation of future income change** (i.e. income has NOT changed yet, but households expect that their income may change in the future).

- In explaining the factors that affect I, it is important to bring in the marginalist principle for the explanation to be rigorous. Many scripts only mentioned that the particular factor causes MB or MC of investment to change and therefore I changes, but that is not sufficient for a rigorous and thorough analysis.
    - **Learning Point:** A change in MC also does not lead to change in MB (i.e., wrong cause and effect!)
    - Take note that in making investment decisions, firms weigh the MB and MC of **investment** (NOT borrowing!)

- For the factor of a change in interest rate affecting I, most students could make the link to a change in the marginal cost of investment. However, some students added that the change in interest rate also increases the marginal benefit (MB) of investment, which is incorrect. **The MB of investment is the expected rate of returns to investment, which is affected by factors such as economic outlook / business confidence.**

- A handful of students explained that a rise in interest rate will increase the ease of borrowing for households. This is incorrect as 'ease of borrowing' is NOT the same as 'cost of borrowing'.
    - **Learning Point:** A change in interest rate affects the cost of borrowing for households, which makes borrowing cheaper. What will change the ease of borrowing is the availability of credit.

- Some scripts mentioned that a fall in interest rates will increase the purchasing power of households, which is not accurate. Not every household borrows from the bank. The correct analysis is to link a fall in interest rate to **increased willingness to borrow money** from banks to purchase 'big-ticket' items.

- A couple of students wrote that a change in interest rates will affect MPS or MPCd. This is not correct.

- Many students who brought in expectations of change in future income or future prices did not link back to how consumption expenditure will change in the current time period. This makes the analysis incomplete.

- In some scripts, students explained that pessimism about future income will lead to more spending now and therefore consumption expenditure C will rise. This is inaccurate as pessimism will lead to less confidence about the future and therefore consumers would not want to spend as much now but choose to save instead to pay for expenses in future. Students may have been confused by expectations of change in future price levels as consumers will increase spending now if they expect higher inflation rates in the future.

- Students who tried to explain the impact corporate taxes have on the investment expenditure sometimes confuse it with a "production tax". Such students will also link the impact of corporate

tax to cost of production for firms which is wrong. When corporate taxes change, it is after-tax profits that will fall/rise instead.

- **Learning Point:** Corporate tax and production tax are **NOT** the same. Corporate tax is a direct tax that affects after-tax profits, while production tax is an indirect tax affecting marginal cost of production.

Skills:

- Students need to dissect the question carefully. The question reads 'explain possible reason**s** for changes in autonomous consumption and investment expenditure'.
  - The word 'reasons' suggest that this question requires students to explain 2 factors that affect C **AND** 2 factors that affect I. As such, it will be economical in terms of time management for students to pick factors that affect both C and I (e.g., interest rate changes).
  - There is also no need to link the factor to a rise or fall in AD and the multiplier effect and hence real GDP, since the question only requires the link to be made to how consumption and investment expenditure changes. The question is focused on "what could change the consumption and investment expenditure" **NOT** "what changes could investment and consumption expenditure cause". Explanation of the impact an increase in investment will have on the AD & AS is therefore irrelevant.

- In selecting factors that affect C, it is important to note that expectations of future income / wealth / GPL change are similar in nature. As such, it will be good for students to select other factors beyond 'expectations' to explain in the essay for better scope.

- Some students ended up choosing the points such as expectations only because they were "bound" by PM Lee's speech in the trigger. However, this question did not require you to 'cite' evidence, so you can be free to choose relevant content points. **Should there be a need to respond to the preamble, the command or content words will hint of the need.**
- Students should be choosing rigorous points instead of the easiest or shortest points to bring in. Many students opted for simple points like availability of credit but they fail to realise that markers cannot award high marks since rigour is lacking in the analysis. Moving forward, students should be more cognizant to choose rigour over easiness when it comes to choosing points for questions.

- There is no need to explain how one factor leads to both a rise and fall of C (or I), since the explanation would likely be just repeated in the opposite direction.

- Students can use more examples to better illustrate each point. Many answers were purely theoretical with no use of examples. While the lack of examples will not necessarily land you in the L2 range, a script with examples tend to illustrate a much better understanding of the concepts explained. For example, students can use the example of Brexit to illustrate why UK citizens might expect lower incomes in future.

Part (b)

Discuss whether attracting more investments will enable Singapore to achieve inclusive growth. [15]

Note: Part (b) contains points that cover Inclusive Growth (Book 8 Section 7) and is not included in the 2023 Promo exam. However, it is still worth going through the question to understand the question requirements and points covered.

Requirement 1:	Impact of attracting more investments on sustained growth
Requirement 2:	Impact of attracting more investments on income distribution

Introduction

- Define key terms
  - Inclusive growth indicates a rate of growth that is **sustained** over a period, is **broad-based** across economic sectors and creates productive employment opportunities for the majority of the country's population. In the case of Singapore, inclusive growth implies economic growth that **takes income distribution into consideration**.
- Outline approach
  - This essay will first explain how attracting more investments will enable Singapore to achieve sustained growth, as well as better income distribution, to achieve inclusive growth, before discussing the extent to which it allows inclusive growth to be achieved in Singapore.

Body

Side 1: Attracting more investments will enable Singapore to achieve inclusive growth

[P] Attracting more investments can enable Singapore to achieve sustained growth.
[E+E] Attracting more investments into Singapore increases investment expenditure (I). The rise in I increases aggregate demand (AD), and the AD curve shifts rightwards from AD0 to AD1, as seen in Figure 1.

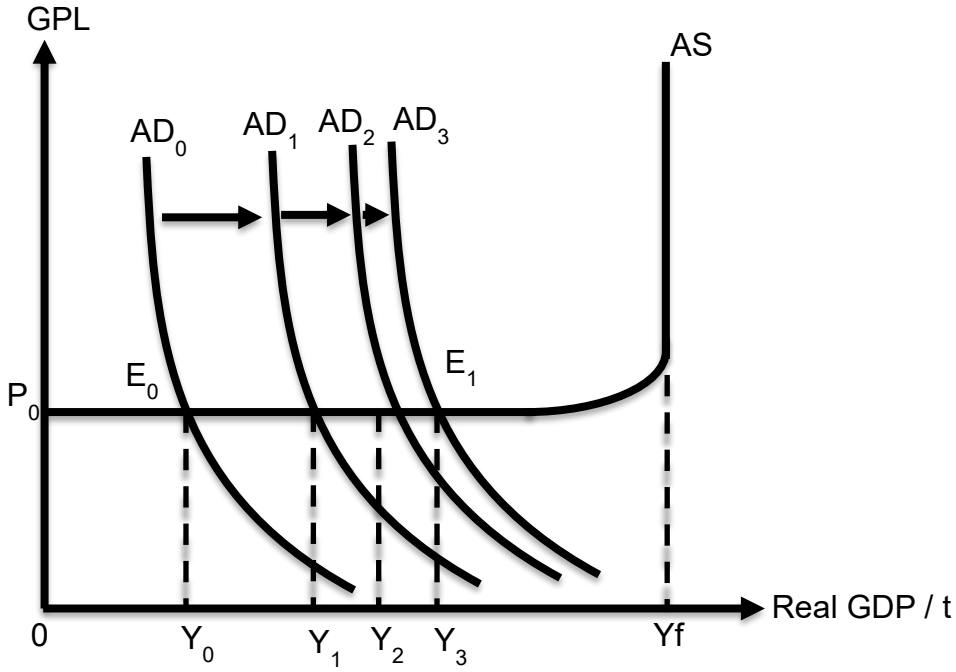


Figure 1: Multiplied rise in real GDP due to rise in AD

Assuming spare capacity in the economy, a rise in AD will lead to a multiplied rise in real GDP due to the multiplier effect. Assume the economy was initially at equilibrium E0 and the equilibrium real GDP was at Y0. A rise in AD from AD0 to AD1 due to increase in I will cause the total planned expenditure to exceed actual output of an economy. As a result, firms will experience unplanned fall in their inventories and increase their production by hiring more factors of production (FOPs). In return, firms will pay more factor income to households and national income rises from Y0 to Y1 as shown in Figure 1. With the rise in income, households will spend a portion of it on domestic goods and services (Cd), while the rest are withdrawn as savings (S), taxes (T) and import expenditure (M). This rise in induced Cd will lead to another round of unplanned fall in firms' inventories as the total planned expenditure exceed actual output of the economy again. Firms then react by increasing production and hiring more FOPs. In return, firms will pay more factor income to households and real GDP rises again from Y1 to Y2. Households will then spend a portion of it on domestic goods and services, causing a rise in induced Cd once more, as well as another round of increase in withdrawals. This will trigger multiple rounds of increases in income and the process continues until total withdrawals equal to total injections. The economy reaches a new equilibrium at E1 where AD3 intersects the AS curve. Overall, there is a multiplied rise in real GDP from Y0 to Y3, and actual growth is achieved.

[Possible in-body Ev – state of the economy] However, Singapore's unemployment rate is relatively low at around 3%, suggesting the economy is likely operating near full employment level. Hence, further increases in AD without an accompanying rise in productive capacity would only lead to increases in GPL and not real GDP. Therefore, to achieve a sustained increase in real GDP, an increase in productive capacity and hence rise in vertical AS is necessary.

[E+E] The rise in I through attracting investments also increases the productive capacity of the economy, as it leads to capital accumulation, assuming the gross investment rate exceeds the capital depreciation rate. As such, the quantity of capital increases overall, and this leads to an increase in the productive capacity of the economy. AS hence increases and vertical AS shifts outwards from AS to AS'. Full employment real GDP increase from Yf to Yf', as illustrated in Figure 2.

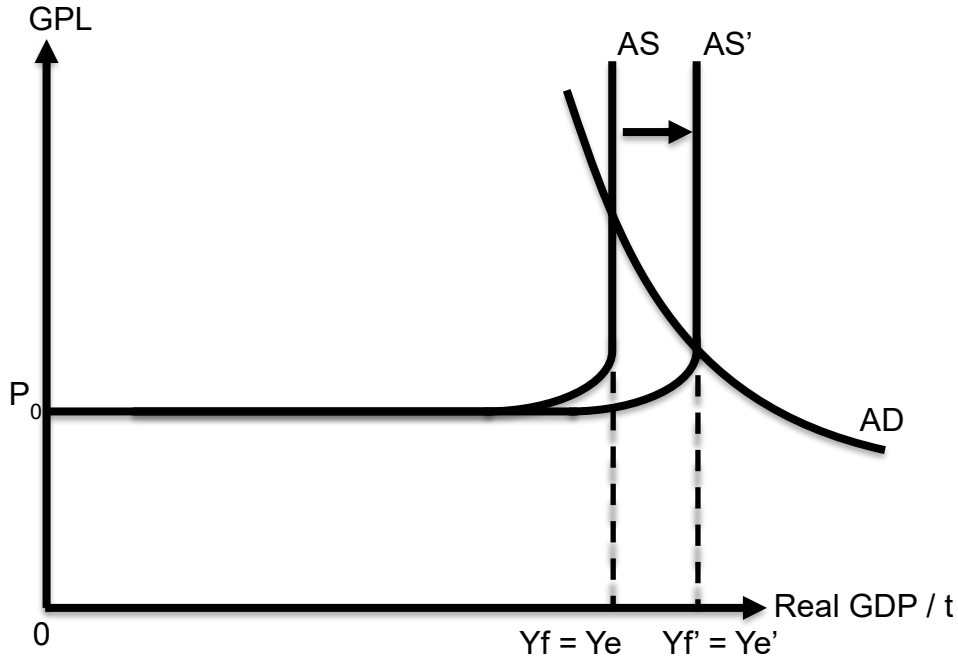


Figure 2: Rise in productive capacity

Since Singapore is near full employment, this rise in productive capacity and hence rise in AS increases the equilibrium real GDP from Ye to Ye' due to the wealth, interest rate, and international substitution effect. The rise in productive capacity also allows for increases in real GDP to be sustained over time.
[L] Therefore, attracting more investments can enable Singapore to achieve sustained growth, which provides a 'bigger pie' for growth to be made more 'inclusive'.

[P] Attracting more investments can enable Singapore to achieve better income distribution to achieve inclusive growth.
[E+E] Attracting more investments would mean that firms are buying more capital goods that are new and more efficient. With the use of more efficient capital goods among workers, labour productivity can increase since each unit of labour can produce a greater amount of output by using machinery. If the capital goods are used by those in the lower income group, they would see a rise in their labour productivity. This would increase the demand for these workers as their revenue contribution to the firm increases. The rise in demand for such workers, ceteris paribus, creates a shortage at the original wage rate, which puts upward pressure on wage rates. Wage rates for the lower income group thus increases. Assuming no change in the wage rates of the higher-income group, this allows the wage gap between the two groups to narrow.
[E+E] Moreover, since the rise in I leads to a rise in real GDP, this increases the government's ability to collect a greater amount of tax revenue. If this increase in revenue is redistributed to the lower income group, economic growth would also become more inclusive.
[L] Hence, attracting more investments can enable Singapore to achieve better income distribution to achieve inclusive growth.

[Possible in-body Ev – size of multiplier] However, in the case of Singapore, the extent of actual growth generated from an increase in I may be limited due to our small multiplier size (k). In Singapore, MPS is high due to high savings rate with the compulsory savings scheme under the Central Provident Fund (CPF) policy. The marginal propensity to import (MPM) is also high due to a lack of natural resources. As k=1/MPW, where MPW = MPS + MPT + MPM, the high MPS and MPM give rise to high MPW and hence a small value of k. With a high MPW, this means that there are more leakages out of the economy in each round and less is spent on induced consumption of domestically produced goods and service. This reduces the rounds of spending in the multiplier process and hence the overall increase in national income will be smaller. As such, the multiplied rise in real GDP due to the increase in I and thus AD for Singapore would be small. This implies a smaller increase in the amount of tax revenue that can be collected by the Singapore government to be redistributed to the lower-income group, and hence inclusive growth may not be achieved to a large extent.

Side 2: Attracting more investments alone will not enable Singapore to achieve inclusive growth

[P] However, attracting more investments may not enable Singapore to achieve inclusive growth as workers may not be equipped with the necessary skills, or they may be replaced by the machines instead.
[E+E] While the rise in I can lead to a rise in labour productivity when the lower-income workers make use of more efficient machinery, these workers may not have the relevant skills to operate the machinery if they were not trained to do so. When this is the case, the rise in productivity may not materialise and hence their wage rates would not increase.

[E+E] Additionally, since the machinery is more efficient, firms may also choose to replace these lower-income and likely lower-skilled workers with capital (i.e., capital-labour substitution) to reduce

their cost of production. This would reduce firms' demand for such labour, which lowers the workers' wage rates instead.
[L] Hence, attracting investments may not result in inclusive growth in Singapore.

Note: In total, two to three points that fulfil the requirements of the question would be sufficient.

Conclusion

[Stand] In conclusion, attracting more investments will enable Singapore to achieve inclusive growth.
[Substantiation] This is because in the context of Singapore, spending by firms, both foreign and domestic, are important and can stimulate increases in national output and income. As explained, spending on capital goods is important in generating potential growth to sustain the rise in national income since Singapore is likely to be operating near full-employment given our relatively low unemployment rate. Furthermore, Foreign Direct Investments (FDIs) play a crucial role in providing the expertise and capital needed for increased production.

The growth generated is likely to be inclusive because in Singapore, this strategy of attracting investments is complemented with other policies or strategies, such as the Skillsfuture scheme. Under this scheme, it encourages workers to go for training to learn new skills that are relevant to the current times, and hence they are likely to see a rise in their labour productivity and wage rates. As such, the economic growth that is generated from the rise in I is likely to be inclusive.

Lastly, since there are various redistribution policies in Singapore targeted at mitigating income inequalities (e.g. GST Vouchers and the Workfare Income Supplement scheme for the lower-income group), it is likely for growth that is generated by a rise in I to be inclusive, for the increase in tax revenue will likely be redistributed to the lower income groups.

Mark Scheme

Level	Descriptor	Marks
L3	● Well-elaborated and balanced answer that analyses the impact of attracting more investments on Singapore's sustained growth AND income distribution. ● Diagrams are used appropriately and accurately.	8 – 10
L2	● Under-developed answer with gaps in explanation on whether attracting more investments enables Singapore to achieve inclusive economic growth. OR ● Well-elaborated, one-sided explanation of how attracting more investments enables Singapore to achieve sustained growth OR better income distribution.	5 – 7
L1	● Mere stating of definitions with little or no explanation. ● Answer contains significant conceptual errors.	1 – 4
Evaluation		
E3	Well-supported judgement on whether attracting more investments will enable Singapore to achieve inclusive growth, with thorough elaboration and explanation in the context of Singapore.	5

E2	Attempts to substantiate the judgement on whether attracting more investments will enable Singapore to achieve inclusive growth, but evaluative comments may not be fully elaborated upon.	3 – 4
E1	Unsubstantiated judgement on whether attracting more investments will enable Singapore to achieve inclusive growth.	1 – 2

Markers' comments:

Content:

- There seems to be a misinterpretation or misunderstanding of the term 'investment'. To explain the rise in investments, many students wrote about 'investments on retraining / skills upgrading of labour' or 'households investing more when their income rises', which is incorrect. **Investment is carried out by firms**, and it entails spending on **capital goods**.

- A handful of students also linked a rise in investment expenditure by firms to a rise in labour productivity. While this point is possibly valid, many were unable to explain it clearly. Labour productivity might increase with more capital because they can now use these capital such as machineries to produce more goods and services than before. Having said that, it is more direct and probably easier to link a rise in I to a rise in the quantity of capital in the country.

- Some students erroneously explained that the rise in investment increases productive capacity because there is a rise in quantity and quality of goods and services produced. Increases in productive capacity is due to increases in potential output, **not** actual! In some cases, students allude to the fact that when investment increases there are more employment opportunities and that will cause productive capacity to rise. This is **incorrect**! What affects the **productive capacity** of an economy is the quantity and quality of **factors of production** (i.e. land, labour, capital, entrepreneurship).

- A number of students remain unclear about the difference between productive capacity and productive efficiency. Distinctions between the terms have been highlighted under the markers' comments for case study.

- There is no need to use a numerical example in the explanation of the multiplier effect for this question because the focus of the question is not solely on how a rise in I will lead to a multiplied rise in real GDP. Some scripts were however too brief in the explanation of the multiplier effect.

- The focus of the multiplier effect is a **multiplied increase in real GDP**, not AD. Similarly, when we consider 'actual growth', the focus is on whether there is increase in real GDP. What illustrates actual growth is thus an increase in real GDP on the diagram! Depending on the state of the economy, an increase in AD may not lead to actual growth in the economy.
    - **Learning Point:** In short, AD is not equivalent to real NY. Make sure you're using the terms correctly!

- Students should be more conscientious in their explanation when they link the rise in I to changes in AD and **referencing the diagram drawn**.

- Many students recognised that sustained economic growth requires both actual growth and potential growth to be achieved but few could identify that economies do not achieve PG for the sake of PG, but to allow for AG over time. Stronger scripts would draw the shift of vertical AS in a separate diagram from the AD shifts and assume economy to operate near full employment level, explaining how the PG allows AG to happen. This illustrates sustained economic growth very clearly.

- That said, there were students who assumed that the economy is near full employment level when explaining how a rise in AS can lead to real GDP increasing but **wrongly** identified the rise in real GDP to be potential growth when rise in real GDP reflects actual growth instead.

- Some students went off track to bring in how investments will affect standard of living which was not necessary. There was some confusion between improving SOL (households can consume more goods and services) and having inclusive economic growth (majority benefits from the growth) observed in some scripts.

- A macroeconomic focus is required when looking at 'inclusive' economic growth. Some students focused on households being able to consume more food, water, etc. - here, your focus is more on equity in the distribution of specific goods and services, as opposed to the more macroeconomic 'inclusive economic growth'.
    - On a similar note, when explaining how increases in investment can lead to better income distribution, it is better to explain how the government can spend more to increase the income of lower income households, and not how government spending on subsidies etc. in a specific market can improve equity in the markets. While the point is not entirely wrong, the focus of specific markets is more 'microeconomics' and not 'macroeconomic'.

- A good number of students alluded to the fact the growth is not inclusive if the distribution of income is <u>not equal</u>. It is fundamentally flawed to think of 'inclusive' as <u>equality (equal income distribution)</u>.

- Some students gave a very good explanation in response to requirement 1 of the question but stopped at saying this is a pre-requisite to inclusive growth. They then quickly went on to discuss measures which could be used to achieve an improvement in equity through measures such as transfers, vouchers, etc. There was, however, no link established between the pre-requisite of growth to the achievement of inclusive growth. This made the response very awkward because it sounded as if there were 2 disparate processes happening when looking at inclusive growth.

- For those who considered the following point, many could not explain how a rise in investment may lead to widening income inequality and higher structural unemployment well. Many scripts just simply stated that a country like Singapore would restructure frequently hence leading to a rise in structural unemployment or widening income inequality. However, the starting point of all analysis for this question should be a rise in investments and not restructuring of the economy. Perhaps the investments were made in specific sectors like IT that increase wages disproportionately in these sectors as compared to other sectors.

  Some students who raised this point on structural unemployment also did not make a clear link back to how income distribution would worsen as a result and hence inclusive growth cannot be achieved.

- Many scripts that made links to income of workers increasing did not mention whose incomes will be rising. Unless the impact is specifically on low-income earners earning more, there would not be improvements in income distribution.
- In some cases of attempted evaluation, students highlighted that the increase in investment will not be inclusive because only the ones working in the new firms benefit from increased investments and not anybody else. This is reflective of the lack of understanding of the multiplier effect in a country where the first ones who benefitted in the expanding sector will then go on and spend more on other sectors, leading to a collective increase in income. So, the point of contention should not be "only the ones working in the MNCs will gain" but more a case of how much of these gains will trickle down to the others in the domestic sector and why.

Skills:

- Again, students need to dissect the question more carefully. The question reads 'discuss whether attracting more investments will enable Singapore to achieve inclusive growth'.
    - The question is NOT asking for why growth in Singapore is not inclusive, so it is irrelevant to explain wage differentials between different occupations in Singapore.

      The question is also NOT asking for suggestions on the different policies that the Singapore government can implement to achieve inclusive growth, so it is irrelevant to suggest that the Singapore government can implement policies like subsidies or minimum wages to ensure growth brought about by the rise in investment expenditure is inclusive.
    - The trigger in this question is 'attracting more investments' so that should be the starting point of your explanation(s). The end point of your explanation would be 'achieve inclusive growth', which you must unpack.
    - Actual and potential growth were generally addressed but students often missed out points linking to inclusivity of the growth and therefore their answer would not be complete. Too much weightage therefore was placed on sustained growth while explanation about inclusivity of growth was lacking.

- Many students did not make the link back to the question on "inclusive growth". For instance, many students concluded the multiplier process with a rise in real GDP without linking it back to actual economic growth. This ultimately does not address the question. Moving forward, students should be more aware of including the [L] for each paragraph to ensure they address the question directly.

- Evaluation was very often missing for this question. When there were evaluative comments made, they were however generic and not applied to the Singapore context. One good opportunity to apply knowledge of the Singapore context would be to evaluate the extent of the multiplier effect (but that was generally missing in the evaluation as well).

- On the vertical axis of the AD-AS diagram is the General Price Level (GPL). Do note that there is no unit for GPL (i.e., not $ like in the case of price when using the DD-SS diagram).