Question 4

Between 2012 and 2013 the number of Singapore dollars required to buy US dollars and Chinese Renminbi increase by 3.5% and 6.6% respectively, while the number of Singapore dollars required to buy Japanese Yen and Malaysian Ringgit fell by 15.2% and 3.5% respectively.

Source: Monetary Authority of Singapore

(a) Explain how an appreciation of a country's currency might affect the current account of its balance of payments. [10]

(b) Discuss the likely overall effects of the changes in the exchange rate in 2012-2013 on Singapore's domestic economy. [15]

(2016 A-Level Paper 2 Question 6)

Question analysis:

Command	Explain how
Concept	• Currency appreciation • Current account of Balance of Payments
Context	Not given but students can use Singapore since it is given in the preamble

Introduction: Unpack meaning of appreciation of currency (SGD) and current account of Balance of Payments

- The exchange rate of a currency is its price (in the foreign exchange market) in terms of other currencies.
- A country's exchange rate is determined by the demand and supply conditions in the foreign exchange market. An appreciation of a country's currency (say SGD) against the Japanese Yen (¥) or Malaysian ringgit (MYR) implies that less SGD is required to buy JPY¥100 or MYR100.
- The current account in the balance of payments records a country's international transactions of exports and imports of goods and services as well as primary and secondary income transfers.

Requirement 1: Explain how currency appreciation may worsen the current account

- Currency appreciation will cause the country's exports to be more expensive in foreign currencies and imports to be cheaper in domestic currency.
- Impact on exports:
    - With the increase in export prices **in foreign currencies**, quantity demanded will decrease. The extent of decrease in quantity demanded depends on PED.
    - The export revenue (price x quantity) in domestic currency will certainly fall since there is no change in export prices in domestic currency and quantity demanded has decreased because of the higher export prices in foreign currencies. The extent of decrease is greater when PED > 1.
- Impact on imports:
    - **Singapore context**: With the decrease in import prices in domestic currency, quantity demanded increases. If the <u>PED value of imports is less than 1</u> due to a lack of domestic substitutes, quantity demanded will increase less than proportionately,

ceteris paribus. This results in a decrease in import expenditure in domestic currency. *(Note that students may also explained that $PED_M > 1$ in the context of other countries. The question does not require a specific context for part a. In such a context, import expenditure would fall, improving the current account.*)

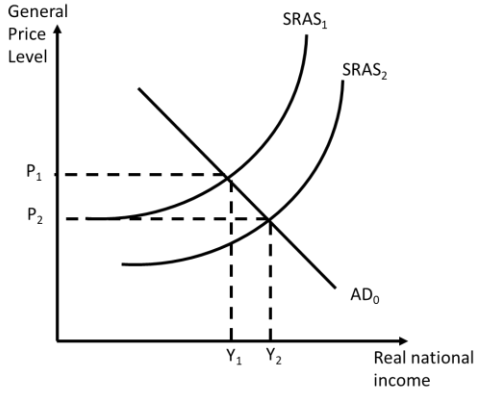
- Since both export revenue and import expenditure have decreased in domestic currency, the impact on net export revenue (X-M) is uncertain and depends on the Marshall-Lerner Condition.
- If the sum of the price elasticities of demand for exports and imports is greater than one, such as in the case of Singapore, the Marshall-Lerner condition holds, suggesting that the fall in X will outweigh the fall in M, leading to a fall in (X-M) hence worsening of the current account.

Note to students: When to use Marshall-Lerner Condition?

- Marshall-Lerner Condition is needed to explain how exchange rate changes affect the trade balance.
- This question is on the current account. Since the trade balance is an important component of the current account, Marshall-Lerner condition should be used to answer this question.

Requirement 2: Explain how currency appreciation may improve the current account through the impact on GPL.

- Singapore, being a resource-scarce country, is highly dependent on imports for factor inputs as well as necessities such as food.
- The appreciation of SGD will lower the price of imported resources in terms of SGD, lowering the unit cost of production in the economy. With a lower unit cost of production, it is more profitable for firms to produce, firms are more willing and able to produce and the SRAS increases from SRAS1 to SRAS2.



- Producers pass on the cost savings to consumers by decreasing the price of goods from P1 to P2, including exported goods. Many of Singapore's key exports such as petrochemicals and refined oil have high import content. Thus, this will help to mitigate the increase in price of exports in foreign currencies as explained in the earlier paragraph.
- If the cost savings are large enough, export prices may also decrease, making exports more competitive. Assuming PED value of exports is more than 1, export revenue will increase.
- Coupled with the decrease in import expenditure for import dependent countries (as explained in the earlier paragraph), an appreciation of SGD may even lead to an increase in net export revenue, improving her current account.

Conclusion:

- The impact of an appreciation of a country's currency on her current account, depends on the sum of value of PED for exports and imports, as well as the nature of her imports.

(b) Discuss the likely overall effects of the changes in the exchange rate in 2012-2013 on Singapore's domestic economy.

Question analysis:

Command	Discuss → a balanced 2-sided view is to be presented before the answer presents an overall well-reasoned judgement
Concept	• Currency appreciation and depreciation • Domestic macroeconomic aims • AD/AS analysis
Context	Singapore

Introduction: Unpack the changes in Singapore's exchange rate in 2012-2013

- Based on the information given, SGD has appreciated against Japanese Yen (¥) and Malaysian Ringgit (MYR) but depreciated against USD (US$) and Chinese Reminbi (RMB).
- The changes in Singapore's exchange rate against these foreign currencies would significantly impact the country's economic growth, unemployment and inflation as these countries are Singapore's key trade partners.

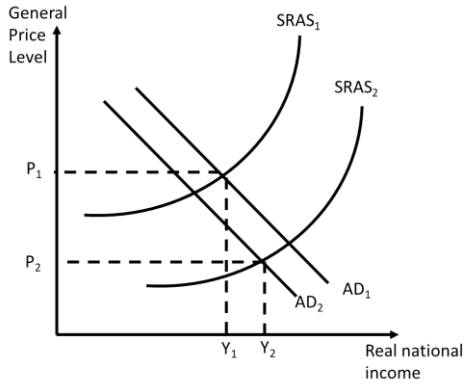
Requirement 1: Explain the effect of SGD appreciation against ¥ and MYR on Singapore's domestic economy

<u>Impact on SRAS:</u>

- SGD appreciation against ¥ and MYR ➔ Price of imported factors of production such as raw materials and semi-finished goods falls in domestic currency ➔ Firms will pass on lower unit cost of production to consumers in the form of lower prices ➔ SRAS increases ➔ less cost-push/imported inflation and increase in RNY when consumption expenditure rises in response to the lower prices/investment expenditure rises in response to improved expectations of future profits.

<u>Impact on AD</u>

- SGD appreciation against ¥ and MYR ➔ Price of exports rises in foreign currencies, leading to a fall in quantity demanded + Price of imports falls in domestic dollar ➔ decrease in export revenue and consumers switch away from local goods ➔ overall AD decreases ➔ economy has greater spare productive capacity ➔ less competition for resources ➔ price of factors of production such as wages fall ➔ firms will pass on lower unit cost of production to consumers in the form of lower prices ➔ decrease in RNY and increase in demand-deficient unemployment since firms are cutting down on production in response to an unplanned decrease in inventories. Briefly explain reverse multiplier process.
- Overall, the economy can still grow as shown in the increase in RNY from Y_1 to Y_2 if the increase in SRAS outweighs the decrease in AD as shown in the diagram below.



Note to students: When to use Marshall-Lerner Condition?

- Marshall Lerner condition is only used to explain how exchange rates affect the trade balance.
- In this question, the end point is to explain the change in AD/AS, not the change in the trade balance. Thus, Marshall-Lerner Condition is not required.

Evaluation 1:

- Singapore's economy can indeed still experience overall positive economic growth because of the following reasons:
  - although SGD appreciation reduces export price competitiveness, the use of imported resources in the production of exports suggests that firms can use the cost savings to reduce the extent of increase in export prices.
  - Singapore imports from Malaysia and Japan exceeded its exports to these countries (source: https://www.singstat.gov.sg/modules/infographics/singapore-international-trade). SGD appreciation is thus critical to the country's ability to manage imported inflation from Malaysia and Japan.

Requirement 2: Explain the effect of SGD depreciation against US$ and RMB on Singapore's domestic economy

Impact on AD:

- SGD depreciation against US$ and RMB ➔ Singapore's exports to US and China become cheaper in US$ and RMB ➔ increase in export revenue
- Singapore imports from US and China become more expensive in SGD ➔ unlikely to result in a substitution effect since Singapore does not have many domestically produced substitutes.
- AD increases ➔ economy has lesser spare productive capacity ➔ firms experience unplanned decrease in inventory of stocks ➔ firms increase production and employment ➔ this triggers the onset of the multiplier process where the employed workers increase induced consumption after experiencing an increase in household income, causing AD to increase again ➔ firms further increase production and employment, triggering another round of increase in AD ➔ this process continues and eventually stops when the total withdrawals match the initial increase in net export revenue ➔ RNY increases by a multiplied extent.

Impact on AS

- Singapore being a resource-scarce country, also imports much of her factor inputs from US (machinery, aircraft, medical, electronic equipment) and China (electronic, medical, technical equipment, iron and steel, plastics). Singapore's imports of factor inputs from US and China

become more expensive in SGD ➔ raise unit production costs ➔ SRAS decreases ➔ firms pass on increase in cost to consumers as higher prices ➔ GPL rises ➔ cost-push inflation

Note to students:

- Since Requirement 2 is the opposite of Requirement 1, there is no need to repeat a detailed analysis. You explanation may be brief compared to what you explained in R1.
- Another option is to frame R1 as the impact on AD and R2 as the impact on AS instead.

Overall Conclusion:

The likely overall effects on Singapore domestic economy depends on

- **Nature of Singapore exports and imports to US, China, Japan and Malaysia** and **extent of SGD depreciation against US$ and RMB and appreciation against ¥ and MYR**
    - As US and China are open economies with huge domestic markets, Singapore's cheaper exports to US and Chinese markets are very likely to be price elastic (e.g. more than proportionate increase in number of Chinese tourists)
        - SGD depreciation against USD and RMB → large increase in Singapore's export revenue from US and China
    - Compared to US and China, Japan is a relatively small export market for Singapore. Hence even with SGD appreciation against ¥ (15%), higher Singapore export price in ¥ (even with price elastic demand), the fall in Singapore's export revenue would likely be insignificant.
    - Singapore is a major importer of basic necessities (food, water, agriculture, consumer products) from Malaysia. Appreciation of SGD (3.5%) against MYR → significant increase in cost of production → greater fall in SRAS.
- **Other factors, besides exchange rate, may impact the domestic economy.** These changes in the exchange rate of SGD may result in speculative behaviour based on expected future changes in the exchange rate. Capital flows, business and consumer confidence may thus change. These will indirectly impact the level of consumption and investment → affect level of AD and productive capacity in the long run.

Question 5

The Singapore dollar (SGD) strengthened against the US dollar (USD) in a year of volatility and uncertainty in 2022. Singapore continued to have trade surplus in the same year.

(a) Explain why governments may be concerned about a persistent balance of trade deficit. **[10]**

(b) Discuss whether internal factors or external factors are more significant in explaining the continuous surplus in Singapore's balance of trade. **[15]**

(a) Explain why governments may be concerned about a persistent balance of trade deficit. [10]

Question analysis:

Command	Explain why

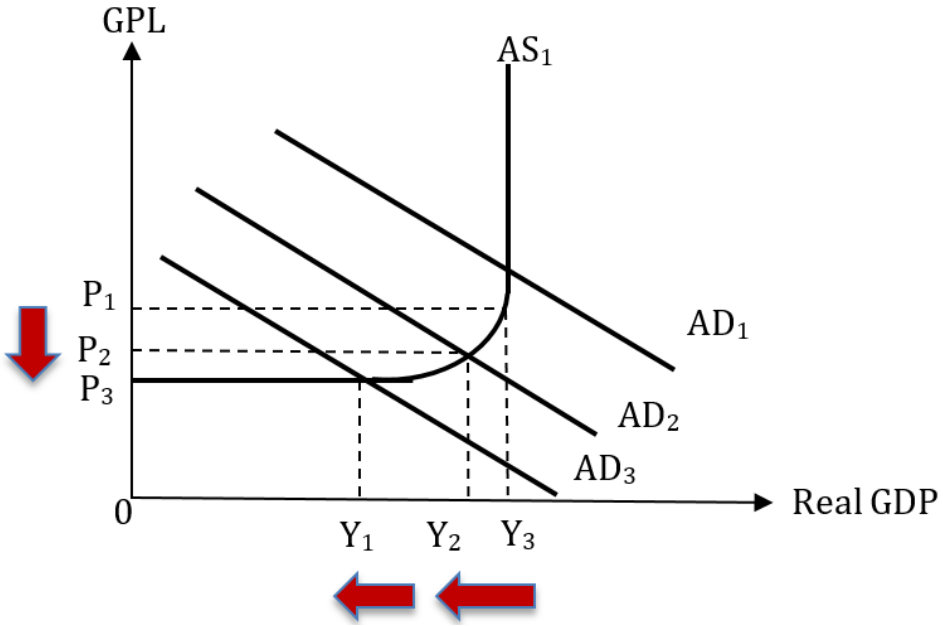
Concept	• Persistent BOT deficit • AD/AS analysis • Governments' macroeconomic aims • Currency depreciation
Context	Not given (so students are free to include appropriate examples to support analysis)

Introduction:

- Unpack the meaning of persistent balance of trade (BOT) deficit, pointing out this can refer to a worsening BOT deficit.
- A BOT deficit is caused by either/both falling export earnings and rising import expenditure, resulting in the country experiencing a negative net export revenue where export revenue is less than import expenditure.
- The concerns to government arise from the domestic macroeconomic problems caused by a persistent BOT deficit.

Requirement 1: A worsening BOT deficit can lead to negative economic growth and higher unemployment.

- A worsening BOT deficit suggests that net export revenue is negative and increasing.
- Assuming no change in other AD components and the country is not producing at maximum productive capacity, AD decreases, causing firms to experience an unplanned increase in inventories of stocks.
- To maximize profit in the light of falling AD, firms cut down on production and begin laying off workers. This triggers the onset of the reverse multiplier process where the unemployed workers cut down on induced consumption after experiencing a decrease in household income, causing AD to decrease again. In turn, firms further reduce production and employment, triggering another round of decrease in AD. This process continues and eventually stops when the total withdrawals match the initial decrease in net export revenue.
- The eventual decrease in national income from Y_3 to Y_1 shown in the diagram below is several times more than the initial decrease in net export revenue and the extent is determined by the country's multiplier size.
- All in all, the country experiences higher demand-deficient unemployment due to the reduction in derived demand of labour and a fall in actual economic growth



Requirement 2: A worsening BOT deficit can also cause the domestic currency to depreciate, leading to imported inflation.

- The lower demand for export will cause a lower demand for the country's currency in the exchange rate market. At the same time, there is an increase in the supply of the country's currency due to the higher demand for imports, resulting in higher amount of domestic currency exchanged for foreign currencies to pay for the imports. The increase in supply and fall in demand of the country's domestic currency in the foreign exchange market would therefore lead to the depreciation of the domestic currency.
- This can be especially detrimental to small and open economies such as Singapore, which rely heavily on imported raw materials for production and consumption. The depreciated domestic currency could contribute to higher imported input costs for producers, causing SRAS to decrease. To maximise profit, firms would pass on the higher cost to consumers in the form of higher prices. In response, consumers would react to the increase in GPL by reducing their consumption expenditure, leading to a fall in production of goods hence resulting in a decrease in the country's national income.

Conclusion:

- A persistent BOT deficit can cause long term damage to a country's domestic macroeconomic aims which would then impact living standards negatively.

Note to students: As an extension to this question, consider/discuss a similar 15m question on **whether governments should always be concerned about a BOT deficit.**

"Discuss whether governments should always be concerned about a growing trade deficit." [15m]

You may refer to section 3.5 of the External Macroeconomic Issues lecture notes for these considerations: **root cause, duration and volume of BOT deficit.**

Discussion points in addition to those listed above:

1. **Unintended benefits brought by BOT deficit** → e.g., mitigating persistently high demand-pull inflation by reducing AD for countries that are producing near/at their maximum productive capacity.
2. **Stage of economic development** → developing countries tend to incur a BOT deficit due to their high dependence on imported raw materials and capital equipment for production and consumption.
3. **Strength of domestic demand** → although (X-M) may be negative and rising, it may not cause AD to decrease if domestic demand in the form of C, I and G are increasing more, hence allowing the economy to still grow overall.
4. **Size of economy** → determines whether external demand is a key driver of growth → e.g. small and open economies such as Singapore vs large and less open economies such as China and US.
5. **Government's policies put in place to improve long-term export competitiveness/address undesirable causes of BOT deficit** → e.g. some governments may already have implemented policies aimed at improving the quality of exports but these policies take time to take effect → such policies suggest that the government is aware that the BOT deficit may be a result of structural issues that need to be managed before the BOT deficit becomes persistent in nature.

(b) Discuss whether internal factors or external factors are more significant in explaining the continuous surplus in Singapore's balance of trade. [15]

Question analysis:

Command	Discuss whether → a balanced 2-sided view is to be presented before the answer presents an overall well-reasoned judgement
Concept	• BOT surplus • AD/AS analysis • Internal and external causes of BOT surplus
Context	Singapore

Introduction:

- Singapore's BOT surplus indicates that the country's export revenue is greater than import expenditure, hence giving rise to a positive net export revenue.
- Singapore's attainment of continuous BOT surplus can be explained by both internal and external factors.

Requirement 1: Internal factors have strengthened Singapore's export competitiveness, allowing the country to enjoy continuous BOT surplus.

- Internal factor 1 – policies aimed at increasing the use of technology in production
  - The government has used policies to promote both process and product innovation in order to increase export competitiveness leading a trade surplus.
  - Over the years, Singapore has tapped on advancing technology to produce high value-added goods and services. This strong emphasis on technology, innovation and productivity can be seen in the implementation of government policies that encourage

both firms and workers in embarking on digital transformation and skills upgrading respectively.
    - The demand for Singapore's exports has therefore increased as foreign consumers switch over to buying Singapore's goods and services, contributing to an increase in export revenue.
    - In the long term, the use of technology in production may also help to reduce the exports' PED value, allowing firms to increase prices should the demand turn price inelastic.
    - Technology also fosters improved efficiency in production, allowing firms to enjoy cost savings which translate to improved price competitiveness. The demand of Singapore's exports is price elastic since there are substitutes available. A decrease in export price will thus lead to a more than proportionate increase in quantity demanded, ceteris paribus, leading to an overall increase in export revenue.
    - Together, improved price and non-price competitiveness allows Singapore's export revenue to increase.
- Internal factor 2 – policies aimed at diversifying export markets and import sources
    - Given the nature of Singapore's economy, the government is aware that the openness of the economy brings about inevitable vulnerability to external shocks. This can be seen in Singapore's economic slowdown during the Covid-19 years or when its trade partners are affected by unanticipated external events such as the US-China trade war/Russia-Ukraine war.
    - Government policies aimed at increasing the country's free trade arrangements have helped to diversify export markets so that the extent of decrease in export demand can be reduced/managed when external shocks happen. In the long run, the demand for Singapore's exports also increases, bringing about an increase in export revenue.
    - In addition, the diversification of import sources help to reduce the increase in import expenditure when global prices rise.
- Internal factor 3 – policies aimed at maintaining a low and stable inflation rate
    - Singapore uses an exchange rate-centred monetary policy to maintain a low and stable inflation rate.
    - Given Singapore's high dependence on imported resources, a strong SGD has helped to reduce imported inflation.
    - Although export price competitiveness may be reduced by the modest and gradual appreciation of SGD, the production of high value-added goods and services suggests that the negative impact is not likely to be significant. Furthermore, since imports are used for production, cost savings enjoyed by firms will help to compensate for the increase in export prices.

Evaluation 1: That being said, these internal factors are not distinctly internal because the driver for ongoing technological advances etc is ultimately the country's exposure to external developments and competition. This is due to the nature of Singapore's economy which necessitates the country's global orientation in its policies and firms' business strategies.

Requirement 2: External factors also play an important role in sustaining Singapore's BOT surplus.

- Singapore's export performance is determined very much by the economic growth of key trade partners. If key export markets are seeing positive economic growth, they will produce, consume and import more from Singapore. Export demand thus increases, leading to higher export revenue.
- For example, our trading partners such as China have been experiencing rapid economic growth in the past few decades. Given the large domestic market in China, the growing middle

and upper class have consumed more goods and services internationally, including Singapore's goods and services. In addition, as countries develop, consumers tastes and preferences have also changed. There is an increase in consumption of high technology goods such as iPhones and computers, which utilise intermediate goods made in Singapore. There is also an increase in demand for luxury goods and services, such as tourists visiting Singapore's high end hotels and casino.

- The interconnected global supply chains also means that there will be greater demand for Singapore's exports of intermediate goods such machinery and equipment, chemicals and refined petroleum when foreign economies are doing well. For example, as China's economy is growing the their firms are increasing production, the Chinese firms would demand for more intermediate goods such as semiconductors from Singapore, contributing to our rising exports.

Evaluation 2: While foreign/global economic growth makes it possible for Singapore to have a BOT surplus, the keen global competition means that domestic competitiveness is essential for Singapore to be able to export and compete with foreign producers in export markets and also of imports into Singapore.

Overall Conclusion:

- **[Stand]** Both internal and external factors influence Singapore's ability to have sustained trade surplus. These factors are interlinked because neither can be stand-alone factors enabling the continuous trade surplus.
- **[External factors are more important due to the nature of Singapore's exports]** Some may argue that external factors are more significant because the success of the internal factors is highly dependent on the strength of global economic growth which then determines the strength of Singapore's external demand. This is especially so since Singapore produces high value-added goods and services with YED value > 0 so during recessions, the demand for Singapore's exports will inevitably fall regardless of improvements to export competitiveness brought about by domestic policies.
- **[Internal factors are more important due to Singapore's ability to experience continuous BOT surplus despite external fluctuations]** That said, Singapore has been able to enjoy continuous trade surplus despite global economic slowdowns. Hence, internal factors can be argued to be more important in diversifying export markets and managing imported inflation in the light of external shocks.

Question 6

Most economies in the world are suffering from budget deficits and balance of trade deficits for the past two years due to domestic and external challenges.

(a) Explain the relationship between a balance of trade deficit and a budget deficit. **[10]**

(b) Discuss whether policies adopted by a government to reduce the balance of trade deficit would worsen the budget deficit. **[15]**

<u>Note to students:</u> Please do not attempt part (b) now as it requires content from the topic on International Trade.

(2022 NYJC Prelims)

(a) Explain the relationship between a balance of trade deficit and a budget deficit. [10]

Question analysis:

Command	Explain
Concept	• BOT deficit • Budget deficit
Context	Not given (so students are free to use appropriate examples to support analysis)

Introduction:

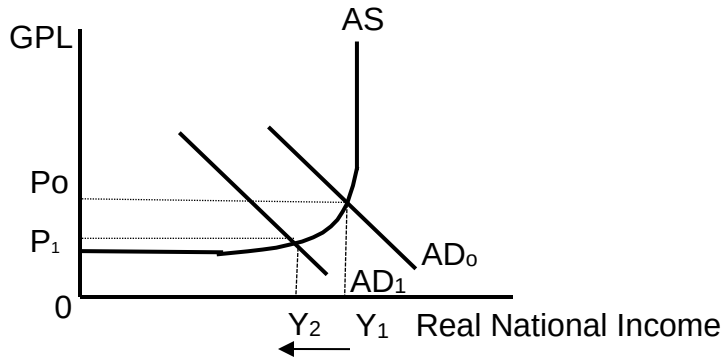
- Define balance of trade (BOT) deficit and budget deficit
    - BOT deficit arises when there is an increase in import expenditure (M) and a decrease in export revenue (X) which leads to X < M.
    - Budget deficit arises when there is an increase in government expenditure (G) and a fall in tax revenue (T) which leads to G > T.

Requirement 1: Explain how a budget deficit might cause a BOT deficit

- Budget deficit may be caused by the government spending more on transfer payments to boost the disposable income of lower-income households which will then increase their consumption expenditure (C).
- Alternatively, budget deficit may be caused by the government lowering personal income tax rate which will increase disposable income, hence purchasing power of the consumers leading to an increase in C. At the same time, a fall in corporate tax will increase firms' after-tax profits, increasing the investment expenditure (I).
- The increase in G, C and I will increase the country's aggregate demand (AD) and lead to an increase in RNY. This initiates the multiplier process where firms respond to an unplanned decrease in inventory of goods by increasing production and employment. Using their increased household income, households will consume more goods and services and this increases AD again. The process eventually stops when the country's RNY increased by a multiplied extent.
- Apart from an increase in induced C, households may also demand for more imports, increasing import expenditure (M).
- Also, if the economy is near full employment level, the increase in AD will cause an increase in GPL as the higher demand for resources accompanied by greater scarcity of resources, will increase factor prices. The increase in costs of production will translate to higher GPL and reduce export competitiveness of the economy in the next time period reducing the export revenue (X) assuming that PEDx > 1.
- The increase in M and decrease in X may then cause the country to experience a BOT deficit.

Requirement 2: Explain how a worsening BOT deficit will cause budget deficit

- When there is a worsening BOT deficit, X will fall and M will increase. This will lead to a fall in AD from AD_0 to AD_1. With the fall in AD, it will lead to a multiplied fall in RNY from Y_1 to Y_2 resulting in a recession.



- When RNY falls, tax revenues will fall when firms/tax payers earn lower profit/disposable income and are subject to lower corporate/personal income tax rates.
- At the same time, the lower level of economic production will reduce the demand for resources. Since labour is a derived demand, unemployment rate will increase casing the amount paid out as unemployment benefits to rise. Alternatively, governments may dispense cost-of-living subsidies to help lower-income households manage their living expenses during a recession.
- These will inevitably cause an increase in G and a fall in T (G>T) leading to a budget deficit.

(b) Discuss whether policies adopted by a government to reduce the balance of trade deficit would worsen the budget deficit. [15]

Question analysis:

Command	Discuss whether → a balanced 2-sided view is to be presented before the answer presents an overall well-reasoned judgement
Concept	• Policies to reduce/correct a BOT deficit • Budget deficit
Context	Not given (so students are free to use appropriate examples to support analysis)

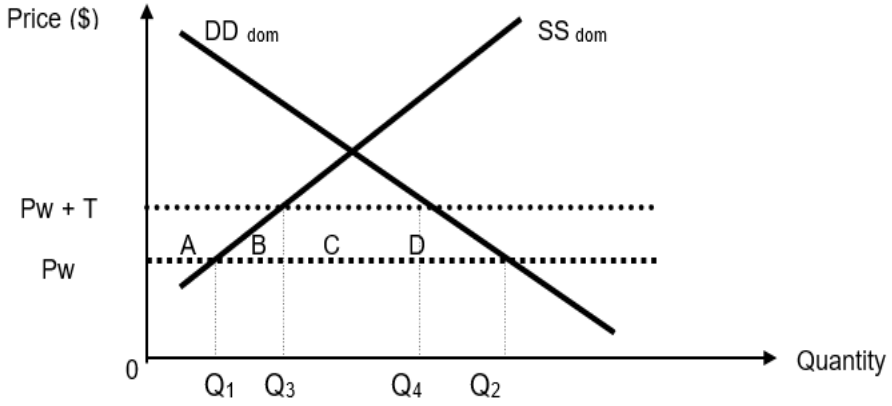
Introduction:

- Briefly explain why a government should be concerned with a BOT deficit and state the policies that a government can implement to reduce the deficit.
  - The ↑ in trade deficit will translate into a ↓ in AD and subsequently → ↓ in RNI.
  - This may also signal the presence of structural unemployment if the fall in X is primarily due to loss of comparative advantage.

Requirement 1: Explain how the policy measures used to reduce a BOT deficit might improve the budget deficit

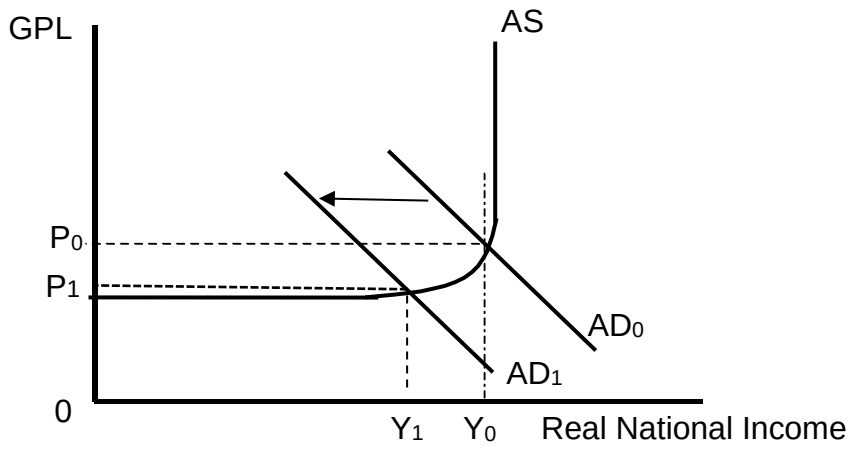
- **Imposition of trade barriers such as tariffs**
  - Tariffs are indirect taxes that may be of an *ad valorem* (levied as a percentage of the price of the imports) or *specific* (levied as a tax per unit of weight or physical quantity) form.

- To discourage the purchase of imports, the government can impose a tariff on the imported good. With a tariff, the price the domestic consumer pays for the good is Pw plus the tariff.
- Assume the government imposes a tariff represented by T, the price paid by the domestic consumer is Pw+T, where Pw goes to the foreign producer and T goes to the government. This artificially raises the import prices, making imports less price competitive.



- The tariff raises the domestic price to Pw+T, and this encourages domestic supplier to raise their quantity supplied (law of supply) from quantity $\mathbf{Q_1}$ to $\mathbf{Q_3}$. Simultaneously, at the higher price Pw+T, domestic consumer are now only willing to purchase quantity $\mathbf{Q_4}$ i.e quantity demanded falls from $\mathbf{Q_2}$ to $\mathbf{Q_4}$ (law of demand). Hence at Pw+T, domestic consumers are willing to purchase $\mathbf{Q_4}$, but domestic suppliers are only willing to supply $\mathbf{Q_3}$. Hence $\mathbf{Q_4Q_3}$ is imported from the foreign producers. Thus, the amount imported is reduced to $\mathbf{Q_4Q_3}$ (from $\mathbf{Q_1Q_2}$ before the tariff).
- The fall in import expenditure, assuming no change to X, will reduce the BOT deficit experienced by the economy.
- At the same time, the tax revenue collected from tariff will improve government's budget balance.

- **Expenditure-Reducing Measures: Contractionary Fiscal Policy**
  - Reducing government expenditure on goods and services in the area of defence, education, healthcare, will reduce the 'G' component of AD.
  - Increasing direct taxes such as personal income taxes will reduce the disposable incomes and purchasing power of households leading to a fall in demand for goods and services including imports. Hence, consumption expenditure will fall.
  - When corporate taxes are raised, it leads to a fall in after-tax profits, reducing expected profitability, leading to a fall in investment expenditure.
  - As G, C and I fall, AD fall and national income takes on a multiplied reduction through the multiplier process resulting in a multiple for in RNY.
  - The fall in RNY will reduce households purchasing power and hence ability to consume imported goods reducing M.
  - With the fall in M, assuming no change to X, BOT deficit will be reduced.
  - Due to the fall in G and increase in T (due to more tax collection from income and corporate tax) government's budget will also improves.



Requirement 2: Explain how the measures used to reduce a BOT deficit might worsen the budget deficit

- **Supply-side Policies (To increase both SRAS and LRAS)**
  - Government subsidies to lower the costs of production (COP) of the firms such as wage subsidies, rental and utility rebates. By reducing the COP, firms will be able to lower the prices of exports making them more price competitive in the international markets, increasing export revenue if PEDx>1.
  - Government can provide research grants such as the Productivity and Innovation Credit by the Singapore government. By subsidizing firms' investment in R&D, this will encourage firms to innovate in terms of product and process innovation. Product innovation will lead to improvement in quality of the goods produced while process innovation will allow the firms to produce at a lower cost resulting in more competitive exports.
  - The increase in demand for exports will increase X. At the same time, domestic goods will be relatively cheaper and better than imports (assuming they are substitutes) causing a fall in M. The increase in X and fall in M will reduce the BOT deficit.
  - However, these supply-side measures to improve the competitiveness of domestic goods require huge government funding and may thus worsen budget deficit.

Overall Conclusion:

- Both expenditure reducing and expenditure switching measures can be adopted to reduce a BOT deficit. **[Stand]** However, their effect on government's budget is highly dependent on the following:
  - **[Assumption]** Use of tariff allows the government to collect more tax revenue. However, if trading partners retaliate by imposing trade barriers on the exports, the resulting fall in demand for exports might lead to high unemployment (for countries highly dependent on exports). Similarly, contractionary FP will result in reduction of RNY and production in the economy, increasing unemployment as well. The increase in employment rate will increase government's spending on transfer payments to support the unemployed which would worsen government's budget balance.
  - **[Time period]** Though supply-side measures might worsen budget deficit, the benefits of these measures can improve the comparative advantage and productive capacity of the economy. In the long run, the country is in a better stead to achieve sustained growth due to more competitive domestic goods and exports, and more competitive investment

climate to encourage higher level of investments in the economy. The higher economic growth in the long run will allow the government to earn higher level of tax revenue from households and firms, and the higher employment level will also reduce government's burden on transfer payments improving the government's budget balance.