

- 5 In 2022, Singapore's economy was impacted by global events such as the ongoing supply chain disruptions caused by the Russia-Ukraine war, which led to increased energy prices and inflation. Additionally, the tightening of global monetary policies by major economies, including the Federal Reserve's interest rate hikes, put further pressure on Singapore's export-driven economy.
- (a) Explain how the above events led to adverse consequences on the Singapore's economy. [10]
- (b) Discuss the policies implemented by the Singapore government to mitigate the adverse consequences brought by the above global events. [15]

Suggested answer for (a)

R1: Explain the adverse impact of supply chain disruptions caused by the Russia-Ukraine war on the Singapore's economy.

The supply chain disruptions arising from the Russia-Ukraine war led to a rise in general price level (GPL) in Singapore. The two countries are major suppliers of key commodities such as oil and gas. The war disrupted their supply, causing prices of several commodities such as oil and gas to spike. Given that Singapore lacks natural resources and imports these commodities, which are key factor inputs in many production processes in the country, the rise in prices of the commodities would increase unit cost of production. Higher energy prices also drove up electricity and transport costs for firms.

Firms typically respond to the rising cost by passing on part of the increase to consumers in the form of higher prices and by cutting back on production. This translates to a fall in short run aggregate supply (AS) causing the AS curve to shift from AS_0 to AS_1 as illustrated in Figure 1. This results in a shortage that causes a rise in GPL from P_0 to P_1 . If this increase is sustained, cost-push inflation occurs. The fall in AS also leads to a fall in real national income (RNY) from Y_0 to Y_1 . As firms cut back on output, they also reduce the amount of labour hired and unemployment increases.

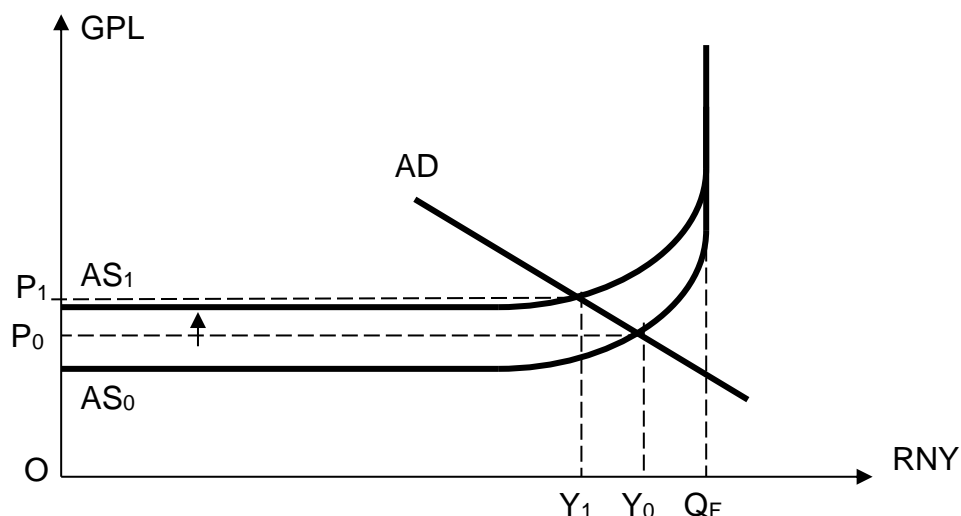


Figure 1: Fall in AS

R2: Explain the adverse impact of tightening of global monetary policies by major economies on the Singapore's economy.

The tightening of global monetary policies by major economies, including the Federal Reserve's interest rate hikes will have contractionary effects on Singapore's economy. The rise in interest rate in major economies such as US increases borrowing costs which will reduce the expected profitability of investments, so investment expenditure (I) will fall. Consumption expenditure (C) also falls due to higher borrowing costs as the loan repayment will be costlier for the consumers. The combination of fall in C & I will lead to a fall in AD. With a fall in AD, firms experiencing excess inventory will cut down production, resulted in fewer demand for factors of production such as labour, hence lesser factor income will be paid out and further reduce consumption. National income will fall by a multiple, leading to negative growth and higher cyclical unemployment. This is harmful to Singapore economy, as Singapore is dependent on exports for growth. Fall in national income of our trading partners will imply lesser purchasing power from them to import from Singapore. The demand for Singapore's export will fall, such that Singapore's export revenue and net exports will fall ceteris paribus. As a result, Singapore's AD will fall from AD_0 to AD_1 and this will lead to a fall in RNY from Y_0 to Y_1 as shown in Figure 2. As firms cut back on output, they also reduce the amount of labour hired and unemployment increases. The fall in net exports also worsen its balance of trade.

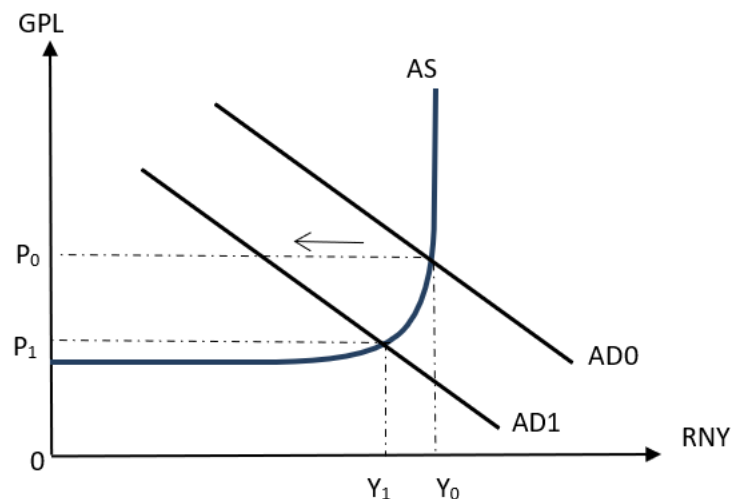


Figure 2: Fall in AD

Combined effects of a fall in AD and AS

As the intention of the major economies to raise interest rates was to slow down their pace of economic growth to reduce inflationary pressures, rather than cause negative growth, the purchasing power of our trading partners will still remain and hence their demand for Singapore's exports may not fall by a large extent. So, the fall in AS is likely to outweigh the fall in AD. Therefore, Singapore is likely to experience an overall rise in GPL from P_0 to P_1 and fall in RNY from Y_0 to Y_1 as shown in Figure 3.

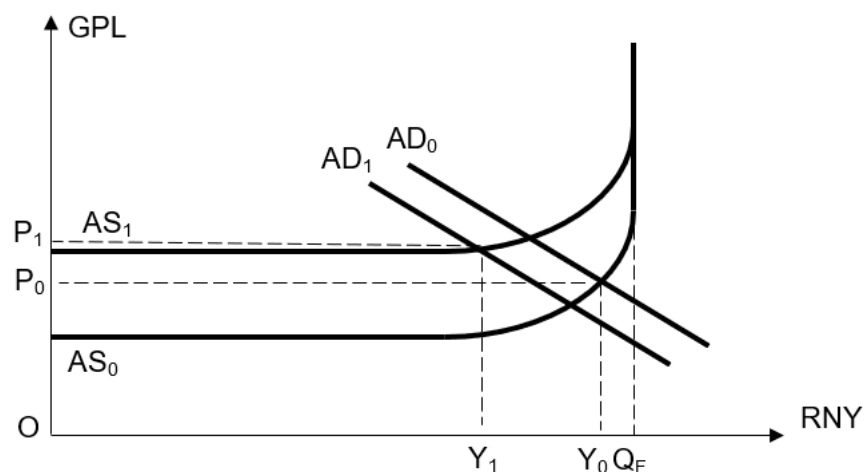


Figure 3: Fall in AS > Fall in AD

Level of Response Mark Scheme (LORMS)

Level	Descriptor	Mark
L3	<p>Analysis & Application</p> <p>For an analytical answer that addresses the question thoroughly with clear explanation well supported by tools of analysis, such as AD/AS analysis and diagram. There's clear and thorough explanation of how supply chain disruptions caused by the Russia-Ukraine war and tightening of global monetary policies by major economies led to adverse consequences on the Singapore's economy.</p> <p>There is good ability to organise ideas or discriminate between relevant and irrelevant factors. Answer is well-focused on question (e.g., the Singapore's economy) with the good use of economic concepts, theories or principles.</p> <p>Knowledge & Understanding</p> <p>For an answer that demonstrates an accurate knowledge and understanding of economic concepts, theories related to question, e.g., AD/AS analysis.</p>	<p>[8 – 10]</p> <p>[A+A: 10] [A+C: 8-9]</p>
L2	<p>Analysis & Application</p> <p>For an under-developed answer that attempts to address the question and explain how supply chain disruptions caused by the Russia-Ukraine war and tightening of global monetary policies by major economies led to adverse consequences on the Singapore's economy. Answers may be descriptive, lack an analytical approach (e.g., not supported with tools of analysis, incomplete use of graph) or is incompletely explained with gaps in analysis.</p> <p>[Or</p> <p>For a one-sided analytical answer that address only one of the two question requirements, i.e., explanation of the impact of one event only]</p>	<p>[5 – 7]</p> <p>[A+K: 7] [C+C: 6-7] [A+0: 6] [K+C: 5-6]</p>

	<p>For an answer that is supported with some application to the context of the question (e.g., the Singapore's economy). There is limited ability to organise ideas or discriminate between relevant and irrelevant materials. Answer has some relevance to the question context but is generic (e.g., pre-learned answer that is not focused on addressing the question specifically).</p> <p>Knowledge & Understanding For an answer that demonstrates largely accurate knowledge and understanding of economic concepts, theories related to question, e.g., AD/AS analysis (i.e., no major conceptual errors).</p>	
L1	<p>Knowledge & Understanding</p> <p>For an answer that shows limited knowledge and understanding of relevant economic concepts and theories (e.g., basic description or definitions). Few valid points made which are scant and inadequately explained. Answers are mostly irrelevant and inaccurate. Answer demonstrates that the meaning of question is not properly grasped or may contain basic errors of theory.</p>	<p>[1 – 4]</p> <p>[C+0: 4] [K+K: 2-4] [K+0: 1-2]</p>

Markers' comments

- Some students did not identify the two global events correctly e.g. explained the negative impact of inflation on Singapore's economy.
- Most students are able to explain the impact of supply-chain disruptions on Singapore's economy (e.g. imported cost-push inflation) correctly via a fall in SRAS.
- Some students misinterpreted tightening of global monetary policies as a depreciation of currency and wrongly linked to the impact on exports and imports.
- Tightening of global monetary policies refer to the increase in interest rates by major economies affecting the cost of borrowing instead of affecting the cost of production of goods and services.
- Answers that explained how the rise in global interest rates also led to Singapore, as an interest rate taker to raise her interest rate, linking to a fall in consumption and investment expenditure and hence AD are accepted.

- (b) Discuss the policies implemented by the Singapore government to mitigate the adverse consequences brought by the above global events. [15]

Suggested answer for (b)

Singapore government implemented a range of policies such as monetary policy centred on exchange rate and supply side policies to mitigate the adverse consequences brought by supply chain disruptions arising from the Russia-Ukraine war and the tightening of global monetary policies by major economies – in other words, the objective is to improve economic growth, increase employment, achieve price stability and improve balance of trade.

R1: Explain how Singapore government implemented monetary policy centred on exchange rate to mitigate the adverse effects brought by supply chain disruptions arising from the Russia-Ukraine war.

- The Singapore government allows for slow and modest appreciation of the domestic currency to curb inflationary pressures.
- When the SGD appreciates, imported raw materials become cheaper in SGD. Given that Singapore imports a lot of her raw materials as mentioned in (a), a stronger SGD helps to lower costs of production for firms → increase in SRAS → downward shift in SRAS from $SRAS_0$ to $SRAS_1$ → fall in GPL from P_0 to P_1 → fall in cost-push inflation
- At the same time, since SRAS increases, RNY increases from Y_0 to Y_1 . Firms' demand for labour increases and unemployment falls.

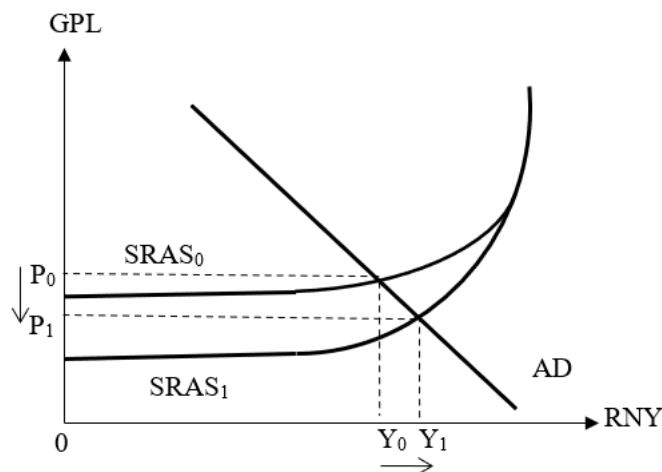


Figure 4: Increase in SRAS

Limitations

- A stronger SGD will mean that prices of exports will be more expensive in foreign currencies, leading to a fall in quantity of exports demanded. Prices of imports will be cheaper in SGD, leading to consumers switching to imported goods, increase the quantity demanded for imports. Given that Singapore mainly exports electronic products that have many close substitutes such as those from Korea and Taiwan, demand for its exports is relatively price elastic. Since Marshall-Lerner condition ($|PED_x + PED_m| > 1$) holds for Singapore, an appreciation of SGD will lead to a decrease in net exports. Hence AD falls, leading to fall in RNY and this will worsen economic growth and increase cyclical unemployment further. Balance of trade also worsens.

R2: Explain how Singapore government implemented supply-side policy to mitigate the adverse effects brought by supply chain disruptions arising from the Russia-Ukraine war and the tightening of global monetary policies by major economies.

- The Singapore government provides grants or subsidies to workers to upgrade their skills through Skill Future Credit and/or Workfare Training Support (WTS) scheme. With relevant training, workers' productivity levels may increase, allowing them to produce more output per unit labour. Assuming wages increase more slowly than productivity, unit cost of production will fall, and firms will be more willing and able to produce. This causes short run aggregate supply to increase, with horizontal and upward sloping portion of AS shifting downwards, which leads to a fall in GPL allowing the government to manage cost-push inflation and increase actual economic growth. / This will offset some of the rise in unit cost of production arising from the supply chain disruptions, mitigating the rise in GPL and fall in RNY.
- The increase in labour productivity also increases productive capacity of the economy. Long run aggregate supply increases, with vertical portion of AS shifting out and the maximum possible output increasing from Y_f to Y_f' as shown in Figure 5.
- The Singapore government provides more incentives to encourage innovation, e.g. Productivity & Innovation Credit (PIC) is a tax deduction given to firms who invest in Research & Development. Firms can engage in product innovation to improve the quality of their products exported to overseas markets. Assuming innovation is successful, this can increase the demand for Singapore's exports, increase its AD and RNY, improving its actual economic growth, unemployment and BOT. / This will reduce the extent of fall in Singapore's exports by trading partners who tightened their monetary policies, mitigating the fall in RNY, rise in cyclical unemployment and worsening of BOT.
- As shown in Figure 5, the rise in aggregate demand from AD_0 to AD_1 and aggregate supply from AS_0 to AS_1 leads to a rise in RNY from Y_0 to Y_1 and fall in general price level from P_0 to P_1 , so the Singapore economy would experience economic growth and price stability concurrently.

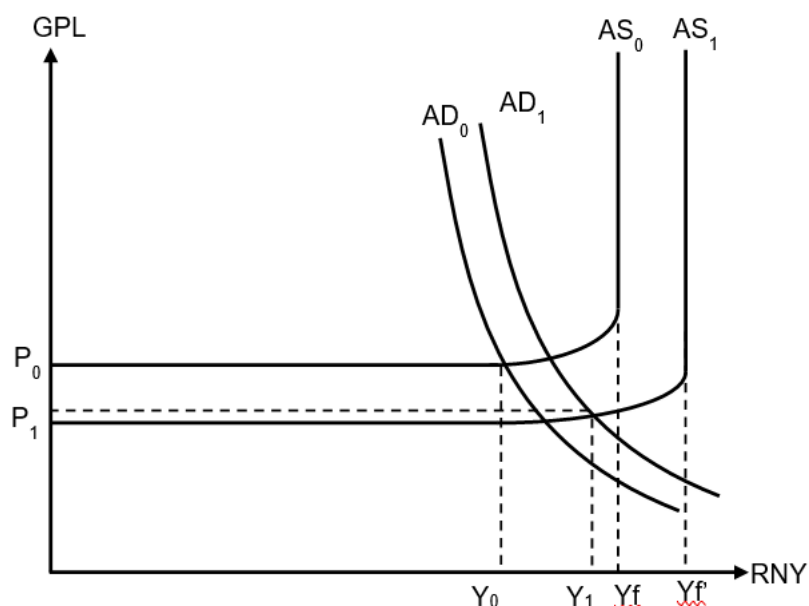


Figure 5: Increase in AD and AS

Limitations

- It can take a long time for workers to pick up the skills to improve their labour productivity, and hence the effectiveness of the policy would only be seen in the longer term.
- Additionally, workers might also be reluctant to go for skills upgrading, which would reduce the effectiveness of the policy to increase AS to mitigate the rise in GPL and fall in RNY.
- Furthermore, some of the more traditional firms may not have the expertise and willingness to adopt and invest in R&D. So, the policy may not be effective to increase net exports and hence AD as well as AS to improve economic growth and achieve price stability.

Conclusion

- Given that Singapore economy lacks natural resources and is highly reliant on imported raw materials, a slow and modest appreciation of SGD is a more appropriate policy to mitigate the rise in GPL/ imported cost-push inflation arising from supply-chain disruptions caused by the Russia-Ukraine war.
- The impact of an appreciation of SGD is also likely to take effect quickly, allowing Singapore's GPL to fall, addressing the inflation problem more immediately as compared to supply side policies which take a longer time to show effect.
- However, exchange rate appreciation could also reduce net exports and further worsen economic growth, unemployment and BOT caused by the tightening of global monetary policies by major economies.
- Therefore, the Singapore government needs to complement exchange rate appreciation with supply-side policies. As explained earlier, supply-side policies can help to compensate the negative effect of appreciation of SGD on export sector, ensuring that exports remain competitive in terms of price and non-price. This would enable Singapore to improve economic growth, increase employment, achieve price stability and improve balance of trade in the long term.

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L2	<p>Analysis & Application</p> <p>For an under-developed answer that attempts to address the question and explain how at least two policies work to mitigate the adverse effects brought by supply chain disruptions arising from the Russia-Ukraine war and the tightening of global monetary policies by major economies as well as the strengths and/or limitations of policies. Answers may be descriptive, lack an analytical approach (e.g., not supported with tools of analysis, incomplete use of graph) or is incompletely explained with gaps in analysis.</p> <p>[Or</p> <p>For a one-sided analytical answer that address only one of the two question requirements, i.e., explanation of one policy only]</p> <p>For an answer that is supported with some application to the context of the question (e.g., the Singapore economy). There is limited ability to organise ideas or discriminate between relevant and irrelevant materials. Answer has some relevance to the question context but is generic (e.g., pre-learnt answer that is not focused on addressing the question specifically).</p> <p>Knowledge & Understanding</p> <p>For an answer that demonstrates largely accurate knowledge and understanding of economic concepts, theories related to question, e.g., AD/AS analysis (i.e., no major conceptual errors).</p>	<p>[5 – 7]</p> <p>[A+K: 7] [C+C: 6-7] [A+0: 6] [K+C: 5-6]</p>
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Evaluation		
E3	Well-explained evaluative judgements about 2 requirements + a summative conclusion.	5
E2	Well-explained evaluative judgements about 2 requirements. OR A well-explained evaluative judgement about 1 requirement + an evaluative statement for the second + a summative conclusion.	4
	A well-explained evaluative judgement about 1 requirement + an evaluative statement for the second.	3
E1	A well-explained evaluative judgement about 1 requirement. OR evaluative statements for 2 requirements.	2
	An evaluative statement for 1 requirement.	1
E0	No attempt at evaluation.	0

Markers' comments:

- Most students were able to explain at least two policies – how they work to mitigate the adverse effects of the global events on Singapore's economy and their limitations but with varying quality of responses.
- Stronger responses provided developed explanation supported with the use of AD/AS tool of analysis and diagrams and were well-contextualized to addressing the adverse effects of the two global events on Singapore's economy. Weaker responses tend to be descriptive without the use of economic tool of analysis.
- Most responses are under-developed and merely regurgitated the theoretical content without explaining how the policies can address the adverse effects of the two global events on Singapore's economy.