Suggested answer for 2023 A-Level Paper 2 Question 4

The exchange rate is a key policy tool in managing the economy of Singapore.

(a) Explain how an appreciation of the exchange rate might affect aggregate demand and aggregate supply in an economy. [10]

(b) Discuss whether management of the exchange rate is the most appropriate way of controlling inflation in Singapore. [15]

Part (a) - Question Analysis

<table>
<tr><td rowspan="4">Approach</td><td>Command Word</td><td>Explain how</td></tr>
<tr><td>Question Type</td><td>Cause and effect</td></tr>
<tr><td>Start point</td><td>Appreciation of the exchange rate</td></tr>
<tr><td>End Point</td><td>Changes in AD and AS</td></tr>
<tr><td rowspan="2">Content and Context</td><td>Content</td><td>• Components of AD=C+I+G+(X-M)
• COP affecting SRAS
• Technology, quantity and quality of resources affecting LRAS</td></tr>
<tr><td>Context</td><td>None</td></tr>
</table>

Introduction

An appreciation of the exchange rate occurs when the value of a country's currency increases relative to other currencies. This has significant implications for both aggregate demand (AD) and aggregate supply (AS) in an economy.

R1: Appreciation of exchange rate will lead to an overall fall in AD

- When the exchange rate appreciates, the prices of domestically produced goods and services increase for foreign buyers. Consequently, exports become more expensive and less price competitive, while imports become cheaper as foreign goods and services are now relatively less expensive.

- For instance, the gradual modest appreciation of the Singapore dollar (SGD) made Singaporean goods and services more expensive for foreign buyers. As a result, exports became less price competitive. Assuming demand is relatively price elastic for Singapore's exports (|PEDx|>1), for example, Singapore's electronics exports, such as headphones produced by Creative Technology, will experience a more than proportionate fall in quantity demanded as there are many other headphones substitutes available from other countries, resulting in lower export revenue for Singapore.

- Meanwhile, the stronger Singapore dollar made imports cheaper. As Singapore lacks natural resources, our demand for imported raw materials will likely be less than 1 (|PEDm|<1), suggesting a less than proportionate increase in the quantity demanded for imported foreign goods and services, reducing Singapore's import expenditure.

- Assuming Marshall-Lerner conditions hold, summation of |PEDx and PEDm|>1, appreciation of SGC will most likely lead to worsening of our balance of trade position. If the balance of trade becomes a deficit, it might eventually contribute to a fall in our net exports, ceteris paribus.

- Since net exports (export revenue minus import expenditure) are a component of aggregate demand, a decrease in export revenue combined with an increase in import expenditure will reduce net exports (X-M). This reduction will lead to a decrease in AD. The formula for AD is AD = C + I + G + (X - M), where C is consumption, I is investment, G is government spending, X is export revenue, and M is import expenditure. A fall in (X - M), ceteris paribus, will lead to reduction in AD from AD_0 to AD_1 as shown on Figure 1 below.

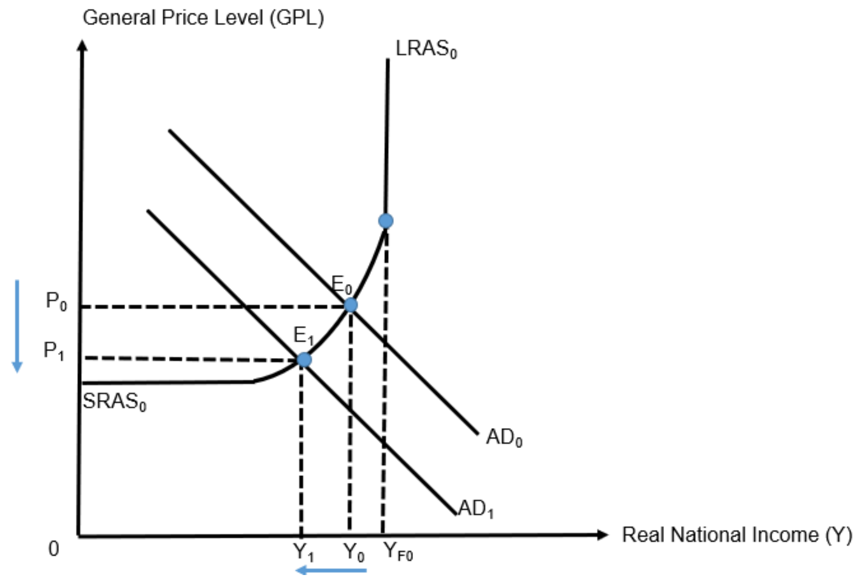


Figure 2: Appreciation leading to a decrease in AD

R2: Appreciation of exchange rate will lead to an increase in SRAS

- An appreciated currency makes imported raw materials, intermediate goods, and capital goods cheaper. This can reduce production costs for businesses that rely on imports, increasing short-run aggregate supply in the domestic country. For example, when the Singapore dollar (SGD) appreciates, most companies in Singapore that import raw materials and intermediate goods, such as electronics firms like Venture Corporation and pharmaceutical companies like Singapore Biotech, see a reduction in their costs. This leads to an increase in short-run aggregate supply (SRAS) from $SRAS_0$ to $SRAS_1$, as illustrated in Figure 2 below.

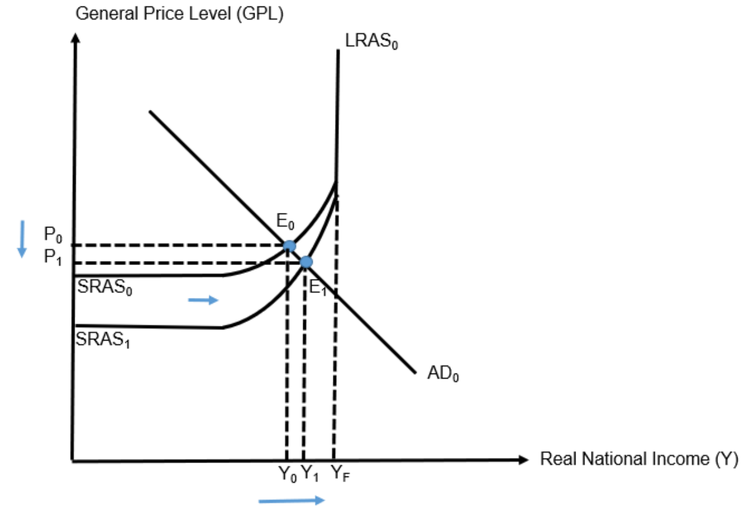


Figure 2: Appreciation leading to an increase in SRAS

Conclusion

An appreciation of the exchange rate can reduce aggregate demand through lower net exports while potentially increasing aggregate supply due to cheaper imported inputs. The overall impact on the economy depends on the relative magnitude of these changes and the state of economy.

Mark Scheme

Level	Knowledge, Understanding, Application, Analysis	Marks
L3	Full display of AO1, AO2 and AO3 skills: For an answer that shows well-developed explanation of how appreciation of exchange rate will affect AD and AS, supported with relevant examples.	8-10
L2	Uneven display of AO1, AO2 and AO3 skills: • For an answer that shows under-developed explanation lacks depth of analysis (i.e., limited effective use of relevant economic analysis • lacks scope (i.e only explain either AD or AS) • lacks relevant examples	5-7
L1	Limited display of AO1 and AO2 skills: • listing of points, unexplained statements, or descriptive response • many conceptual errors • irrelevant response • smattering of points	1-4

Part (b) - Question Analysis

Approach	Command Word	Discuss whether
	Question Type	Policies
	Start point	Appreciation and SS-side policies
	End Point	Controlling demand-pull and cost-push inflation
Content and Context	Content	ADAS Analysis
	Context	Singapore

Introduction

Singapore is a small, open economy highly dependent on international trade, with the Monetary Authority of Singapore (MAS) using exchange rate policy as a key tool to manage economic stability.

R1: Appropriate for SG to adopt Gradual Modest Appreciation to control demand-pull inflation and cost-push inflation

- In 2015, the MAS maintained a modest appreciation policy for the Singapore dollar to manage inflation. A notable example is our services sector such as food, beverages and retail, which constitute 70% of Singapore GDP. The slightly more expensive services will cause a more than proportionate fall in quantity demanded to foreigners and a decrease in Singapore's export revenue (X). Assuming Marshall-Lerner Condition holds where the summation of |PEDx and PEDm| is >1 as explained in (a), appreciation will decrease SG's net exports (X - M), shifting AD to the left from AD_0 to AD_1 to AD_2. This shift significantly reduced inflationary pressures from P_0 to P_1 to P_2, especially given Singapore is most likely operating near full employment at E_0, as shown in Figure 3 below.

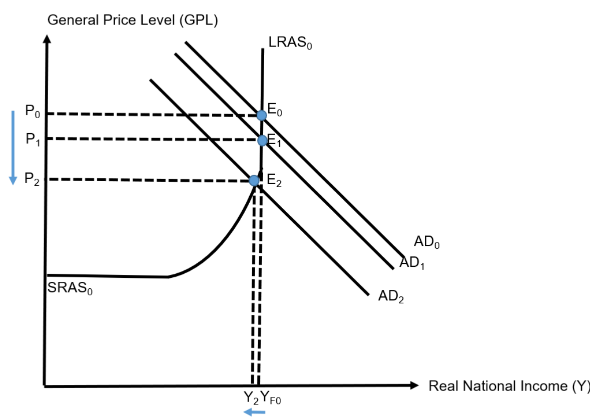


Figure 3: Appreciation to reduce demand-pull inflation in Singapore

As explained in (a), a gradual modest appreciation also helps keep imported resources competitively priced, leading to lower unit costs of production across most sectors in Singapore. One of the most critical imports for Singapore is oil and petroleum products.

As an island nation with limited natural resources, Singapore is highly dependent on these imports to fuel its industries, transportation, and households. The lower domestic price of imported fuel will reduce unit production costs and translates to higher profitability for firms in Singapore; which will increase short-run aggregate supply ($SRAS_0$ to $SRAS_1$) across all price levels in the economy, resulting in a decrease in the general price level from P_0 to P_1, as shown in Figure 2 above, effectively cushioning against cost-push inflation caused by external oil supply shocks.

Intermediate EV#1: conflict of macroeconomic aim→ negative actual growth and higher demand-deficient unemployment

- However, persistent currency appreciation can harm export competitiveness, leading to slower economic growth and higher unemployment in export-oriented industries, especially given that services constitute 70% of Singapore's GDP. If the fall in (X-M) due to more expensive exported services in food, beverage, and retail is severe, it will decrease the demand for labor, causing significant unemployment, as shown in Figure 4 below

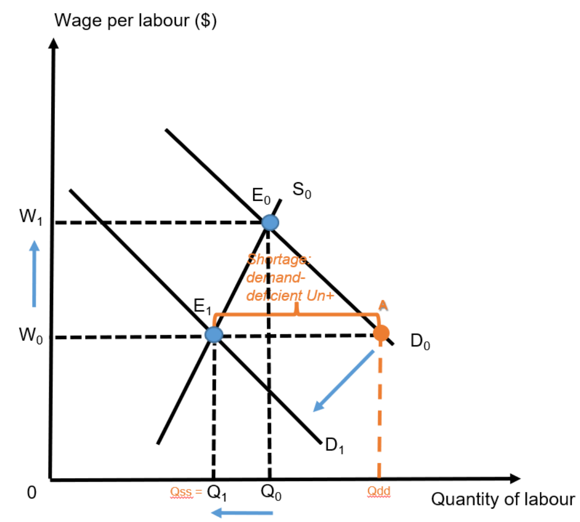


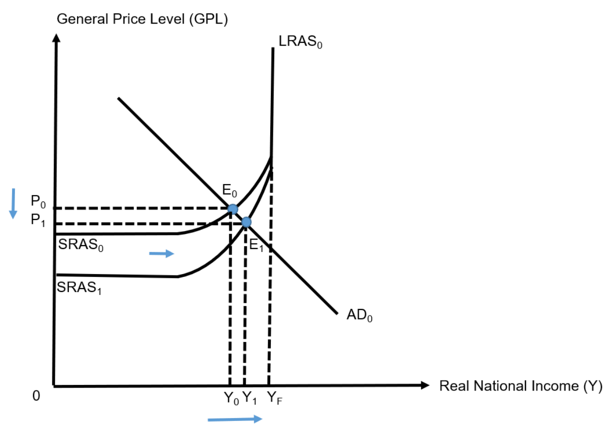
Figure 4: Higher demand-deficient unemployment due to appreciation of SGD

- Additionally, a strong currency can negatively impact the tourism sector, a major contributor to Singapore's growth. As the Singapore dollar appreciates, it becomes more expensive for foreign tourists to visit, reducing tourist arrivals and exports revenue in tourism and hospitality. This decline affects hotels, restaurants, attractions, and related sectors such as retail and transportation, exacerbating economic slowdown via a fall in AD and further worsening demand-deficient unemployment. Thus, managing exchange rate policies requires a delicate balance to support both inflation control and economic growth.

- In addition, to maintain the appreciation of the Singapore dollar, substantial foreign reserves are also necessary. Although Singapore has historically accumulated significant foreign reserves to manage its exchange rate effectively, the need to hold and possibly deplete foreign reserves to sustain currency appreciation can strain the country's financial resources, especially during periods of global economic uncertainty or external shocks. Hence, relying on manipulating exchange rate continuously may not be viable in the long term compared to supply-side policies, which will be discussed below.

R2: Supply-Side Policies may be more appropriate to combat inflation

- Policies aimed at improving productivity, such as investing in infrastructure, education, and technology, are more appropriate for managing inflation in Singapore. For example, the development of the Tuas Mega Port, set to be fully operational by the 2040s, aims to enhance logistics and shipping efficiency, thereby reducing transportation costs. Additionally, Singapore's Smart Nation initiative promotes the adoption of advanced technologies like AI, IoT, and robotics, driving productivity improvements through automation in manufacturing and services. This enhances overall efficiency, reducing unit production costs and shifting the SRAS curve to the right from $SRAS_0$ to $SRAS_1$, as shown in Figure 5.



- Moreover, initiatives like the SkillsFuture program focus on lifelong learning and upskilling the workforce, improving labour quality and increasing productive capacity across sectors. This results in each unit of labour generating more output, contributing to a rightward shift in the LRAS curve from $LRAS_0$ to $LRAS_1$ over the long term. help mitigate the likelihood of demand-pull inflation from P_0 to P_1 as shown on Figure 5 below.

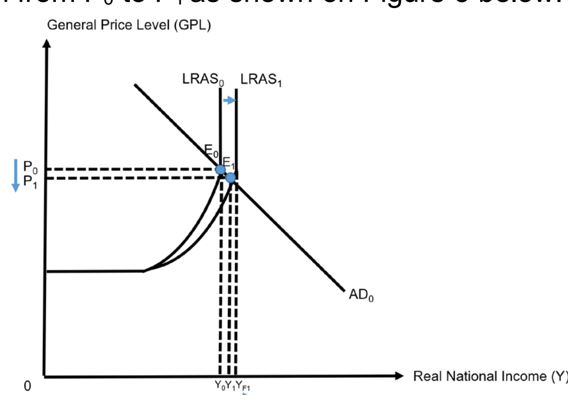


Figure 5: Supply-side polices to mitigate demand-pull inflation

Intermediate EV#2:

- However, supply-side policies require time to implement and show results, making them less effective for immediate inflation control. While these supply-side policies are essential for long-term price stability, they require significant time to implement and yield results. For example, the full benefits of the SkillsFuture program and the Smart Nation initiative will be realised over many years, making these policies less effective when compared to exchange rate manipulation, whose effect can be more immediately observed.

Summative Evaluation

- While managing the exchange rate is a powerful and immediate tool for controlling inflation in Singapore due to its direct impact on import prices and aggregate supply, it has limitations, especially regarding export competitiveness and external shocks.

- In contrast, supply-side policies, though slower to implement and yield results, offer sustainable long-term benefits by enhancing productivity, reducing production costs, and increasing the economy's potential output. Investments in infrastructure, education, and technology, as seen in Singapore's ongoing initiatives, are crucial for long-term price stability.

- Given a more complex world we are living in and Singapore’s interconnectedness to the rest of the world, a multifaceted strategy that combines exchange rate management with targeted supply-side measures is more effective. For example, alongside exchange rate policies, the government’s support for innovation and digital transformation under the Industry Transformation Maps (ITMs) ensures that both demand-pull and cost-push inflation are addressed.

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	Evaluation	
E3	Well-reasoned judgements:	4-5

	- A well-reasoned judgement on how effective the two policies are with reference to Singapore context - Question any unstated assumptions to arrive at this well-reasoned judgement. Good explanation of the limitations of the analysis	
E2	Largely unexplained judgements: Some attempt to explain their judgement on the significance of each policy but generic context	2-3
E1	An unsupported judgement: Mere evaluative statements or judgements that are neither supported nor relevant to any specific context	1