

ECONOMICS

Higher 2

Syllabus 9570

Examiner's Report

Year 6 Timed Practice 2025



ECONOMICS

Y6 H2 Timed Practice 2025

Paper 9570/01
Paper 1

Case Study

(a) Explain a possible reason for the change in the Gini Index of Singapore in 2019. [2]

Suggested Answer:

- The Gini index decreased in 2019 indicating a fall in income inequality/improvement in income distribution.
- Explain how income distribution improved.
 - o Rise in progressive tax- Higher income earners are taxed based on a higher marginal tax rate compared to lower income earners → difference in disposable income falls → narrowing the income gap.
 - o Higher cash transfers e.g. GST vouchers for lower income households. Since low-income households receive a higher amount of cash transfers → difference in disposable income falls → the income gap is narrowed.
 - o Progressive wages. This initiative has increasingly broadened to include other new sectors. Low wage workers experience conditional wage increments which narrow the income gap.

[No credit for stating higher taxes and subsidies without an explanation on how the income gap is narrowed.]

Mark Scheme:

- *Correct interpretation of the Gini Index – 1m*
- *Sound explanation for the change – 1m*

Examiners' Comments:

- *Many students explained the increased expenditure on preschool education. While this might reduce inequality in the future, the timing for its effectiveness would not coincide with the time period in the question as the preschoolers would only enter the labour force after their post-secondary/tertiary education.*
- *Many students did not provide clear links between Gini coefficient and income inequality. Students just generally mentioned change in gini coefficient without linking to income gap.*
- *Many answers listed reasons such as increased transfer payments without any further elaboration – these answers lacked depth.*

(b) Explain why preschool education should not be classified as a public good. [4]

Suggested Answer:

- Public goods are non-rival and non-excludable whereas preschool education is both rivalrous and excludable.

- Preschool education is excludable:
 - o Only students who are enrolled and have paid fees will be admitted into the preschool. Outsiders can be denied entry at a low-cost e.g. through attendance taking or use of access pass at the school gates.
- Preschool education is rivalrous:
 - o As the class size increases, each student will get less attention from the teacher, i.e., the utility from preschool education diminishes as more students are admitted to a class (the marginal cost of providing for another user is not zero).

Mark Scheme:

- *Identification and explanation of excludable nature of preschool - 2m*
- *Identification and explanation of rivalrous nature of preschool - 2m*

Examiners' Comments:

- *Lack of application e.g. why exclusion is feasible for a preschool.*
- *There was also confusion between rivalry and excludability as well as between rejectability (by consumers) and excludability (by producers)*
- *Some characteristics were described inaccurately e.g. exclusivity instead of excludability.*

(c) (i) Using the information in Extract 2, explain how asymmetric information might lead to a wrong choice in the market for preschool education. [2]

Suggested Answer:

A suboptimal choice of preschool education is made because the producers of preschool education have superior information compared to the consumers. Asymmetric information leads to moral hazard or adverse selection, which causes parents to make a wrong choice for preschool.

(i) Moral hazard

- Behaviour of the preschool administrators/teachers change after the transaction since it is difficult to monitor their behavior once the children are enrolled as seen from Ex. 2 "Kinderland, a private preschool made headlines for several cases of child mismanagement. It was found that the centre principal, did not exercise adequate supervision over her staff in their management of children."
- For example, a preschool might cut corners on staffing, curriculum quality, or safety procedures to save costs, knowing that parents may not easily detect these compromises, or teachers might not put in their full effort if their performance is not adequately monitored.
- The tragic cases of child abuse or neglect in some preschools suffice as examples of how some parents had made the wrong choice to send their children to the preschool.

OR

(ii) Adverse selection

- Preschool owners have more information about the quality of education/school experience than the parents and they take advantage of the situation by concealing the low quality of their service.

- Since parents cannot tell the quality from the price, some are misled into believing that a high price signals high quality.
- However as seen in extract 2 “a higher price point does not automatically equate to a better quality, or safer, programme.”
- Some parents could have made the wrong choice by paying higher school fees for low quality.
- [In the longer-term, parents will be less willing to offer high prices. As a result, the high-quality providers exit the market and it becomes saturated with lower quality providers.]

Mark Scheme:

- 1 well explained reason – 2m

Examiners’ Comments:

- A small number of students approached this as an imperfect information problem and missed out on key ideas in asymmetric information.
- Key concepts in the explanation of moral hazard or adverse selection were omitted from several answers. As a result, only partial credit was given.
- There was also insufficient elaboration on what the wrong decision was.

(c) (ii) Explain how the above problem could be corrected.

[2]

Suggested Answer:

(i) Moral hazard

- Improve monitoring. Installation of CCTV, Open classrooms etc. Can promote greater transparency within the preschool environment, as it is harder for individual teachers to isolate themselves or engage in misconduct unnoticed by colleagues or supervisors.
- Legislation. Stiffer penalties for misconduct/negligence. Creates a strong deterrent against harmful or negligent behavior. Knowing that serious consequences (e.g., loss of license, criminal charges, being barred from the sector) await misconduct can significantly reduce the incentive for moral hazard.

(ii) Adverse selection

- Legislation/Lemon law - Money back guarantees if parents are not satisfied with quality of care/education.
- External Validation and Certification to Signal Quality or Quality Rating and Improvement Systems (QRIS) - These systems, often implemented at state or national levels (like Singapore's SPARK accreditation), establish a set of quality standards and assess preschools against them, providing a rating or certification. This helps parents make informed decisions by providing a clear, externally verified signal of quality.
- Baseline Licensing Standards - Establishing and enforcing minimum licensing requirements to ensure basic health, safety, and operational standards are met. While not a quality signal itself, it prevents the entry of substandard programs.

Mark Scheme:

- 1 well explained solution to either moral hazard or adverse selection problem – 2m

Examiners' Comments:

- A majority of answers lacked details on how specific aspects of asymmetric information could be resolved. These generic responses e.g., educating parents on how to choose a preschool' scored poorly.

(d)(i) Compare the trends in out-of-pocket healthcare expenditure per capita between Singapore and Norway from 2015 to 2022. [2]

- Similarity
 - o Out-of-pocket healthcare expenditure per capita was increasing for both countries over the period.
- Difference
 - o Singapore's out-of-pocket healthcare expenditure per capita was consistently higher than Norway's.

Or

- While Norway's increased throughout, there was an anomaly for Singapore in 2018 when it decreased.

Mark Scheme:

- 1 similarity – 1m
- 1 difference – 1m

Examiners' Comments:

- Question was generally well attempted, but some students still failed to use adequate comparative words to "compare" between the countries. These answers did not get the full credit.

(ii) Using the data provided and your own knowledge, assess how the opportunity cost of increasing government expenditure on pre-school education may differ between Singapore and Norway. [8]

Suggested Answer:**Introduction**

- Opportunity cost is the next best alternative forgone. In the context of cost-benefit analysis, the opportunity cost of increasing government expenditure on pre-school education suggests there is less budgeted for other areas and a sacrifice is made.

Thesis: The opportunity cost of increasing government expenditure on pre-school education in Singapore is higher than Norway.

Key idea 1 - R&D budget

- Singapore is a small and open economy. Its comparative advantage lies in knowledge intensive high value-added production e.g. pharmaceuticals and biomedical research. As seen from table 1, there is a decreasing trend in R&D expenditure for Singapore whereas for Norway there's an increasing trend. Increasing the spending on pre-school education will translate into lower

expenditure on R&D, which is crucial for coming up with new and innovative products. There could be a negative impact of loss in comparative advantage and a fall in export revenue and future GDP growth. Whereas Norway's economy is more diversified and they have other sectors including aquaculture. Hence the op. cost is higher for Singapore.

Key idea 2 - Healthcare spending

- Singapore's out-of-pocket healthcare expenditure per capita was consistently higher than Norway's (Figure 3). This is due to the problem of ageing population and limited healthcare expenditure in the budget (12% vs 17% in Norway from Figures 1 and 2).
- The opportunity cost will be higher than Norway because potential cuts in healthcare spending will place a heavier burden on citizens to finance their own healthcare spending in Singapore, possibly lowering social welfare.

Antithesis: The opportunity cost of increasing government expenditure on pre-school education in Norway is higher than Singapore.

Key idea 1 - Loss of benefits from tertiary education

- Singapore has higher overall education expenditure than Norway (16% vs 11%). Although Norway's preschool sector is well funded, its tertiary education sector might not be as established and supported as Singapore's.
- Hence increasing funding on preschool education could have a higher opportunity cost for Norway in terms of reduced expenditure on tertiary education compared to Singapore.
- A lack of tertiary education could manifest in lower levels of labour productivity or mobility in Norway, which could also lead to other problems.

Other acceptable point - Government debt or crowding out effect (theoretically possible)

- Unlike Singapore, Norway is a welfare state. It is unlikely that Norway will be able to cut down on healthcare spending to finance preschool education due to a push back from the public.
- If Norway borrows to finance the increase in expenditure, this could result in a crowding out effect. A rise in the interest rate due to increased demand for loanable funds will result in lower investment, and a decrease in productive capacity from lower capital accumulation. AS shifts left and sustained economic growth might not be achieved.
- In contrast, Singapore has sufficient fiscal reserves and Net Investment Returns Contribution to finance the increased spending without the need to borrow from the public.
- Therefore, the opportunity cost for Norway is higher than Singapore.

[Note: this point is theoretically sound but in reality, Norway has run budget surpluses and has sufficient reserves to fund its spending without borrowing]

Conclusion & Evaluation

Comparison of any relevant factor affecting extent of spending or judgement on opportunity cost

- Opportunity cost depends on the extent of the increase in spending and the severity of the shortfall in current spending.
 - o Assuming that Norway's current spending on preschool education is higher than Singapore's it might not need to increase spending significantly. Furthermore, income

inequality is lower in Norway 0.28 vs 0.39 in Singapore, and Norway has topped the Starting Well Index (Ex.4).

- Singapore on the other hand, intends to double spending on the preschool sector to \$1.7b to address the income gap in accessing quality preschool education (Ex. 1).
- Hence, Singapore has the higher opportunity cost of increased expenditure.

Or

- Opportunity cost depends the characteristics of the economy
 - Due to land constraints in Singapore, the increase in government expenditure which entails building more and bigger preschools are likely to be higher. Land planning and development in Singapore poses a real challenge because of the limited space in which to provide housing, infrastructure, spaces for offices and industries, and leisure space. With the population expected to grow by a third in the next two decades, land will only become scarcer and more sought after. More land space will hence need to be diverted from other productive uses such as expansion of tourist facilities, industrial and housing, resulting in loss in economic output.
 - Hence, Singapore has the higher opportunity cost due to greater extent of increased expenditure.

Mark Scheme:

Knowledge, Application, Understanding, Analysis		
L1	▪ Smattering of points not directly linked to question ▪ Limited development of analysis; mere listing of points without economic analysis – simply states that opportunity cost increases without exemplifying what is the value of the next best alternative forgone in monetary terms. ▪ No case material	1 - 3
L2	▪ An answer that elaborates on the differences in opportunity cost between Singapore and Norway based on context and implications of resulting opportunity costs.	4 - 6
Evaluation		
E1	An unexplained judgement. An unexplained evaluative conclusion/comment	1
E2	Evaluative assessment supported by economic analysis – one explanation for stand would be sufficient	2

Examiners' Comments:

- There were a number of descriptive responses which listed different possible opportunity costs for each country with limited comparison.
- Many also confused benefits with opportunity cost. This error was the result of not defining the opportunity cost in the introduction.
- Many students simply listed that there would be less spending on healthcare, defence and R&D without explaining what the economic consequences (e.g., falling SOL? Slower AEG? PEG?) of reducing spending on these sectors will be.
- Many students only explained the opportunity costs of either Singapore or Norway but not both, let alone the comparison.
- Under evaluation, some students argued that since the benefits of increasing spending on preschool education are high, the opportunity costs will be lower. This is not a convincing argument because opportunity costs only depend on how much the country is forgoing for not choosing the

next best alternative. This question is just on the opportunity cost of spending on preschool, and not weighing between the benefits vs the opportunity cost of spending.

- (e) As a consultant economist, discuss whether the Singapore government should follow Norway's maximum price legislation in the market for pre-school education. [10]

Suggested Answer:

Introduction:

- Price ceiling is a maximum price that can be charged legally for pre-school education.
- In the case of Norway, it was NOK 2,990 per month for both private and public pre-schools.

Thesis: Singapore should follow Norway's maximum price legislation

- Inequality is one of the most pressing issues Singapore faces and needs to be tackled early at preschool according to K Shanmugam. (Ex.2)
- Norway took top spot in the starting well index (Ex. 4).
- A maximum price is usually imposed with the aim of achieving some form of equity. For example, imposing a price ceiling will make attending preschool more affordable for the lower income families.
- Placing a limit on the maximum price that can be charged for preschool education will reduce the ability of private operators like Kinderland from charging an exorbitantly high price for enrolment in their schools.

Analysis

- P_c set below equilibrium. This ensures affordability for low-income households.
- Quantity supplied is at Q_c . Consumer surplus could also increase if $P_1 \Delta P_c > CGB$.

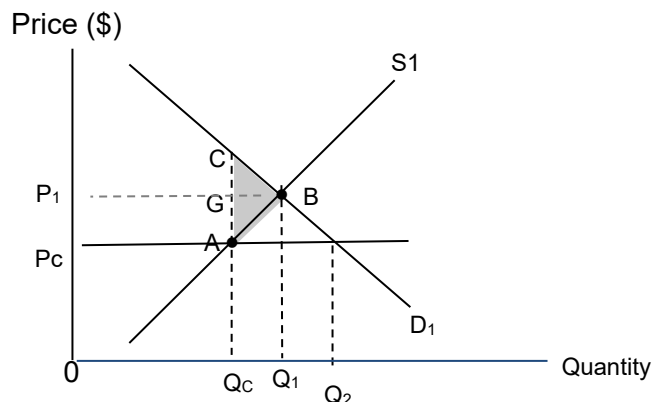


Figure 1: maximum price legislation

Antithesis: Singapore should not follow Norway's maximum price legislation

Shortages

- Reducing price will cause a shortage of Q2-Qc as quantity demand rises while quantity supplied falls.
- In the long run the shortage could worsen if suppliers leave the market due to lack of profitability. As such, the policy will be ineffective in achieving its intended goal of increasing overall consumption by making preschool education more affordable unless there is a concurrent increase in the number of preschools by the government.
- The operators will need to decide how to distribute limited places. There could be balloting/rationing or allocation based on the use of first-come first-served. Queuing for places or parent volunteerism could lead to a loss in productivity as they have to take time off from work.

Allocative inefficiency

- There is a deadweight loss of abc – society's welfare is not maximised
- Lowering the price could worsen the adverse selection lemons problem. As the price falls, high quality preschool operators leave the market. Only low-quality preschool operators will remain.
- Over time, this could result in allocative inefficiency due to a missing market for quality preschool education.

Black market price

- With only Qc pre school available, some parents may be willing to pay higher fees, they may be charged to the highest that they are willing to pay.
- This will defeat the purpose of setting maximum price to make pre school more affordable for low income families.

Evaluation:

1. Factors affecting the extent of shortage

- The extent to which the government can ramp up supply from direct provision. 'With the increase in MOE kindergartens, the ministry will have greater scale to influence the kindergarten sector.' (Ex. 1).
- The increase in supply would result in a lower shortage and reduce the costs of the maximum price

2. Desirability

- Based on the higher inequality/ Gini index in Singapore, it might be necessary to follow the example of Norway.
- In the long-run, productivity might be enhanced if more children have a strong foundation in pre-school education which helps them progress faster in education and attain better qualifications eventually. This would improve the overall SOL and economic performance in the long-run.

Hence in the long-run, it would be beneficial for Singapore to follow Norway's maximum price legislation provided there are accompanying measures to boost supply of preschool education.

Mark Scheme:

Knowledge, Application, Understanding, Analysis		
L1	▪ Smattering of points not directly linked to the question ▪ Mere listing of factors that lack depth of economic analysis and justification ▪ No reference to the economics framework – DD/SS f/w ▪ No reference made to case material	1 - 3
L2	▪ Provides a balance argument on the maximum price legislation – explains how the policy.	4 - 7
Evaluation		
E1	An unexplained judgement → An unexplained evaluative conclusion	1
E2	Evaluative assessment supported by relevant contextual application to Singapore and Norway. Consideration of factors influencing the costs and benefits of the maximum price and an overall summative judgement if the government should follow Norway's policy.	2 - 3

Examiners' Comments:

- Weak interpretation of the requirements of the question:
 - There were many scripts that proposed an alternative policy which was not a requirement of the question – please interpret the question carefully.
 - Some students also mistook this question as a market failure question and explained how the market failed in detail. This is not necessary or relevant.
- Weak depth of analysis - Some students simply stated that there will be a shortage without elaboration on the negatives of a shortage while others simply stated that the shortage will increase inequality or inequity without explaining why.
- Conceptual errors:
 - Some students argued that Singapore should not adopt price ceiling because there will be high government expenditure needed in subsidizing the producers. However, the price ceiling does not require subsidies to work – it is a mandatory price cap set through legislation.
 - Area of consumer surplus was identified incorrectly – while price falls, so will quantity supplied and thus final quantity consumed.

Paper 9570/02 Paper 2
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1 In 2022, the United States experienced a higher inflation rate than Singapore. To achieve price stability, the Monetary Authority of Singapore (MAS) aims for a gradual and modest appreciation of the Singapore dollar.

(a) Explain how the above difference in inflation rates will impact the value of the Singapore dollar, and how the MAS may intervene to manage the value of the Singapore dollar. [10]

(b) Discuss the internal and external impacts of an appreciation of the Singapore dollar on the Singapore economy. [15]

Part (a)

Introduction

- Inflation defined as the sustained rise in general price level of the basket of goods and services consumed by households in an economy.
 - o The above-mentioned preamble states that the United States (USA) experiences a higher rate of inflation relative to Singapore (SG).
 - o This causes changes in demand and supply of the Singapore dollar (SGD) due to changes in demand for exports out of Singapore bound for the USA and imports bound for Singapore out of the USA.
- The Monetary Authority of Singapore (MAS) will intervene in the foreign exchange market to manage the value of SGD against the USD, in its managed-float system.
 - o MAS sets an upper and lower band between which the foreign exchange rate of SGD against a basket of currencies is permitted to fluctuate.

Body

R1: Explain how relatively higher inflation rate in the US will affect the Singapore dollar → Appreciation of SGD

- Rise in demand for Singapore's exports → Fall in DD for S\$ in the FX market
 - o Singapore's exports range from machinery to financial services.
 - o As US has a relatively higher inflation rate than Singapore, this causes Singapore exports to be relatively less expensive than domestically produced goods in the US.
 - US consumers will switch over from domestically produced substitute goods and services to imports from Singapore → this will increase the demand for SG's exports → quantity of exports sold rises
 - As Singapore's exports become more competitive, there will be an increase in demand for it globally → quantity of exports sold rises.
 - o As quantity of export increases, SG's export revenue increases.
 - o This leads to the rise in demand for the SGD from DD0 to DD1 in the foreign exchange market to purchase the exports from SG.

- Fall in demand for imports from the US → Fall in SS of S\$ in the FX market
 - Imports out of USA bound for SG experience a higher rate of increase in price relative to SG's domestic substitutes.
 - These imports range from aviation equipment to pharmaceuticals.
 - Since these imports from the US are now relatively more expensive compared to SG's domestic substitutes, there will be a fall in quantity demanded for these imports - SG will switch away from imports for local substitutes and/or consume less of the good.
 - Hence, there is a fall in import expenditure for SG.
 - This leads to a fall in the supply of SGD from SS0 to SS1 into the foreign exchange market as buyers of US imports sell less SGD in exchange for the USD to pay for these imports.

Analysis (Price Adjustment Process)

- The combined effect of the rise in DD for the SGD and fall in SS of the SGD will lead to the appreciation of the SGD against the USD. This is because at initial exchange rate, there is a shortage since quantity demanded (Q_d) outweighs quantity supplied (Q_s), there is an upwards pressure on the exchange rate until the shortage is eliminated, overall SGD appreciates against the USD.

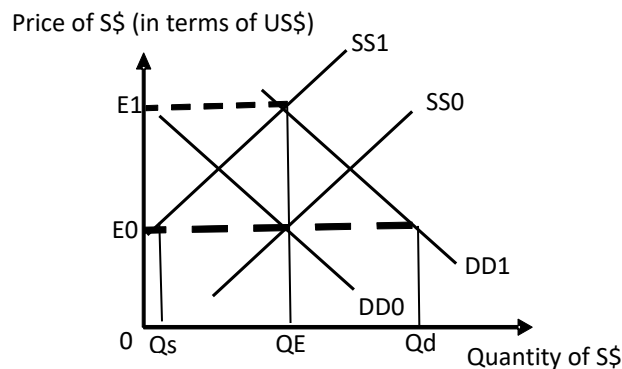


Figure 1: Appreciation of SGD against USD

R2: Explain MAS intervention in the FX market

- MAS sets an upper (E_u) and lower band (E_l) between which the foreign exchange rate of SGD against a basket of currencies is permitted to fluctuate.
- Assuming that the appreciation of the SGD against the USD (as explained earlier) exceeds the upper band allowed by the MAS, MAS will intervene in the foreign exchange (FOREX) market by selling SGD in the FOREX market in exchange for the USD.
 - This causes the supply of SGD to rise and the surplus SGD causes a downward pressure on the SGD, which leads to the rise in qty dd for SGD and a fall in qty ss of the SGD.
 - The SGD equilibrates against the USD at a lower value (E_2), within the tolerable upper (E_u) and lower band (E_l).
 - "gradual appreciation of the S\$"

Price of S\$ (in terms of US\$)

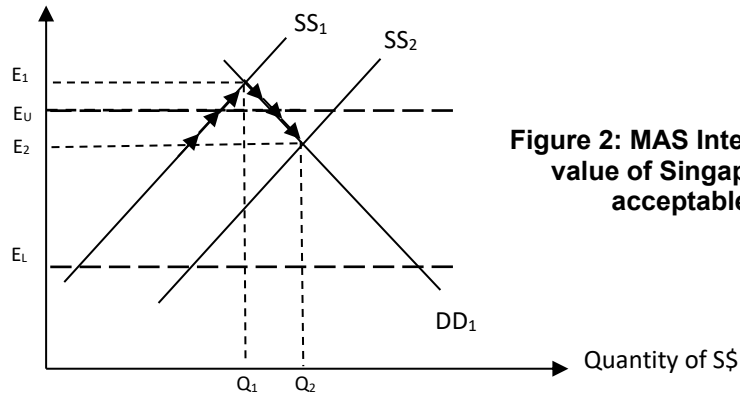


Figure 2: MAS Intervention to maintain the value of Singapore Dollar within the acceptable band (E_U to E_L)

Mark Scheme:

Mark Scheme: Knowledge, Application, Understanding, Analysis		
L1	▪ Lack application of relevant economic framework and context ▪ Critical errors in analysis ▪ Significant conceptual gaps in explanation	1 - 4
L2	▪ Some economic analysis for both requirements (R1 and R2) but with gaps or lapses in explanations ▪ Some application of context and use of examples ▪ Lacking in full scope of analysis	5 - 7
L3	A well-developed answer that demonstrates: ▪ Rigorous analysis for BOTH requirements ▪ Clear analysis with diagram(s) especially giving clarity to MAS intervention in the foreign exchange market	8-10

Examiners' Comments:

- Students were generally clear on the expectations of this question and are aware of the 2 requirements.
- For R1: Most answers proceeded to explain why demand for Singapore's exports will rise, culminating in the appreciation of the SGD against the USD. There was brief explanation of the price mechanism working within the exchange rate market. There was good effort in the precision of nouns and pronouns that were important for clarity of understanding about the direction of trade – e.g. SG exports to the US, or imports from the US into SG.
- Fewer answers linked the value of X (i.e. total revenue from sale of exports) and M (i.e. total expenditure on imports) to the demand for and supply of SGD. Such answers merely stated that with lower inflation rates in SG, demand for X of SG rises and therefore, the value of SGD appreciates.

- *In addition, many did not explain and illustrate the fall in the supply of SGD that simultaneously occurs with the difference in relative inflation rate between the US and SG. With US exports bound for SG becoming relatively pricier, demand for imports purchased by Singapore will fall, **reducing import expenditure** and hence, reducing the supply of SGD in the foreign exchange market.*
- *Students should note that relative inflation rates will primarily impact the value of net exports. All other impacts are considered as secondary, for example, hot money flows or foreign direct investment flows.*
- *Some answers confused hot money flows with FDI flows. Many answers did not label the axes accurately – these were content with stating just ‘exchange rate’ or the ‘price of SGD’, instead of labelling the price of SGD in USD. Note that this is often going to petrify Cambridge markers.*
- *There were also some answers which analysed the exchange rate from the US perspective when the question is on the SGD.*
- *For R2: some students failed to recognise that MAS will set a band in which it will intervene through buying and selling of SGD to manage the ER in the FX market. The scripts lacked depth of analysis, and diagrams did not illustrate the band at which SGD is allowed to fluctuate.*
- *One common conceptual error that has been repeatedly made – MAS buys SGD to reduce the SS of SGD in the FX market. This is flawed. If MAS buys SGD, it affects DD and not SS.*

Part (b)

Introduction:

- The impacts of an appreciation of the Singapore Dollar (SGD) can be discussed with reference to internal and external macroeconomic goals such as:
- Healthy Balance of Trade (external goal – BOT/BOP)
- Price stability, low unemployment and economic growth (internal goals)

R1: Discuss how an appreciation of S\$ → External Impact

Thesis: Appreciation of S\$ → Negative external impact

- An appreciation of the SGD, could lead to negative external impact on the BOT in current account.
 - o As S\$ appreciates, price of exports in foreign currency such as USD rises → quantity demanded of these exports by foreign consumers will fall as these exports become pricier → the extent of fall in Q_x depends on the PED_x .
 - o As S\$ appreciates, the price of all imports purchased by Singapore consumers will fall in terms of SGD → quantity demanded for these imports will rise → the extent of rise in Q_m depends on the PED_m .
 - o If the Marshall-Lerner condition is fulfilled, i.e. the sum of price elasticities of demand for exports and imports exceed 1, ($PED_x + PED_m > 1$), the appreciation of S\$ → fall in net exports.
 - o As the value of net export fall → BOT worsens.
 - o The BOT will be less favourable.

Anti-thesis: Appreciation of S\$ → Positive external impact

- The appreciation of the SGD could lead to positive external impacts in the short-run on the BOT and BOP accounts.

- If the MLC is not fulfilled i.e. PED_x and or PED_m are extremely small in magnitude such that $PED_x + PED_m < 1$, when S\$ appreciates, net exports could rise → improvement in BOT. This could arise in the very short run when SG's and foreign economies are not responsive to price changes.
 - For example, in the short-run, with the existence of sales contracts between domestic producers and foreign producers, a mere appreciation of the SGD will not alter quantities sold by SG producers to foreign producers who have negotiated in contract, the purchase price of these goods or services in SGD. In addition, these foreign buyers of SG's exports may not have sufficient time to search for substitute sources of these goods and services, hence, they are unable to respond to higher prices of these goods. Quantity demanded of exports will fall less than proportionately.
 - Similarly, purchase of foreign imports by local producers are likely to be contractual in nature, with agreed prices in foreign currency, and independent of current exchange rates and the appreciation of the SGD. Quantities demanded for imports will rise less than proportionately.
- In the LR, if S\$ appreciation causes a fall in SG's inflation rate → if SG's X become more competitive → demand for X will rise → export revenue and hence net exports will rise → improvement in BOT.

R1 Evaluation

- In the SG context, BOT deterioration due to appreciation of the SGD is likely going to happen eventually, despite some short-run improvement.
- This is due to the high-value added nature of SG's exports, such as sophisticated aeronautical machinery, fintech software and high-end computers. These take up a large proportion of household or firm's income, hence $PED_x > 1$. So that even if PED_m was less than 1 and very small, the Marshall-Lerner condition would not apply → an appreciation of the SGD if sustained and significant, will be detrimental to the BOT position of Singapore with other economies.

R2: Discuss how an appreciation of S\$ → Internal Impact – EG, UE & Inflation

Thesis: Appreciation of S\$ → Negative impact on EG and UE

- As explained earlier → the appreciation of SGD → fall in net exports
 - Price of exports in f.c rise → Qd of X falls → X falls → extent depends on PED_x
 - Price of imports in SGD falls → Qd of M falls → M falls → extent depends on PED_m
- As the net export component of the AD falls → AD will fall.
- Analysis:
 - When AD falls, this will trigger the reverse multiplier process. Referring to Figure 3, AD1 shifts leftwards to AD1b.
 - The fall in AD leads to a surplus of goods and services produced. As producers experience unplanned rise in stocks, production is scaled down in the next period and there will be a fall in derived demand for fops including labour
 - Households will receive less wage income and this leads to a fall in induced consumption. This also induces the fall in savings, taxes and imports => this aforementioned fall in induced consumption will lead to another fall in AD => triggering many more rounds of fall in income and spending, as one man's fall in spending leads to another man's fall in income.

- the reverse multiplier process ends when the fall in X eventually leads to a cumulative fall in withdrawals. AD is eventually at AD_{1a}
- As the real national output contracts (from Y₁ to Y₄), cyclical unemployment rises as derived demand for labour inputs fall with lower levels of spending.

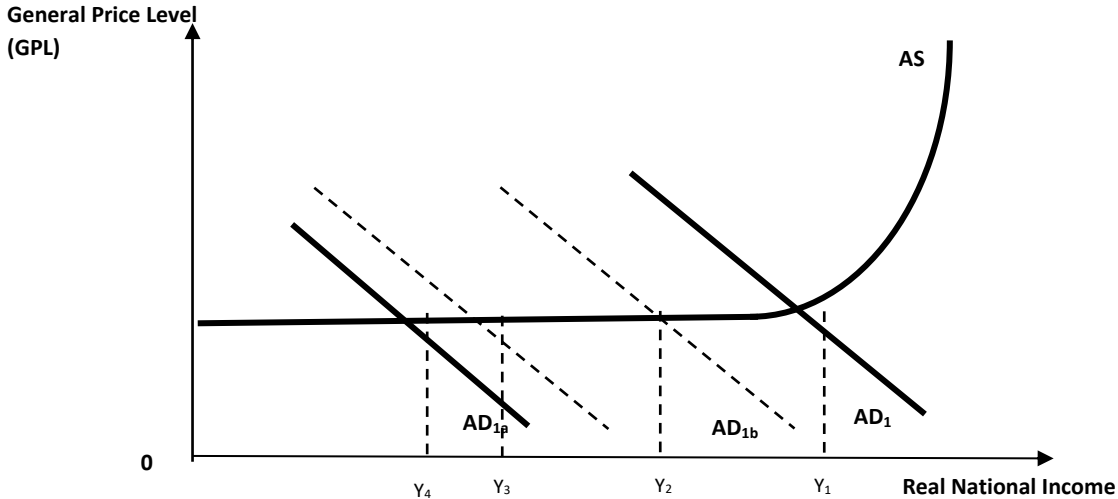


Figure 3: The reverse multiplier effect

Evaluation:

- AS rises due to lowering of cost of production from imported inputs denominated in foreign currency. This would lead to a rise in AS which will dampen the negative impact of fall in AD due to this appreciation. But as AS rise > fall in AD, there will be an overall fall in RNY.

Anti-thesis: appreciation of the SGD would lead to positive internal impacts in the SG economy → Price stability

1. Price stability is foremost achieved with an appreciation of the SGD

- Prices of final imports falls in SGD and becomes relatively cheaper
 - These would be goods such as food items, clothing and computers etc.
 - The Consumer Price Index falls and inflation rate is stable and anticipated → price stability.
- Prices of semi-finished goods and raw materials such as rare-earth metals, computer and aviation parts fall in SGD
 - The unit cost of production for producers across all industries that utilise these materials will fall → willingness and ability to supply goods and services at every general price level will rise → aggregate supply (AS) rises.
 - As AS rises, total spending < total output → the surplus will drive GPL down ($P_1 - P_2$), leading to moderated rate of inflation relative to other countries and hence price stability in the Singapore economy. There is a positive effect of fall in imported cost-push inflation.
- The stronger SGD also reduces excessive foreign demand for SG's exports especially when the economy is at full employment where productive capacity is unable to expand in the short run to meet such excessive rise in production of exports.
 - This means that there is also a fall in demand-pull inflation that stems from excessive foreign demand.

- The fall in AD from AD₁ to AD₂, would have led to the surplus of goods and services produced at P₂. This leads to a downward pressure in the price of goods and services (P₂ to P₃)

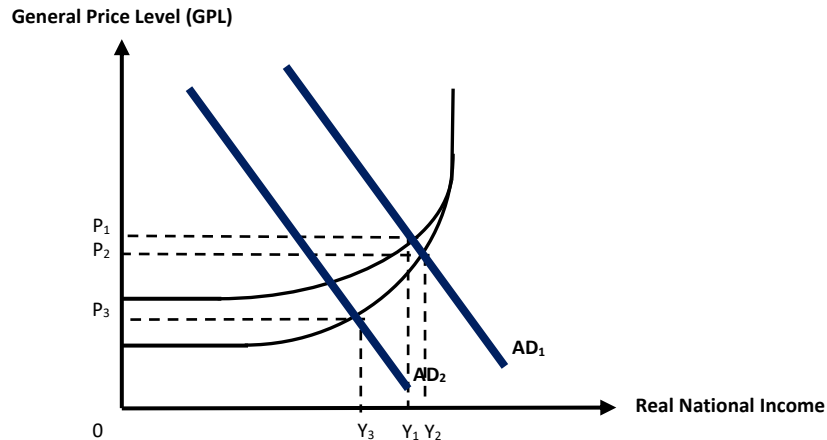


Figure 4: Price Stability achieved with the fall in AD and rise in AS

2. Long run EG can be achieved with an appreciation of S\$

- Such price stability in the Singapore economy would attract foreign. Local investors could also inject investment into the economy due to increased reliability in the predicted profitability on their investment. These further leads to capital accumulation and expansion of productivity in the long-run, steering the economy towards sustained growth.
- Lower inflation rates can also lead to rise in export competitiveness, causing an increase in exports.
- The rise in X and I will lead to economic growth in the longer run.

R2 Evaluation

- In the short-run, the negative impact of an appreciation of the SG economy would outweigh the positive.
 - While AS rises due to the fall in cost of inputs in SGD, import content of domestically produced goods and services in SG does not consist solely of import costs. Wages for example, would also determine cost of production of final goods and services exported by Singapore to trading partners. Import content is only a fraction of total cost of production.
 - Hence, an appreciation would directly and significantly lead to the fall in quantity demand for SG's exports due to a full extent of the rise in price of these exports in SGD.
 - While cost savings due to cheaper imports and the subsequent rise in AS, reduces the extent of the rise in the price of exports but this cost saving cannot fully reverse the impact of the rise in price of exports due to the appreciation of the SGD.
- The positive impact of price stability from SGD appreciation is likely to exceed the negative impacts in the long-run.
 - With price stability comes the positive outcome of appreciation that is gradual and modest, as there will be:
 - maintenance in purchasing power of households and standard of living.
 - rising investment both locally sourced and from abroad
 - Generating both actual and potential growth

- This growth is potentially non-inflationary in nature as PEG expands due to accumulation of physical capital from investment => this too would positively impact the BOT with more competitive exports for which the rate of rise in the price index of exports is far slower than the export substitutes produced by other economies. In addition, the capital and financial account is further credited with inflows of investment funds for the production of output.
- Fall in relevant unemployment rate for labour
- The short-run negative impact of an appreciation on the domestic economy is thus mitigated, by price stability in the SG economy in the long-run because sustained non-inflationary growth is achieved instead.

Conclusion & Overall Evaluation

- In conclusion, although there are overall negative impacts on both the internal and external macroeconomic goals of the Singapore economy, a gradual and modest approach to appreciating the SGD against its basket of currencies bodes well for the achievement of price stability and a healthy balance of trade and balance of payments in the long-run.

Mark Scheme:

Knowledge, Application, Understanding, Analysis		
L1	▪ No use of relevant economic framework ▪ Answer is mainly descriptive or mere listing of points ▪ Significant conceptual errors in explanation	1 - 4
L2	▪ Some application of relevant economic concepts and framework in analysis ▪ Some use of contextual examples ▪ Lacking in full scope of analysis Only R1 or R2 max 6 Discussion lacks balance for both R1 and R2 max 6	5 - 7
L3	A well-developed answer that demonstrates: ▪ Rigorous analysis for BOTH requirements ▪ Good application of contextual examples in both thesis and anti-thesis ▪ Good application of relevant economic framework	8 - 10
Evaluation		
E1	▪ Unsupported judgment ▪ Superficial conclusion/assertion	1 - 2
E2	▪ Substantiated judgment, recommendation supported by reasons/ economic analysis	3 - 4
E3	▪ Insightful and perceptive evaluation and recommendation well discussed and evaluated using economic analysis and good application to the context	5

	▪ At least 2 well explained insights covering both R1 and R2 and with a summative evaluation at the end	
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Examiners' Report

This part of the question is not well answered. The structure was weak with little organisation and thought aimed at how an appreciation would cause positive or negative impacts on internal macroeconomic objectives of growth and price stability.

R1: Internal effects of appreciation of SGD

- *Weaker answers did not distinguish between internal effects, i.e. effects on economic growth and employment, and price stability, and that of external effects on the balance of trade. Such answers linked C/I to internal effects and (X-M) to external effects. What the question wishes to test, is an understanding of how internal and external macroeconomic goals were going to be affected by an appreciation of the SGD.*
- *There were flawed positive links of C and I rising as a result of business optimism due to an appreciation, without any explanation as to why there was business optimism. These scripts totally ignored the impact of an appreciation of the SGD on (X-M) of the AD. This is the direct effect of changes in ER.*
- *In addition, the key idea of the fall in unit cost of production and the subsequent rise in AS which alleviates imported cost-push inflation and steers the economy towards long-run growth, were often missing in these answers.*
- *Many scripts did not integrate the AD and AS analysis to explain how price stability could be achieved with appreciation of SGD – as such, these answers lacked depth of analysis.*

The multiplier and its reverse multiplier process

- *The argument that a small multiplier value for Singapore due to its large propensities of withdrawals, would mean that the fall in X of the AD would not impact SG too negatively. Be reminded that X is a large proportion of the AD, as Singapore is very export driven. Hence, the initial fall in X would already impact AD very negatively, leading to extensive negative growth for the internal economy. Hence, the usage of the k value must be done with caution, preferably in the evaluation, where there is a comparison with the extent of negative impact of a fall in X, with other countries that have a large K.*
- *Many scripts were not specific with how the reverse multiplier process would end. They merely stated that the process would stop when the initial fall in AD = withdrawal. This is incorrect. The k process stops when the initial fall in AD = total fall in withdrawal.*

R2: External effects of an appreciation of SGD

The Marshall-Lerner condition and its application

- *There was in many scripts, incorrect linkage of the impact of appreciation to the BOT => we often saw separate analysis of the rise in price of exports in foreign currency culminating in the fall in total revenue from exports. And then the analysis of the fall in the price of imports in SGD culminating in the rise in total expenditure on imports into SG.
The Marshall –Lerner condition states that if the sum of the elasticities of PED_x and PED_m are greater than 1, then net export revenue of the BOT will worsen with an appreciation. It is not necessary to look at total revenue from exports and total expenditure on imports separately.*

- Some scripts made sudden linkages from a BOT analysis to the AD. That is not advisable in terms of providing a structured approach to R1 and R2 requirements. These scripts analysed how the decline in the net export revenue of the BOT meant also that $(X-M)$ of the AD would fall, without any insight that these components are not the same. The net export revenue of the BOT is nominally calculated with current prices, while the $(X-M)$ of the AD is calculated with historical base year prices. An effort needs to be put in, to mention how the quantities demanded of these exports and imports have changed, in order to transit into AD analysis, showing understanding that base year prices have not changed.
- For the AT, some merely mentioned that the MLC may not be met, hence concluding that the outcome of an appreciation of the SGD would lead to an improvement of the BOT. This was not explained nor discussed and hence, the AT would be a weak one.

- 2 (a) Explain why a small and open economy like Singapore may face macroeconomic challenges such as price instability and non-inclusive growth. [10]**
- (d) Discuss the most appropriate policy to achieve inclusive growth to improve the standard of living in Singapore. [15]**

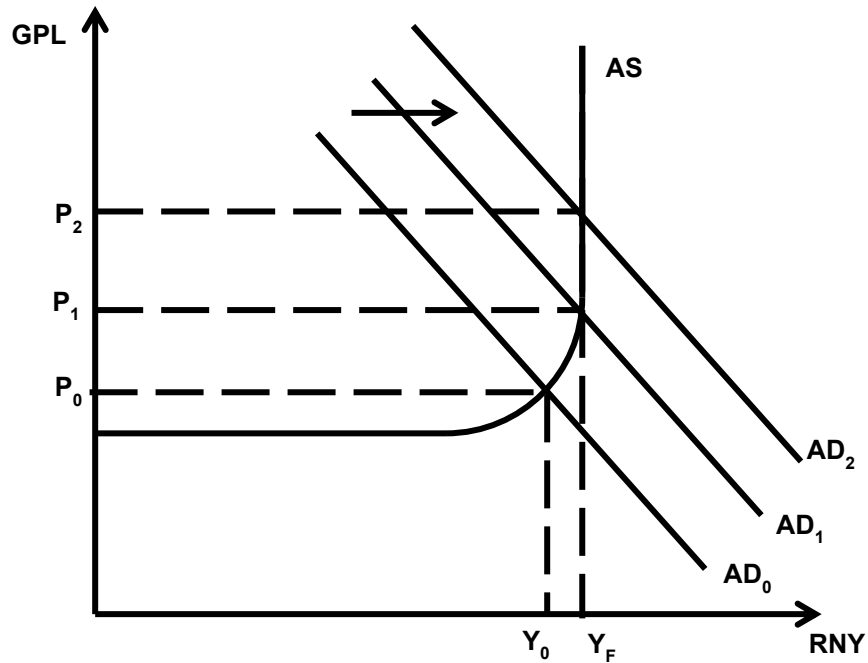
Part (a)

Introduction

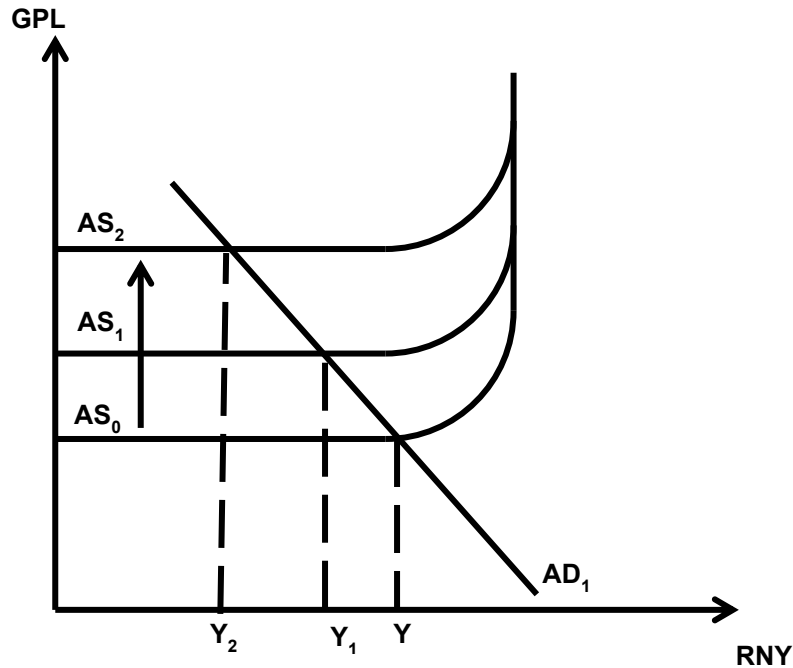
- Clarify a small and open economy like Singapore
 - o Small: Singapore has a small domestic sector (% of C in AD). It also has no natural resources and is dependent on imported factors of production like natural gas, earth metals, sand.
 - o Open: Unrestricted trade and capital flows. This means $X-M$ is a significant component of AD.

R1: SG may face macroeconomic challenges such as price instability

- Inflation defined as the sustained rise in general price level of goods and services over time.
- Long-term global economic growth leads to a continuous rise in SG's export demand. For example, many countries resumed their growth as their borders opened after COVID-19.
- As the national income of our major trading partners increased, so did the average income of foreign households. This increased their purchasing power.
- SG's exports are normal goods such as machinery and chemical products for which demand rises as incomes rise. This led to an increase in export revenue.
- Since export values are estimated to be around 200% of GDP. This triggers the significant rise in AD from AD0 to AD1 as a large proportion of AD comprises of X.
- If AD is at or near full employment level, there will be a lack of spare capacity.
 - o This creates supply bottlenecks as firms compete for scarce factors of production and have to resort to using FOPs that are less suitable for their production needs
 - o This leads to a rise in the price of factors of production
 - o To protect profit margins, firms will raise prices of goods and services, which increase the general price level.
 - o Hence, an increase in AD will result in an increase in the general price level from P0 to P1.
 - o Without any policy to stabilize prices, continuous rise in X and AD, coupled with rising inflationary expectations of households, demand-pull inflation occurs, where GPL rises in a sustained manner.



- Global supply-side shocks often lead to rise in global price of inputs bound for Singapore and such shortages bid up the price of these inputs worldwide ceteris paribus.
- Being a small economy with no natural resources, SG is very dependent on imported factors of production
- Price of these imported inputs rise and there are no domestic substitutes within SG for them.
- This raises the unit cost of production for many industries.
- As the cost of production rises, firms will face a decrease in their profit margins,
 - Hence, they are only willing and able to produce the same output at a higher price, and the AS curve shifts up from AS0 to AS1
 - As total spending exceeds total output, there would also be a shortage, causing households to compete for limited goods and services.
 - Thus, firms would raise prices, causing GPL increases from P0 to P1
 - firms would raise prices, causing GPL increases from P0 to P1

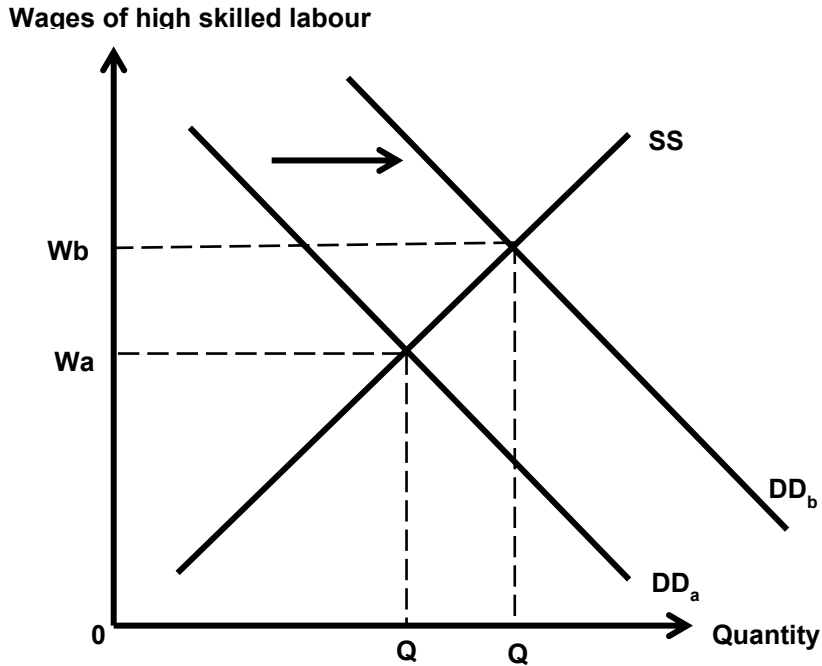


- As workers anticipate inflation, they negotiate for higher wages beyond the rise in productivity and unit cost of production rises further, causing AS to shift upward further and GPL to rise in a sustained manner.
- This causes cost push inflation

R2: SG may face macroeconomic challenges such as non-inclusive growth

Economic Restructuring

- Singapore finds itself having to continuously restructure in the face of global competitors (China, Malaysia, Japan and South Korea) that produce better quality and more price competitive exports. They compete with Singapore for the global market share of goods and services like electronics, machinery, financial services and renewable energy production.
- Hence, Singapore must continuously identify key areas of growth to develop its comparative advantage and value-add to its exports so that revenue from export sales can keep growing. Thus, emerging sectors experience rapid growth (such as finance and personalized health) and increased demand for their output, leading to an increased in demand for skilled labour (DDa to DDb)
- This leads to a shortage of skilled labour at the prevailing wage, leading to upward pressure on wages, leading to an increase in equilibrium wage from W_a to W_b



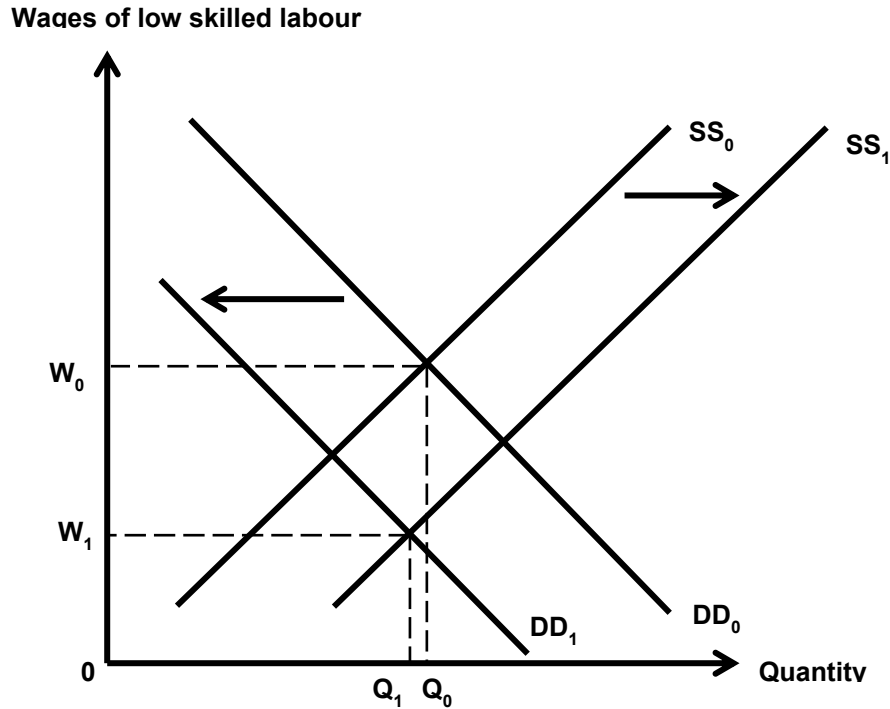
- Conversely, sunset industries like digital print media, oil and gas industries experience a decline in demand for their output and hence a fall in demand for labour involved (D₀ to D₁)

Technology

- Constant restructuring of our economy also involves bringing in new technologies. For example, FDI may introduce new technologies to enhance production processes
- When new technologies are brought in, some workers will have jobs entirely replaced by automation.
- Automation involves the substitution of labour with capital as a factor of production. As such firms may substitute labour with capital or choose to use less workers in their operations.
- This leads to a fall in demand for low skilled labour involved (D₀ to D₁)

Labour flows

- Our openness also applies to labour flows.
- For instance, immigration policies such as Singapore granting Work Permits attracts foreigners to work in Singapore, especially in sectors like landscaping, cleaning, retail and construction. This will increase the supply of low skilled labour (S₀ to S₁).
- This will lead to a surplus of labour at the prevailing wage, leading to downward pressure on wages. Wages for low skilled labour falls from W₀ to W₁.



- The increase in equilibrium wages for high skilled labour from W_a to W_b and the fall in equilibrium wages for low skilled labour from W_0 to W_1 leads to a widening income gap. Thus the Gini Coefficient will increase, causing growth to be uninclusive.

Mark Scheme:

Mark Scheme: Knowledge, Application, Understanding, Analysis		
L1	- Lack application of relevant economic framework and context - Critical errors in analysis - Significant conceptual gaps in explanation	1 - 4
L2	- Some economic analysis for both requirements (R1 and R2) but with gaps or lapses in explanations - Some application of context and use of examples - Lacking in full scope of analysis	5 - 7
L3	A well-developed answer that demonstrates: - Rigorous analysis for BOTH requirements - Good scope of coverage - Good application of contextual examples	8-10

Examiners' comments:

Comments on R1 (price instability)

- Many students did not explain why GPL increased, but merely stated that it did. These answers would not score higher than a 'C' for R1.
 - (X) As the cost of production rises, the AS curve shifts upward from AS_1 to AS_2 . Thus, GPL rises from P_1 to P_2 leading to cost push inflation.

- (✓) As the cost of production rises, firms will face a decrease in their profit margins. Hence, firms are only willing and able to produce the same output at a higher price. Thus, the AS curve shifts up from AS0 to AS1. As total spending exceeds total output, there would also be a shortage, causing households to compete for limited goods and services. Thus, firms would raise prices, causing GPL increases from P0 to P1, this causes cost push inflation.
- (✓) If workers expect prices to continue to increase, they will start asking for higher nominal wages to maintain their purchasing power and this will cause a further rise in the costs of production. This is reflected by a further upward shift of the AS curve from AS1 to AS2. As a result, the general price level will increase further from P1 to P2.
- Some students explained causes of inflation that were unrelated to how Singapore was a 'small and open' economy.
 - (X) As Singapore is an interest rate taker, a fall in interest rates in the US would cause a fall in interest rates in Singapore.
 - (X) If other countries appreciate their currency, the SGD would depreciate, causing inflation.
 - (X) The Singapore government spends heavily on infrastructure, increasing G. This is likely to lead to demand pull inflation.
 - (✓) Global supply-side shocks such as the Russian-Ukraine war often lead to rise in global price of inputs such as oil and natural gas. Being a small economy with no natural resources, SG is very dependent on imported factors of production
- When a question uses the term "price stability", especially for Singapore, it is more important to prioritize inflation, rather than deflation.

Comments on R2 (non-inclusive growth)

- Many scored poorly for R2. These responses did not use any economic concepts to explain why growth was non-inclusive. The correct approach uses labour demand and supply diagrams to explain widening income gaps.
 - (X) Singapore is an export driven economy, hence when the economy grows, the benefits only go to the rich who are involved in exports and imports, banking, finance and technology. Those workers like those who work in F&B, local industries or cleaning and construction do not get much benefit and their wages stagnate, thus, growth is uninclusive – lack of use of economic framework.
 - (X) The rich are able to afford better quality education, hire tuition teachers, and get ahead in life. Whereas the poor cannot, and start to lose out, having no skills to get high paying jobs. Over time, this would widen the income gap.
 - (✓) Constant restructuring of our economy also involves bringing in new technologies. For example, FDI may introduce new technologies to enhance production processes. When new technologies are brought in, some workers will have jobs entirely replaced by automation. This leads to a fall in demand for low skilled labour involved (D0 to D1).
- Others who scored poorly for R2 focused a large part of their answers on the multiplier process or potential growth, with only 1 – 2 lines on inclusiveness. If the question uses the term 'inclusive growth', the inequality/ Gini coefficient part of the answer cannot be simply ignored.

Part (b)

Introduction:

Introduction

- Standard of living (SOL) is defined as material and non-material aspects of well-being for an average resident in Singapore.

- Material standard of living refers to the amount of goods and services consumed by the average person in the economy in a given time period.
- Non-material standard of living refers to the qualitative aspects of welfare that include quality of life like health, education, security and pollution

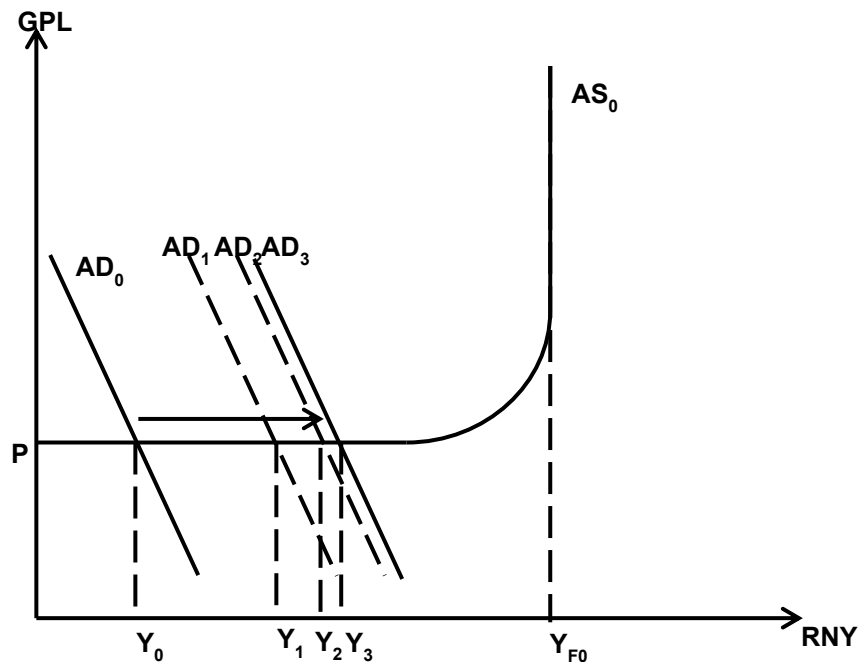
Body

R1: Fiscal Policy

- The Singapore government can implement targeted fiscal spending to increase the income of lower-income workers and increase their access to essential services.
- For example, Comcare interim assistance or other transfer payments can be dispensed to residents with lesser means, thereby reducing disparity in disposable income between the rich and the poor and hence, the Gini coefficient.
- This form of income redistribution boosts the disposable income of low-income workers, increasing their willingness and ability to spend more on necessities such as food and healthcare, contributing to a rise in consumption

The government can also increase spending on infrastructure as schools or clinics and subsidies for education and healthcare, to increase accessibility to lower income households.

- Since $AD = C + I + G + (X - M)$, the rise in C and G leads to a rise in AD .
 - There is a rundown on firms' inventories and they increase output in the next time period by hiring more factor inputs like labour and giving out more income.
 - By the multiplier principle which states one man's spending is another man's income which generates further spending, there are multiple rounds of induced consumption and increases in AD that get progressively smaller due to withdrawals such as savings, imports and taxes.
 - This process ends when the initial rise in AD equals cumulative withdrawals, leading to an overall multiplied rise in RNY , showing a rise in actual growth rates.



- Assuming the economic growth rates outpaces population growth rates, average income per capita rises, allowing a Singapore resident to consume more goods and services, thus raising material SOL.
- Furthermore, a resident can afford to purchase better quality essential services like healthcare or education to boost their health or knowledge, contributing to a rise in non-material SOL as well.

AT: Limitations of fiscal policy

- Such targeted FP are short run measures to reduce income inequality and such redistributive efforts tend to impose a large fiscal budget strain on the government. A high opportunity cost could be incurred since the funds used for transfer payments could have been utilised to develop new competitive areas such as AI development and integration, thus foregoing the benefits of a more productive workforce. These funds if spent on such emerging areas of comparative advantage have greater potential for sustained growth, enabling greater ability for redistribution of income and inclusive growth.
- The rise in actual growth rates may be limited by Singapore's small multiplier (k) value. Withdrawals level is high as Singapore has high MPM and MPS values. A high MPS is due to a lack of natural resources and heavy reliance on imported factor inputs as well as final products for economic activity. A high MPS is due to a culture of thrift and compulsory CPF savings. Altogether, at each round of the k process, less income is passed on due to high leakages, resulting in a smaller multiplied rise in RNY and limited actual growth. This limits the effectiveness of attaining sustained and hence inclusive growth to raise SOL.
- Not all types of transfer payments and vouchers are still able to restrict the types of expenditures made by individuals. Some cash grants are provided to medically ill individuals that can still be spent on goods that do not increase standard of living e.g. demerit goods like cigarettes.

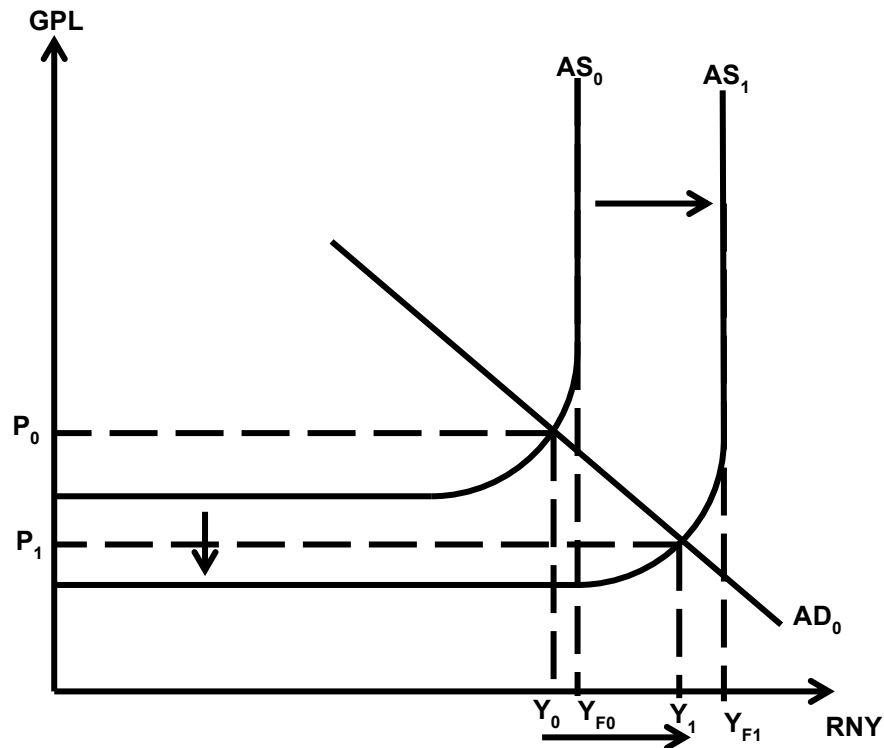
EV: Why targeted fiscal policy may not be the most appropriate

- To evaluate, in the short run, targeted fiscal policy is more effective than training policy since it provides immediate financial assistance to the low-income workers. This directly reduces income disparity, does not conflict with sustained growth yet helps them to continue to afford to pay for essentials such as food, transport and housing, improving their SOL.
- However, it does not solve the root cause of inequality. Higher paying jobs involving complex skill sets may not be available to low skilled workers. They could still be structurally unemployed and the root cause of their unemployment cannot be solved with such a measure

R2: Supply side policies e.g. labour training programmes

- To achieve inclusive growth, the Singapore government can implement training policy to specifically support low-income workers. For example, the Workfare Skills Support (WSS) scheme was introduced to incentivise low-income workers to apply for reskilling/upskilling courses by giving out monetary allowances to defray training costs and completion rewards when they successfully completed their training. An example could be a worker in the landscaping industry transiting to work with machineries in the manufacturing industry through reskilling.
- As the low-income workers become more productive and acquire new skills to join new industries, they command and earn higher wages as compared to before. This reduces the income gap between themselves and the high-income workers, causing a fall in the Gini coefficient and income inequality.

- Assuming the rise in productivity rates outweighs the rise in wage rates, this leads to a fall in unit COP, firms' profitability increases which causes them to be more willing and able to produce output, thus increasing AS and causing a downward shift.
- Additionally, the higher labour productivity means more output can be produced per worker, increasing the productive capacity and Y_f , leading to a rise in AS and a right shift, signalling a rise in potential growth.
- As AS shifts outwards from AS_0 to AS_1 , output becomes more than expenditure and a surplus arises. Firms pass on the lower costs to economic agents in the form of lower prices. The fall in GPL from P_0 to P_1 causes a rise in the level of AD due to the wealth, interest rate and international substitution effects, resulting in a rise in RNY from Y_0 to Y_1 and a rise in actual growth.



- Overall, there is sustained growth accompanied with a fall in income inequality. With more income, the low-income workers can spend more on essentials and wants, improving their material SOL.
- Additionally, learning new skills and transiting to new jobs increases their sense of competency and self-esteem, leading to improvement in non-material SOL.

AT: Limitations of supply side policy

- Some low-income workers may face long or irregular working hours such as shift work, thus without sufficient employer support like finding replacement workers during their training days, it becomes difficult for them to attend the training courses on their own, resulting in a low take-up rate of the WSS scheme.
- Workers may be resistant to learning new skills if they have a fixed mindset or have become too comfortable working in their current job. Moreover, less educated or elderly workers who face more

challenges in learning new skills may deem the cost of learning to outweigh the prospect of higher future wages, thus choosing not to undergo such courses.

- Training policy also takes a long time to bear fruition since workers need ample time to learn the theory and practice sufficiently until it becomes a part of their new skillset. Thus, this is a long run policy that cannot reduce income inequality in the short run.

EV: Why training policy may be the most appropriate

- Training policy is more effective in the long run than targeted fiscal policy because training directly targets the root cause of rising income inequality which is a lack of relevant skills due to structural shifts in the economy. The displaced low-income workers need training to acquire new skills to become employable in other growing industries.
- Training subsidies are more fiscally sustainable than transfer payments, as they are time-limited and end once skills are upgraded. In contrast, transfers like WIS require ongoing funding as long as workers remain low-income, making skills funding a more cost-effective long-term approach to inclusive growth and raising SOL.

Conclusion

Examples of Summative/EV

- Overall, targeted fiscal policy can be appropriate but it is crucial that the government provide the optimal amount of transfer payment that does not discourage work effort or efforts of workers towards upwards occupational mobility (through retraining) by individuals due to the possible greater income effect of transfer payments. Individuals need to recognise the rapid pace of structural changes in the economy, largely driven by the acceleration of AI, and be proactive to receive training to reach out for more productive employment opportunities made available.
- Hence, supply side policy is more appropriate. It solves the root cause of income inequality, and would help low wage workers improve their SOL in a way that does not consistently depend on government support. To make this policy more accessible, courses can be conducted in multiple languages to ensure better skill take up and receptivity. Interim wage support can also be given so that loss of wages will not be a factor deterring low wage workers from participating in training.
- Thus, of the two policies, supply side policies are more appropriate.

Mark Scheme:

Knowledge, Application, Understanding, Analysis		
L1	▪ No use of relevant economic framework ▪ Answer is mainly descriptive or mere listing of points ▪ Significant conceptual errors in explanation	1 - 4
L2	▪ Some application of relevant economic concepts and framework in analysis ▪ Some use of contextual examples ▪ Lacking in full scope of analysis	5 - 7
L3	A well-developed answer that demonstrates: ▪ Rigorous analysis for BOTH requirements ▪ Good application of contextual examples	8 - 10

	▪ <i>Good application of relevant economic framework</i>	
Evaluation		
E1	▪ <i>Unsupported judgment</i> ▪ <i>Superficial conclusion/assertion</i>	1 – 2
E2	▪ <i>Substantiated judgment, recommendation supported by reasons/ economic analysis</i>	3 - 4
E3	▪ <i>Insightful and perceptive evaluation and recommendation well discussed and evaluated using economic analysis and good application to the context</i> ▪ <i>At least 2 well explained insights covering both R1 and R2 and with a summative evaluation at the end</i>	5

Examiners' comments:

- Some students chose to explain policies not suitable for inclusive growth. Even if well explained, these policies would yield little credit. Examples include
 - (X) Depreciating the exchange rate: This is wrong because it does not improve income inequality. Neither does Singapore depreciate the exchange rate unless during severe recessions.
 - (X) R&D: This is wrong because it does not improve income inequality. In fact, R&D might worsen inequality because it encourages firms to replace low skilled jobs with automation.
 - (X) Interest rates: Singapore cannot control interest rates.
- The best policies improved both growth and inclusiveness. Examples of these are:
 - (✓) Labour training programmes (e.g. SkillsFuture, Workfare Skills Support Scheme)
 - (✓) Fiscal policy (with transfer payments and G focused on providing subsidies and improving infrastructure for groups in need, e.g. hospital, schools, elderly friendly infrastructure)
 - (✓) Progressive wage model (a minimum wage coupled with skills training)
 - (✓) Progressive taxation coupled with transfer payments
- To score well, students needed to meet the following criteria:
 - Use AD/AS analysis to explain the increase in RNY
 - Explain how the policy improved inclusiveness
 - Explain how it would improve material and non-material SOL

Mid level responses missed out on one or more question requirements.
- When explaining the effects of a supply side policy, some students used an AD explanation, rather than an AS explanation. This was given little to no credit. When explaining the effects of a supply side policy, focus on the supply side effects.
 - (X) The Progressive Wage Model would increase the productivity and incomes of workers. This increase in income would cause an increase purchasing power and increase consumption. Given consumption is a component of AD, AD would rise.
 - (X) SkillsFuture represents a subsidy by the government for upgrading worker's skills. This constitutes government expenditure, G. Given G is a component of AD, AD would rise, kickstarting the multiplier.
 - (✓) For example, the Workfare Skills Support (WSS) scheme was introduced to incentivise low-income workers to apply for reskilling/upskilling courses. Assuming the rise in productivity rates outweighs the rise in wage rates, this leads to a fall in unit COP, firms' profitability increases which causes them to be more willing and able to produce output, thus increasing AS and causing a downward shift. Additionally, the higher labour productivity means more output can be produced per worker, increasing the productive capacity and Y_f , leading to a rise in AS and a right shift, signalling a rise in potential growth.

3 Global economies have been affected by China's economic slowdown and increased energy costs from the Russian-Ukraine conflict, raising stagflation concerns and prompting some countries to shift to green energy.

- (a) Explain how the above-mentioned events may impact aggregate demand and aggregate supply for different economies. [10]
- (b) Discuss whether demand-side or supply-side policy is more appropriate in addressing stagflation in a country. [15]

Part (a)

Introduction:

- Aggregate demand (AD) refers to the total level of spending for an economy, based on the amount of domestically produced goods and services which households, firms, government and foreigners desire to buy, at each general price level.
- Aggregate supply (AS) refers to the total value of output of goods & services that domestic firms as a whole produce and sell at each general price level.
- The above-mentioned events will result in different extents of change in AD and AS for different economies.

Body

R1: Different extent of impact on AD for different economies

- China has experienced an economic slowdown which means that real GDP growth rate is decreasing. Assuming that GDP growth rate has fallen to become negative, China's GDP has decreased. Assuming China's population remains constant, this implies that real GDP per capita has fallen. As a result, the average household income of Chinese residents has fallen. Hence, there is a fall in purchasing power where Chinese households are able and willing to buy less goods and services, causing C to fall. The fall in consumption in China includes imports from her trading partners.
- Consequently, there is a fall in demand for exports from China's trading partners, causing a fall in trade partners' export revenue and net exports in AD. Since $AD = C + I + G + (X-M)$, AD falls for China's trading partners.
- The initial fall in X results in a surplus and unplanned inventory investments. Firms will reduce production and hire fewer workers. This results in a fall in income received by households which reduces purchasing power, causing induced C to fall. As one party's spending is the income of another, this reduction in induced C causes a further reduction in the come of another group of workers in the economy causing AD to fall further. At each round of reduction of induced C, there is also reduction in leakages of savings, taxes and imports. The reverse multiplier stops when the initial fall in $X = \text{sum of reduction in savings, taxes and imports}$. A more than proportionate fall in AD would have resulted from the initial fall in X.

Explain different extent of fall in AD for China's trading partners (sufficient to explain any one point below well)

1. The extent to which a country's aggregate demand (AD) falls due to a slowdown in China depends on the nature of its economies. For small and open economies like Singapore with a small domestic

market due to small population, she is heavily reliant on trade for economic growth as her export revenue as a percentage of GDP is about 200%. In contrast, large and less open economies like the US which has a large domestic market and consumerist culture, is more reliant on C and I to spur economic growth, thus export revenue as a percentage of GDP is much smaller. Thus, a fall in AD arising from a fall in X to China is more significant for SG than USA.

2. The extent to which a country's aggregate demand (AD) falls due to a slowdown in China depends on how heavily it relies on China as a trading partner.
 - Countries with a higher proportion of exports going to China are likely to experience a more significant decline in export revenue and thus AD. For instance, around one-third of Australia's total exports — primarily iron ore, coal, and agricultural products — are destined for China due to relative physical proximity. In contrast, only a small share of Mexico's exports goes to China, with approximately 80% going to the United States instead. As such, a slowdown in China's economy is likely to have a much larger negative impact on Australia's AD than on Mexico's.
3. The extent of fall in AD for China's trading partners depends on the different values of income elasticity of demand (YED) for their key exports to China.
 - For example, Brazil's key exports to China mainly consists of iron ore, soybeans and crude oil. These are considered primary commodities and essential goods, thus demand is considered income inelastic. With a fall in Chinese's resident ability to buy Brazil's exports, this leads to a less than proportionate fall in demand, resulting in a smaller fall in export revenue, net exports and AD.
 - In contrast, Italy's key exports to China usually consists of luxury products such as luxury fashion apparels from Gucci & Prada, leather handbags and shoes plus high-end jewellery. With a similar fall in Chinese residents' ability to consume Italy's exports, there is a more than proportionate fall in demand, leading to a larger fall in export revenue, net exports and AD.

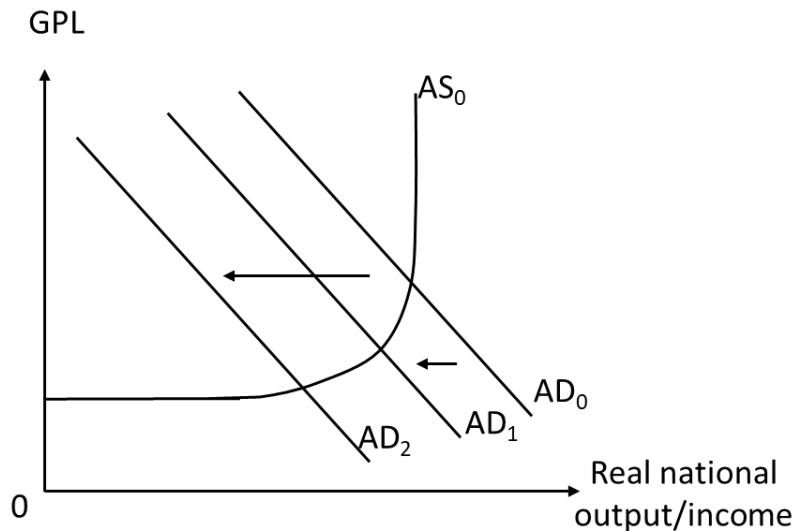


Figure 1: Different extent of fall in AD

R2: Different extent of impact on AS for different economies

- The Russian-Ukraine war has resulted in higher prices of crude oil and natural gas in the world market. Crude oil and natural gas are key factor inputs for industrial activities, hence energy importing countries such as Germany and UK will face higher cost of importing energy, leading to a rise in unit COP. As a result, firms experience a fall in profitability and become less willing and able to produce output, causing a fall in AS and an upward shift of AS curve.

Explain different extent of fall in AS in the short run and long run.

- The extent of fall in AS depends on how reliant the importing country is on crude oil and natural gas from Russia. For example, prior to the war, Germany imported a significant proportion of its energy needs from Russia with 55% of natural gas imports and 35% of crude oil imports from Russia. This is in contrast with Norway who is a major exporter of energy and do not rely heavily on imported crude oil or gas. Thus, Germany's unit COP is expected to rise by a larger extent and her AS falls by a larger extent from AS_0 to AS_1 as compared to Norway from AS_0 to AS_2 .
- Additionally, the extent of fall in AS also depends on whether the energy importing countries have invested in green energy and diversified away from traditional fossil fuels imports from Russia. Since the energy shock from the Russian-Ukraine War, Germany decided to heavily invest in green energy infrastructure such as producing wind and solar energy, thus reducing her reliance on imported energy. This may contrast with Hungary who also rely heavily on energy imports from Russia but may not have the fiscal resources to pursue such a costly investment in green energy. In the long run, Germany's rise in COP is mitigated, resulting in a smaller fall in AS compared to Hungary.

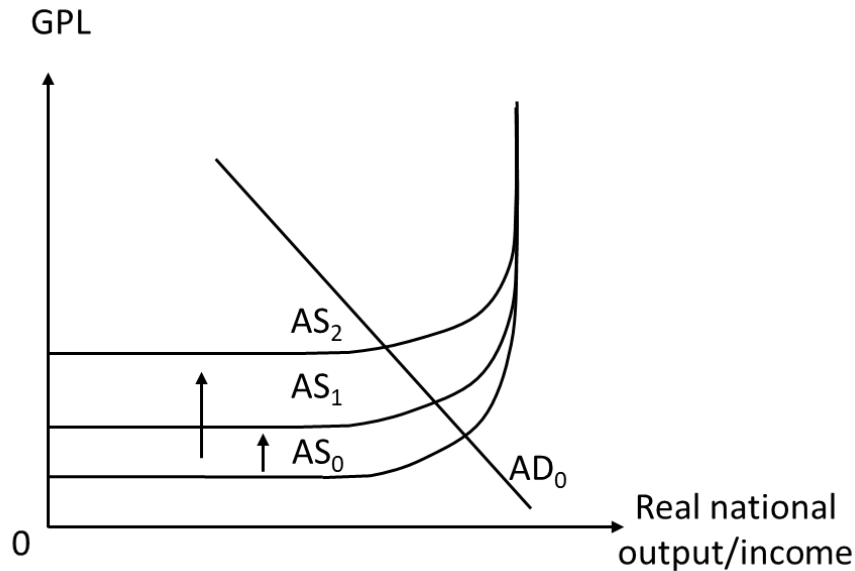


Figure 2: Different extent of fall in AS

Conclusion

Overall, the different impact on AD and AS is largely due to differences in the characteristics of various countries in terms of size and openness.

Mark Scheme:

Knowledge, Application, Understanding, Analysis		
L1	▪ Lack application of relevant economic framework and context ▪ Critical errors in analysis ▪ Significant conceptual gaps in explanation	1 - 4
L2	▪ Some economic analysis for both requirements (R1 and R2) but with gaps or lapses in explanations ▪ Some application of context and use of examples ▪ Lacking in full scope of analysis	5 - 7
L3	A well-developed answer that demonstrates: ▪ Rigorous analysis for BOTH requirements ▪ Good scope of coverage ▪ Good application of contextual examples	8-10

Examiners' Comments

- Overall, this question had responses of varying quality due to differences in quality of question interpretation and depth of analysis. Stronger responses clearly understood that the focus was on how the events led to different impacts on AD and AS for different economies while average responses tended to analyse heavily what happened to RNY and GPL with little to zero direct comparison between economies for AD and AS. Analyses on RNY and GPL are not directly addressing the question.
- Generally, the analysis on AD and AS effects were cursory. This is because there was irrelevant analysis on effects on RNY and inflation. Moreover, there was a tendency to omit details for impact on AS such as
 - Not explaining that imported energy is a key FOP for industrial activities
 - Not explaining that a higher COP leads to a fall in profitability for firms, hence they are less willing and able to produce output, thus a fall in AS
- Focus on primary effects before analysing secondary effects. For example, focus on the fall in GDP when the Chinese economy slows down, before going on to analyse secondary effects such as pessimism and falling GPL in China.
- Another issue with analysing secondary effects is the need to make additional assumptions. For example, some candidates thought that the slowdown in China meant that GPL fell in China, this is not definite because the slowdown could have been caused by fall in AS too, so whether GPL rose or fell is uncertain. On a similar note, the slowdown in China could have been caused by any AD component, so a fall in China's X is not certain as well.
- When comparing different impacts on AD and AS for different economies, there were 3 distinct approaches.
 - The best approach generally explained in terms of different nature/characteristics of the economies. However, some responses did not give sufficient details. Merely stating that a country is "small and open" and large and closed" is insufficient. Details elaborating why Singapore is export reliant through stating the value of X as a percentage of GDP and explaining the inadequacy of its small domestic market to drive economic growth are

required. Additionally, for different impact on AS, better details include why some cities can rely on green energy with earlier investment in R&D and how other countries could not due to limited land/resources.

- *A second approach was analysing effects on AD/AS with some extent of change in AD/AS for a particular economy due to certain characteristics but without directly comparing with another country. This approach is inferior to the first approach.*
- *Lastly, the third approach was using China, Russia or Ukraine as the economies affected which was somewhat acceptable but comparison with other countries was not evident usually.*
- *Candidates are reminded that excessive usage of unconventional shortforms like G&S, FOP, COP, UCOP etc are highly discouraged.*

Part (b)

Introduction

- Stagflation is defined as low/negative economic growth rates coupled with high inflation and rising unemployment.
- DD-side policy is likely only able to target either one out of the 2 parts of stagflation whereas SS-side policy can target both parts of stagflation.

Body

R1: DD-side policy more appropriate to boost economic growth rates and address stagflation (example expansionary MP)

Note to students: The DD-side policy can be expansionary FP or MP in this context.

Thesis: How expansionary MP works

- Assuming a country like Australia is currently facing stagflation, the central bank of Australia, i.e. the Reserve Bank of Australia (RBA), may choose to lower domestic interest rates.
- When interest rates fall, cost of borrowing is lowered, and households find it cheaper to borrow to finance big ticket items like cars and household appliances. Additionally, the returns to savings fall and the opportunity costs for consumption falls, thus prompting households to consume more.
- Moreover, the MEI Theory posits a negative relationship where a fall in interest rates results in an increase in I. There is a rise in the number of investment projects with MEI at least equals to the lower cost of borrowing (interest rates) when interest rates increase, causing a rise in I.
- Since $AD = C + I + G + (X-M)$, the combined rise in C and I leads to a rise in AD. There is a rundown on firms' inventories and they increase output in the next time period by hiring more factor inputs like labour and giving out more income. By the multiplier principle which states one man's spending is another man's income which generates further spending, there are multiple rounds of induced consumption and increases in AD that get progressively smaller due to withdrawals such as savings, imports and taxes.
- This process ends when the initial rise in AD equals cumulative withdrawals, leading to an overall multiplied rise in RNY, showing a rise in actual growth rates, thus addressing one issue present in stagflation. Cyclical unemployment also falls as more workers are hired to produce more goods and services.

Antithesis: Why expansionary MP may not be appropriate (Explain at least 1 to 2 well explained limitations)

- The key undesirable outcome of using expansionary MP is that it may worsen the existing high inflation rates. This is because the rise in AD may result in the economy being closer to the full employment level. This creates a shortage and upwards pressure on prices since economic agents are more willing to pay higher prices to obtain limited output. Overall, GPL rises further and this exacerbates the high inflation rates. This conflict with inflation rates when addressing low/negative economic growth rates make it difficult for governments to manage stagflation.
- The expansionary MP may have limited effect in increasing AD and RNY due to pessimistic expectations of households and firms. Households may expect their future incomes to decrease even more during a period of stagflation, thus even with lower interest rates, they choose to be more cautious of their expenditure and avoid borrowing to spend more on non-essentials like cars. Likewise, firms may predict that expected returns on investment projects fall due to stagflation and uncertainty, thus MEI shifts left and even with a fall in interest rates, I falls by a smaller extent. Overall, AD is likely to rise by a smaller extent and the rise in actual growth rates is limited.
- Another limitation is that an economy may be approaching liquidity trap. This happens when the initial interest rates are close to zero and an increase in money supply only leads to a minor fall in interest rates as it is difficult for nominal interest rates to fall below zero. Thus, this largely limits the effectiveness of expansionary MP in increasing C and I, resulting in a negligible rise in AD and actual growth rates.

R1/EV: Why DD-side policy is more appropriate than SS-side policy

- To evaluate, DD-side policy is more appropriate in the short run than SS-side policy to tackle stagflation. SS-side policy like R&D grants have limited to no effect on increasing growth rates and reducing inflation in the short run, thus it is crucial for a government to rely on DD-side policy to quickly address the undesirable growth rates. For example, if a country is facing a deep recession and moderate inflation, the government is likely to view expansionary DD-side policy as more appropriate than SS-side policy in the short run. This is because although inflation rates worsen in the short run, it is a necessary trade-off that a government may have to accept given the urgent need to address the large detrimental effects of a deep recession which causes significant hardships on families and creates pessimism which could further weaken AD.

R2: SS-side policy more appropriate to address stagflation

Note to students: You can either choose a market-oriented or interventionist SSP to address stagflation but for this context, R&D grants were chosen to tackle structural issues in energy by taking into consideration the preamble.

Thesis: Explain how R&D grants incentivise green energy investments

- The government could implement SSP which provides R&D grants to incentivise green energy investments. For example, Germany has embarked on its energy transition programme by giving grants to support R&D in renewable energy such as offshore wind turbine, solar energy and green hydrogen production. The grants ranges between 50 to 100% depending on the size of the organisation and project type.
- With such R&D fundings available, this lowers the cost of capital and increases the expected rate of returns (MEI). Firms are more willing and able to invest in green energy projects. Assuming the green projects are successful, energy costs will be lowered, resulting in lower per unit COP,

increasing firms' ability and willingness to produce due to higher profitability, resulting in the AS curve shifting downwards. With green energy as an alternative source of energy, the productive capacity of the economy also increases, causing AS curve to shift outwards. Overall, AS shifts downwards and outwards from AS_0 to AS_1 .

- With the rise in AS, output is more than expenditure at prevailing GPL which causes a surplus, this causes firms to reduce production which in turn reduces competition for FOPs, causing cost of production to fall. Firms then pass on the lower costs to economic agents in the form of lower prices and GPL falls from P_0 to P_1 . This mitigates the high inflation. Next, the fall in GPL causes a rise in the level of AD due to the wealth, interest rate and international substitution effects. For example, the international substitution effect describes how goods become more price competitive in the international markets (due to the fall in GPL), allowing the economy to sell more X. This is reflected by a downwards movement along AD and a corresponding rise in production which causes a rise in RNY from Y_0 to Y_1 . Unemployment is also reduced as more workers are hired to produce more goods and services. Overall, the rise in AS addresses the problems of stagflation - high inflation, low actual growth and high employment, directly in the long run.

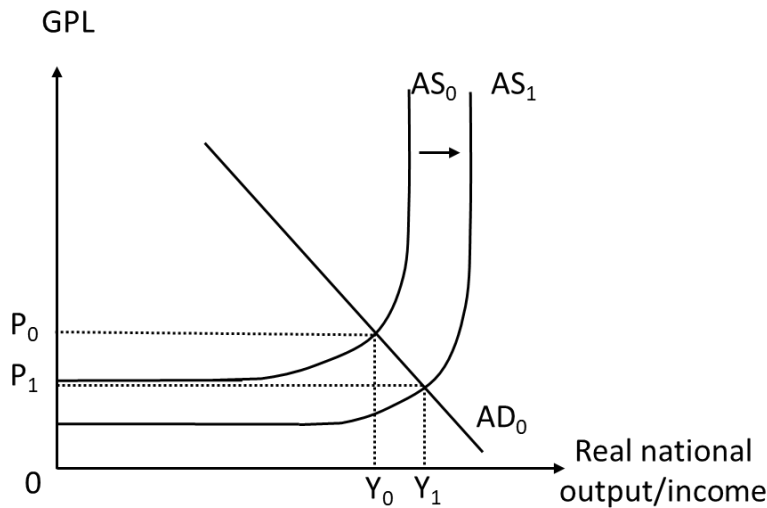


Figure 1: R&D grants addressing stagflation for a country

Antithesis: Why SS-side policy may not be appropriate (Explain at least 1 to 2 well explained limitations)

- While R&D grants may be effective, it is largely a long run policy that has little to no effect on addressing stagflation in the short run. This is because R&D projects require plenty of iterations and experimenting before yielding any positive significant outcomes.
- Furthermore, green energy R&D is highly experimental with unproven technologies, leading to inherent, high-risk investments. Success is not guaranteed due to the uncertainty of performance and scalability.
- Opportunity costs are incurred when giving out R&D grants. The large sums of money utilised for R&D grants could have been used to invest in better education, thus foregoing the benefits of a higher quality education system such as a more productive workforce in the future.

R2/EV: Why SS-side policy is more appropriate than DD-side policy

- Upon evaluation, SS-side policy like R&D grants is more effective than DD-side policy in the long run. This is because it tackles both aspects of stagflation by increasing growth rates and lowering inflation rates which DD-side policy inherently cannot.
- Furthermore, if the root cause of stagflation was high imported energy prices as evidenced in the preamble, R&D grants in green energy projects directly addresses this root cause. For example, Germany's transition to green energy makes their approach highly effective and sustainable in the long run since they can reduce their reliance on imported energy sources permanently, thus protecting them from volatility in the world energy markets.

Conclusion

Summative EV

- In conclusion, both DD-side and SS-side policies may be necessary in the short run and long run to address stagflation appropriately. Expansionary DD-side policies are important in the short run to prevent the economy from spiralling into a recession while SS-side policies are important to directly address the root cause of stagflation in the long run.
- A further insight is that judiciously chosen SS-side policies like R&D grants can help countries like Germany effectively address stagflation in the longer term and further promote sustainable growth as well.

Mark Scheme:

Knowledge, Application, Understanding, Analysis		
L1	▪ No use of relevant economic framework ▪ Answer is mainly descriptive or mere listing of points ▪ Significant conceptual errors in explanation	1 - 4
L2	▪ Some application of relevant economic concepts and framework in analysis ▪ Some use of contextual examples ▪ Lacking in full scope of analysis	5 - 7
L3	A well-developed answer that demonstrates: ▪ Rigorous analysis for BOTH requirements ▪ Good application of contextual examples ▪ Good application of relevant economic framework ❖ For A depth for R1 or R2, students should have both thesis and antithesis written.	8 - 10
Evaluation		
E1	▪ Unsupported judgment ▪ Superficial conclusion/assertion	1 – 2
E2	▪ Substantiated judgment, recommendation supported by reasons/ economic analysis	3 - 4
E3	▪ Insightful and perceptive evaluation and recommendation well discussed and evaluated using economic analysis and good application to the context	5

	▪ At least 2 well explained insights covering both R1 and R2 and with a summative evaluation at the end ❖ Since this is an explicit comparative question, students should write comparative evaluation to gain access to the full 5m. For students who did not write comparative EV at all, propose to cap at 2 or 3 m max.	
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Examiners' Comments:

- Stagflation is defined as high inflation with weak/negative actual growth rates and rising unemployment.
- Some responses defined stagflation as stagnant prices which was wrong.
- There was also another flawed understanding of stagflation whereby responses thought it meant an overheated economy nearing/at full employment experiencing DD-pull inflation. Such critical misunderstanding of stagflation affected the crafting of T, AT and EV.
- In general, stronger responses chose more appropriate DD-side and SS-side policies to manage stagflation with analytical depth and examples. In contrast, average responses tended to omit some details in their analysis. Lastly, weak responses were largely because they could not define stagflation precisely, leading to weak/conceptually wrong analysis thereafter.
- Most responses suggested using expansionary DD-side policy with SSP while a minority suggested contractionary DD-side policy with SSP. While both approaches are ok, the latter approach requires a more detailed analysis of how a rise in AS leads to a rise in RNY/GDP. Unfortunately, this was often reduced to a mere statement by stating the change from the diagram. The rise in RNY/GDP could be explained by saying how a fall in GPL brings about the wealth, interest rate and/or international trade substitution effects, hence a movement along AD and a rise in RNY/GDP.
- For the discussion of SSP, some suggested measures such as de-regulation and privatisation without considering appropriateness in the given context.
- For a question asking about DD-management versus SSP, it is important to note that discussion of DD-side policies are primarily focused on effects of changing AD whereas SS-side policies are primarily focused on increasing AS. You should not be analysing the supply side effects of DD-management policies. The same goes for SSP. Otherwise, you are not addressing this question which calls for a comparison of DD-management policies and SSP.
- The SS-side effects for DD-side policies and DD-side effects for SS-side policies could be as evaluation by resourceful students, but it should not be part of thesis/antithesis for the reason explained in the previous bullet point.
- The following points are with regards to depth of analysis and choice of points.
 - It is important to have a summative statement at the end of the analysis of the policies to fully address the question. Many responses merely stated how expansionary DD-side policy led to a rise in RNY/GDP and/or how SSP led to rise in RNY/GDP and fall in GPL without finally linking to how the issue of stagflation has been addressed or partially addressed.
 - As a continuation of the above point, the adjustment processes for how GPL and RNY/GDP changed was largely omitted or explained partially or explained with some inaccuracy. It is important to explain the proper mechanism for these changes and not just state from the diagrams.

- *For the analysis of expansionary FP, some responses left out the discussion of personal income tax/corporate income tax while others left out government spending. Moreover, examples of rise or fall in G were often missing. It is important to explain the 2 tools of expansionary FP well for greater depth.*
- *For the antithesis of expansionary FP, the core issue should be how it worsens inflation. Quite often, this idea was recognised but not well developed. A strong analysis would include HOW the GPL rises when AD moves closer to the full employment level. This could be done either through the shortages of resources leading to increased competition for resources and thus higher prices needs to be charged OR through shortages as total expenditure exceeds total output leading to upward pressure on prices as economic agents are more willing to pay higher prices.*
- *Next, it is better to analyse 1 SSP well instead of analysing 2 or more SSP with cursory details. Quite a number of responses simply stated “SSP of skills upgrading and retraining causes AS to increase”. Policy details such as the role of the government in such a policy and detailed analysis of how skills upgrading causes AS to increase are missing.*
- *Similar to (a), candidates are reminded that excessive usage of unconventional shortforms like EFP, CFP, EMP, CMP, SSP, arrows to indicate rise/fall etc are highly discouraged.*

*****END*****

“The mind is not a vessel to be filled but a fire to be ignited.” ~ Plutarch