Anglo-Chinese Junior College

Department of Economics

H2 Domestic Macroeconomic Aims & Problems

TUTORIAL WORKSHEET 1

Section B: Case Studies

- Case Study 1: The tale of BRICS (2019 ACJC Term Assessment)
- Case Study 2: A Tale of the Two World's Superpowers (2020 NYJC Prelims)

Section C: Essay Questions

- Essay Q1: Circular flow of income and impact of government spending on inclusive growth and unemployment
- Essay Q2: Economic growth and standard of living
- Essay Q3: Causes of negative inflation and importance of various macroeconomic aims

Note to students: It is very important for your learning that you thoroughly prepare your answers before tutorials.

Your tutors may separately assign you modules from the SLS to supplement your understanding of the topic.

Section B: Case Studies

- **Case Study 1: The tale of BRICS (2019 ACJC Term Assessment)**

Suggested answers for H2 Case Study Q1 (BRICS)

(a) (i) Compare the real GDP in China and India with that of Brazil and Russia from 2012 to 2016. [2]

The real GDP in China and India and Brazil and Russia has increased in 2012-2014. [1]

While, real GDP in China and India has increased throughout the entire period, real GDP in Brazil and Russia fell in 2015-2016. [1]

OR
Real GDP in China and India has also been increasing at a faster rate compared to Brazil and Russia throughout the entire period. [1]

(ii) Explain whether the data provided in Table 1 and 2 is sufficient to show that India has achieved sustained and inclusive economic growth. [4]

Table 1: Positive economic growth throughout 2012-2016. [1]
Data is sufficient to show that India has achieved sustained economic growth [1]

However, data provided in Table 1 and 2 (data on GDP and HDI) are insufficient [1] to show that India has achieved inclusive economic growth as there is no data on income distribution or inclusiveness .[1]

(Teaching point: need Gini coefficient to explain income distribution.)

(Note: Students are to conclude if data is sufficient to show both sustained AND inclusive economic growth and explain why)

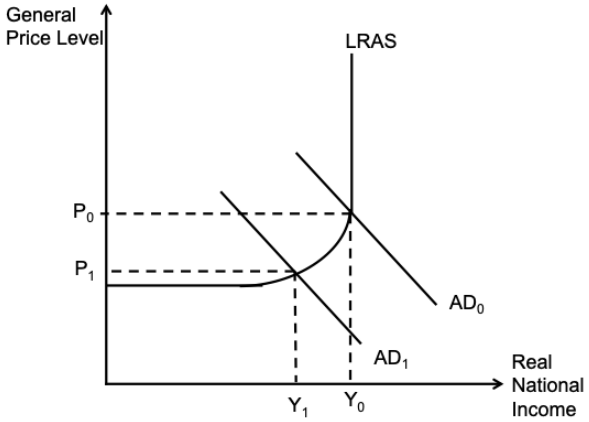
(b) Extract 1 states that "the fall in commodity prices in 2015 to 2016 has done significant damage in all three countries."

With the aid of a diagram, explain the above statement with respect to Brazil's real GDP. [6]

(Context) Brazil is a commodity exporter of soybeans, iron ore, and crude oil. As such, when the prices of commodities fell, the total export revenue will be affected.

Since the demand for Brazil's commodities is likely to be price inelastic due to the lack of close substitutes, [1] the fall in price leads to a less than proportionate increase in quantity demanded. Hence, total export revenue for Brazil falls. [1]
This leads to a fall in aggregate demand (as seen from a leftward shift of AD0 to AD1) [1], which results in lower economic activity in the country and hence real GDP for Brazil falls from Y0 to Y1.

Diagram [1]



Recognising the significant damage [2]:
(Explain the drastic change in real GDP) As seen in Table 1, Brazil was facing positive growth rates before 2015, but it started to face negative growth rates in 2015 & 2016. This shows that the fall in commodity prices led to a significant damage to Brazil's real GDP.
OR
(Explain how exports is significant to Brazil) As mentioned in extract 1 "Other BRICS countries rose mainly on the back of their vast natural wealth", shows that Brazil's growth was driven by its exports. Hence when there is a fall in exports, this had a significant impact on Brazil's real GDP.

(c) With reference to the information where appropriate, discuss the impact of Industry 4.0 on unemployment in different countries. [8]

Introduction:
Explain what Industry 4.0 is: As mentioned in Extract 2, it is the fourth industrial revolution, where there are many technological advancements and adoption of information and communication technology. This means that there is a disruption to traditional manufacturing and production processes and could cause a displacement of workers, leading to unemployment.

Argument: Industry 4.0 may cause higher unemployment in some countries.

The adoption of automation and the greater use of machines in the workplace will result in a lower demand for labour, especially low skilled labour, increasing unemployment. Automation of industries has resulted in the replacement of human labour with machinery and robots as machines could do the same job more efficiently. Hence this reduces the demand for workers or in some cases, eliminates the need for workers altogether, for e.g call centres or telemarketers are now replaced by artificial intelligence.

Since Industry 4.0 is likely to affect labour-intensive industries, which tend to replace the low-skilled labour in the firm, these workers might not have the ability to find new jobs easily as the economy progresses towards knowledge-based industries, where high skilled workers are needed in the economy to maintain machinery due to the rise in automation. Thus this causes a mismatch of skills and jobs available, and thus leading to a rise in structural unemployment.

This is particularly evident in countries, which has emerging economies as it generally has more labour-intensive industries and hence there is a high dependence on lower skilled labour in the BRICS (e.g only 2% of the labour in India is skilled). This is supported by extract 2 where there are two-thirds of all jobs in developing countries, which are susceptible to automation. Also, the proportion of jobs threatened by automation are 69% and 77% in India and China respectively. Thus Industry 4.0 will cause higher structural unemployment in countries with emerging economies.

In addition, due to Industry 4.0, there will be a shift in economic power to countries which are more technologically advanced, which are usually more developed economies. As seen in extract 3, this phenomenon will result in shifting of key value-adding activities back to the developed economies and away from economies which are highly labour intensive and used to focus on manufacturing. Hence export demand for countries which focused on manufacturing may be lost to more technologically dynamic competitors, like developed economies, and hence leading to a fall in AD for goods and services in these developing countries. Hence this means fewer jobs will be created, resulting in DD-deficient unemployment in these developing countries.

Counter-argument: Industry 4.0 may not necessarily cause higher unemployment in some countries.

However, some countries which are technologically driven will benefit from Industry 4.0, as there is a shift of key economic activity back to developed economies. The higher demand for exports will results in higher AD and NY, leading to more jobs created and hence higher employment in these economies. One e.g is India, which instead of focusing on manufacturing, chose to focus on services, with emphasis on IT, and hence benefitted from Industry 4.0.

In addition, the impact of Industry 4.0 on unemployment in countries is moderated by slower technology adoption. This gives time for workers to be re-skilled and up-skilled, especially in countries with emerging economies like BRICS, so that they will be prepared for the new jobs that Industry 4.0 will bring about. Many BRICS nations have invested in implementing measures for skill development, as seen in Extract 2, where countries have been increasing education expenditure to increase the no. of vocational trainers by launching nation-wide programmes as well as launching initiatives to equip the labour force with new skills to cope with the changes in the industry. Thus as Industry 4.0 will lead to the creation of jobs that require higher-skilled workers, hence the measures put in place will ensure that workers will be able to find jobs and will not be structurally unemployed in these BRICS nations.

Synthesis:

Hence, automation may result in the redundancy of the lower skilled workers but it would also create employment opportunities for the higher skilled workers. This would result in an increase in the type of unemployment, that is, structural unemployment rather than an overall increase in unemployment rate.

Impact of Industry 4.0 on the level of unemployment in various countries also depends on the nature of economy. To some countries where the majority of

workers are employed in the manufacturing sectors, generally in countries with emerging economies like in BRICS, automation would have a larger impact on unemployment. To other countries which are more developed, such as Japan and Singapore, which are facing a shortage of labour, automation is seen as a means to increase productivity and hence competitiveness, which could reduce unemployment. It should be noted that although automation may reduce certain jobs in the manufacturing sector, it may also increase job opportunities as the need for skilled workers increases. Hence the overall impact of Industry 4.0 on the level of unemployment in the country also depends on how fast the government is able to adopt policies to equip its labour force with the right skills to keep up with the changes that Industry 4.0 will bring to the economy.

(Other points of discussion: Students can also consider short-term impact vs long-term impact of Industry 4.0 have on different countries)

Level	Level Descriptors	Marks
L2	• Balanced, well-developed and accurate conceptual analysis on how Industry 4.0 will affect unemployment in different countries differently. • Good use of case information to support explanation	4-6
L1	• Answer may not be well-developed and may also contain inaccuracies. • Answer may also only be one-sided. • Some use of case information to support explanation, but may not be well-utilised.	1-3
Evaluation		
E2	• For an answer that provides a well-reasoned judgement that the impact on unemployment differs from country to country, depending on the nature of economy.	2
E1	• For an answer that gives unsupported and unexplained evaluative statements.	1

(d) **Discuss the view that real GDP is able to reflect the well-being of a country's citizens.** **[10]**.

Introduction

Real GDP: It measures the value of final output produced within the geographical boundary of the country, regardless of factor ownership before depreciation in a year and after excluding the effects of inflation.

Well-being: It refers to the quality of life; the welfare of the population and this consists of both material and non- material welfare.

Material – amount of goods and services that individuals in the country have available for consumption

Non-material– amount of leisure people consume, life expectancy, standard of education, amount of pollution

While real GDP is a useful data in reflecting the material aspect of well-being of citizens, it is limited in reflecting the non-material aspect. Thus, in order to gauge the well-being of country's citizens, it is important for countries to complement the use of GDP data with other data such as HDI so as to have a holistic view in assessing the overall well-being of its citizens.

Argument: Real GDP may be able to reflect the well-being of a country's citizens.

The increase in real GDP means higher production of goods and services, which means more goods and services are available for consumption in the country. Furthermore, if the population growth is slower than real GDP growth, it would mean that real GDP per capita has increased. With higher real income per person, purchasing power increases. Each person can purchase more goods and services and consumption increases, and thus indicating an improvement in the material well-being of citizens.

The use of real values makes sure that inflation does not overstate the actual living standards. An increase in the cost of living would imply that a higher income is needed to maintain the same standard of living. An increase in the cost of living which is not match by an increase nominal income would adversely affect per capita real GDP, thus real GDP per capita is able to reflect the material well-being of citizens.

EV: Yet, whether the increase in real GDP will be able to reflect the well-being of citizens depends on the composition of the real GDP. If the increase in real GDP is due to higher consumption, it will be able to reflect better well-being of citizens. However, if the increase in real GDP is due to higher investment, it may not necessarily translate to better well-being of citizens.

If there is a rise in real GDP, government will receive higher tax revenue through income tax and sales tax. Through higher tax revenue, the government will be able to accumulate budget surpluses and hence have greater ability to improve social services and adopt income redistributive measures. For e.g in Singapore, the government implemented the GST rebates as well as food and utility vouchers to help alleviate the burden from the lower income households. This will help to

improve overall well-being of citizens, and hence able to reflect the well-being of citizens.

Ev: However, whether the rise in real GDP will be able to reflect higher material well-being, depends on how the government spends the higher tax revenue collected – such as on improving facilities and income redistribution measures.

Counter argument: Real GDP may not fully reflect the well-being of a country's citizens.

Real GDP may be limited in its ability to measure the material well-being of a country's citizens, depending on its demographics of its people who reside in the country. This is because real GDP fails to take into account of factor incomes earned by citizens who live overseas and non-citizens who reside in the country. Hence real GDP may not be a good reflection of the well-being of citizens if there is a large proportion of residents who are non-citizens as they will remit part of their incomes back to their home country. This is especially so for countries which are emerging economies where there is a large proportion of foreign direct investments and foreigners who are in the country, and hence real GDP will be limited in its ability reflect the well-being of citizens and may only reflect well-being of residents.

Also, real GDP is limited in measuring the non-material aspect of well-being. Since higher real GDP imply higher levels of production, it could mean that air quality could have worsened due to the increase in emissions arising from production of goods and services. Thus, while the citizens could enjoy higher purchasing power and greater quantity of goods and services available, the worsening of air quality could lead to poorer health and higher healthcare costs. On the other hand, higher real GDP generated in Singapore could be due to citizens working harder and spending longer hours at work. This could mean less time spent at home with family, less quality time with children and parents and less rest time for themselves. Hence while high economic growth provides for the material opportunities, it may not necessarily allow citizens the leisure time to enjoy it. Hence, real GDP is limited in its ability to reflect the non-material aspect of well-being for its citizens.

Thus even though Table 1 states that India has high real GDP growth rates, this only shows us that real GDP is rising at a faster rate in India compared to China. However, this does not indicate that citizens' well-being is better in India than China, but merely indicates that material well-being might have improved in India as real GDP has increased. This is reinforced by the data on HDI and the Social Progress Index (SPI), where India is ranked the lowest among the BRICS countries. While real GDP helps to reflect material well-being of citizens, it is limited in its reflection of the well-being of citizens in the country.

To complement the use of real GDP in reflecting well-being, data on social and environmental factors is needed to measure non-material aspects such as air quality or pollution (e.g. Social progress index, Pollution Standard Index). Hence the use of a composite indicator will be able reflect both material and non-material well-being better. One e.g is the use of Human Development Index (HDI) as it measures life expectancy at birth, expected years of schooling, mean years of schooling and gross national income (GNI) per capita. Hence as seen from Table 2, it is seen that the citizens in Russia (0.804) has better well-being than citizens in Brazil (0.754). Together, it accounts for both the material and non-material aspects

of welfare as thus is a better representation of the well-being of the citizens in the country.

Hence real GDP is unable to fully reflect well-being as it needs to consider other aspects such as environmental sustainability and tolerance and inclusion. This can be seen in India, where despite the higher real GDP growth rates, its citizen lack access to piped water and sanitation facilities, and its level of air pollution is far worse than any of the other BRICS. Another major aspect which is crucial to a nation's prosperity is Tolerance and Inclusion, where India shows a weak performance on this front compared to other countries. And thus real GDP alone will not fully reflect the well-being of citizens in a country as economic progress may not translate into a higher quality of life for these economies.

Other points of discussion: Students may also consider income distribution as another argument to show that real GDP may be insufficient as it is an aggregate measure, but may not reflect the well-being of various income groups in the country.

In conclusion, while real GDP may not fully reflect the well-being of its citizens, it is an indicator that is accessible and easily available. Thus, data on real GDP will at best be able to only reflect material well-being of its citizens, but when it is complemented with other data such as HDI, PSI, factor income from abroad, it would give a more holistic picture on both the material and non-materials aspect of well-being of its citizens.

Level	Level Descriptors	Marks
L3	• Well-developed and accurate conceptual analysis on how real GDP is able to reflect both material and non-material well-being of its citizens and shows the other aspects of well-being that is not reflected. • Balanced discussion on **<u>both</u>** economic and social indicators in its ability to reflect well-being. • Good use of case information to support explanation (For e.g measures that measure socio-economic performance and welfare indicators to better reflect well-being)	**6-7**
L2	• Answer may not be well-developed and may also contain minor inaccuracies • Answer may also only be one-sided i.e. discussion only on material/non-material well-being, not able to recognize limitations of real GDP in reflecting well-being • One-sided discussion on either economic or social indicators in its ability to reflect well-being. • Some use of case information to support explanation	**4-5**
L1	• Smattering of points • Significant conceptual errors • Superficial listing of the limitations of GDP as a measure of standard of living without any significant discussion. i.e. Answer simply list a limited range of potential problems without either explanation or clear focus.	**1-3**
Evaluation		
E2	For an answer that provides a well-reasoned judgement, explaining why real GDP may fully reflect well-being of citizens.	**2-3**

E1	For an answer that gives unsupported and unexplained evaluative statements.	**1**

Section B: Case Studies

- **Case Study 2: A Tale of the Two World's Superpowers (2020 NYJC Prelims)**

Suggested Answers:

(a) With reference to the data provided, explain how you would expect the size of the multiplier to differ between the US and China. [3]

- Define multiplier size: The multiplier size shows how an initial injection into the economy causes a bigger final increase in national income. [1]
- Apply data: From tables 2 & 3, since the gross savings (% of GDP) and import of goods and services (% of GDP) for China is higher than that of the US, it means that there are greater withdrawals from the circular flow in China. Hence, the MPS and MPM would be larger for China. [1]
- The size of k is affected by MPS, MPT and MPM. k = 1/MPW where MPW = MPS + MPT + MPM. Applying the formula, the multiplier size of China would be smaller than the US. [1]

(b) With reference to Extract 6 and the use of a diagram, explain the extent of the impact of the US-China dispute on the Asian economies. [4]

- Extract 6: US-China dispute (trade war) → slower growth in both countries → US and Chinese consumers may experience slower growth in income and more pessimistic about the economic outlook → US and Chinese consumers demand lesser from Asia [1]
- Large fall in Asia's export revenue since "Asia pacific countries are export reliant" → large fall in AD → severe fall in RNY. [1]
- Since output has fallen, demand for labour falls since it is a derived demand, leading to a rise in unemployment [1]
- Well-labelled AD/AS diagram [1]

(c) (i) Explain what the values for the Gini coefficient mean. [1]

The value of Gini coefficient ranges between 0 and 1. 0 means perfect income equality and 1 means perfect income inequality. [1]

(ii) With reference to Extract 7 and Table 4, explain how automation can affect China's Gini coefficient from 2015 to 2017. [4]

- Automation → increase demand for high skilled workers → increase wages of skilled workers [1] **OR** benefit firms who benefit from increase in productivity brought about by automation → increase in profits of business owners
- Automation → replace lower skilled workers (Extract 7: "Such lay-offs can also be seen in healthy manufacturing companies especially among the low-skilled elderly workers and under-educated young workers") → reduce demand for lower-skilled workers → lower wages [1]
- Widening wage gap [1] → worsen Gini coefficient from 0.462 to 0.467 from 2015 to 2017 [1]

For understanding (diagrams not required for full marks):

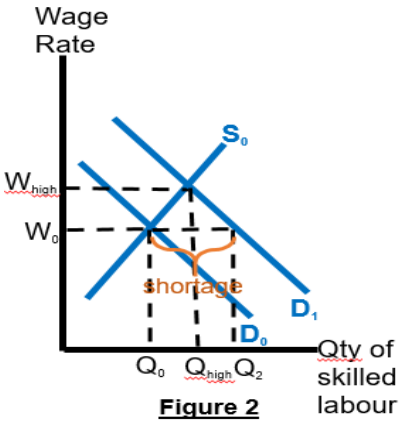


Figure 2

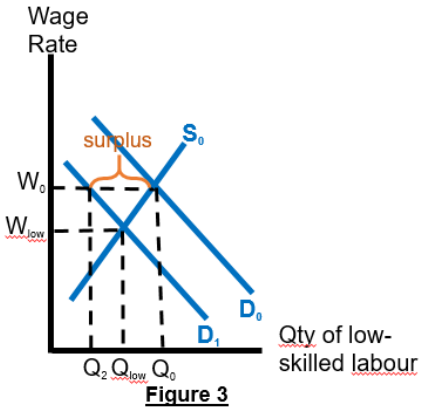


Figure 3

(d) Using economic analysis and based on the evidence provided, assess whether citizens in China have a higher standard of living than those in the US. [8]

Introduction

- Define material and non-material SOL: **Material standard of living** is defined by the quantity and quality of goods and services accruing to each person in the country while **non-material standard of living** measures the intangibles and focuses on the quality of life.

- Outline economic issues in China:
- Structural unemployment (Ext 7)
- High income and educational inequality across regions (Ext 7)
- Slowing growth (Figure 1)

- Economic issues in US:
- Slowing growth (Figure 1 & Ext 8)
- African-American economic gap (Ext 9)

Thesis (China's SOL higher)

- China has higher real GDP growth rates in 2018 (use Fig 1 & Table 1 to calculate real GDP growth rate = nominal GDP growth rate – inflation rate) → rate of increase in RNY is higher in China→ rate of increase in output of goods and services is higher in China → allow more Chinese to be lifted out of poverty and consume a larger quantity of goods and services → higher material SOL in China
    - However, no information on population growth is available. If population growth rate exceeds real GDP growth rate, real GDP per capita would fall and an average citizen may not be better off since the economic gains accruing to an average citizen would be lesser
- China has lower Gini coefficient than US (Table 1) → income is more equally distributed than US → the rise in income accrues to majority of population and

not only the minority rich → higher material SOL in China. This is further corroborated by evidence of income inequality in US where "African-Americans still suffer from a large economic gap" (Ext 9).

Anti-thesis (China's SOL not higher)

- Life expectancy in China is lower (Table 1) → Chinese may have limited access to quality healthcare services → non-material SOL of China may be lower than US
- China's unemployment rate is higher than US (Table 1) → larger percentage of unemployed Chinese who do not have the income and purchasing power to consume goods and services → material SOL of China is lower than US.

Evaluative Judgement

Stand: Overall, the SOL of US is higher than China.

Substantiate: Although China may have a higher GDP growth rate, it only provides an indication of the pace of growth, and not the actual GDP figures. In fact, it is likely that the absolute value of real GDP is higher in US. Furthermore, although China appears to have better income distribution, due to the massive size of the country, data collected though sampling may not accurately reflect the income distribution, especially in the rural regions of China. Furthermore, based on the data given for a few years, it is difficult to make an assessment of how the standard of living of the 2 countries has changed with time and how it will change over time. Thus, although the SOL of US may be higher than China presently, the conclusion may not hold true in future.

Mark scheme:

L2	• Answer is **relevant to question requirements** and covers sufficient **breadth**:
	  ○ Covers both material and non-material SOL
	  ○ Explain that SOL of China may be higher or lower than US, depending on indicator chosen
	  ○ Recognise limitations of indicators provided
	• Answer has sufficient **depth**:
	  ○ rigorous and detailed economic analysis that demonstrate strong understanding of material and non-material SOL indicators
	  ○ **relevant** and **precise** use of economic concepts
	• Answer is **relevant to the context** of the question and applies **contextual evidences** to support the analysis.
		4–6

L1	• Answer is mostly relevant to question requirements. • Economic concepts are relevant but may contain inaccuracies. • Economic analysis is incomplete or lacks precision. • Attempts to address the context of the question but **lacks contextual evidences**.	1–3
E	Evaluative comments on whether citizens in China have a higher standard of living than those in the US.	1–2

(e) *[To revisit after the next lecture topic on macroeconomic policies]* [10]

The US has enjoyed the longest economic expansion in history since the Great Recession. However, persistent inequalities has led to economic instability and social unrest.

In view of the above, discuss whether there is a need for the US to change its economic policies in order to achieve inclusive growth.

Introduction

- Define inclusive growth: Inclusive growth indicates a rate of growth that is sustained over a period of time, is broad-based across economic sectors, and creates productive employment opportunities for the majority of the country's population. It is economic growth with benefits incurred by every section of society.
- Outline economic issues in US:
  - Slowing job growth
  - Wage stagnation
  - Economic recovery after 2008 recession
  - Inequality
- Give overview of current policies undertaken:
  - Tax cuts and additional govt spending (Ext 8)
  - Tariffs on Chinese imports (Ext 8)
  - Fed cut interest rates 3 times in 2019 (Ext 8)
  - Fostering investment in low-income neighbourhoods → opportunity zones (Ext 9)

Thesis: There is a need for the US to change its economic policies

- Current policies does not allow attainment of inclusive growth due to its limitations
  - Explain how protectionism and trade war with China will cause a "deepening downturn in a manufacturing sector" → fall in X → fall in AD → fall in RNY → likely to lead to slowdown
  - Explain that tax breaks to developers who "invest" in low income neighbourhoods may not benefit low-income residents due to the nature of investment. Investment in luxury apartment buildings rather than infrastructure such as transport networks does not improve SOL of low-income community. Also, such projects does not provide affordable housing for the low income.
- Propose alternative policies that the US could undertake to attain inclusive growth
  - LR SS-side policies: education and upskilling of low-skilled, marginalised workers to increase their productivity (e.g. through vocational skills training to meet manufacturing sector's needs) → increase LRAS → increase sustained growth yet allowing them to command higher wages due to better skills → reduce income inequality
    - EV: However, skills retraining takes time and substantial government spending
  - Progressive income tax and wealth tax to redistribute income, especially when low-income workers are "under-represented in

business and equity ownership", suggesting that economic gains are likely to accrue only to the minority rich.

- EV: However, this requires the government to correctly identify those who really require these transfer payments. Due to the possibility of under-reported income and non-reported work, it might be difficult for the government to ascertain whether those who apply for the transfer payments genuinely need help.

Anti-thesis: It is not necessary for the US to change its economic policies

- Current policies are working well in attainment of inclusive growth
  - Explain how tax cuts enable growth to be achieved
    - Reduction in personal income tax → increase in disposable income → increase in purchasing power → increase in C → large increase in AD as China has large domestic market → increase in RNY → actual growth
      - EV: However, income inequality might be worsened since the higher income earners could benefit more with the cut in income tax.
    - Reduction of corporate tax → increase in post-tax profits → rise in expected profitability → increase in I → increase in AD and LRAS → sustained growth
  - Explain how increase in government spending enables growth to be achieved through rise in AD
  - With rising income, government will also be able to collect more tax revenue and redistribute it to the lower income group in the form of transfer payments
  - Such increases in both AD and AS will help China achieve sustained economic growth and inclusive growth at the same time through a reduction in income inequality.

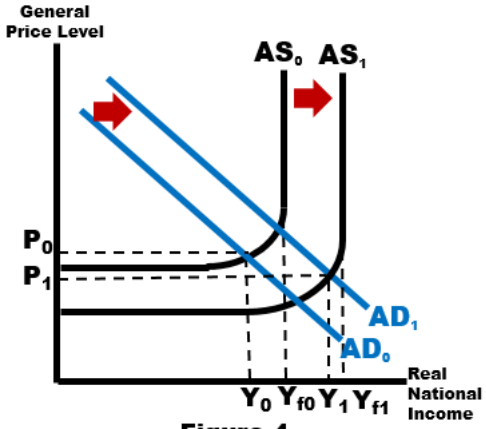


Figure 4

  - Explain how opportunity zones program can address inequality
    - Tax breaks to developers who "invest" in low income neighbourhoods → reduce post-tax profits and increase expected profitability → boost investment → increase AD and LRAS → sustained growth → increase production → increase demand for labour as it is a derived demand → reduction in unemployment → improve material SOL of people living in these neighbourhoods

Evaluative Judgement

Overall, there is a need for the US to change its policies to achieve inclusive growth. Although US has enjoyed success in attaining growth in the past decade, the economic gains accrue mainly to the rich. Although the government attempts to address inequality through the opportunity zones program to bring more investment to low-income areas, it is likely to have benefitted the capital owners more due to the tax breaks yet lead to unintended consequences such as higher land and housing prices which in turn affect the low-income residents. There is a need to understand the needs of the low-income groups and spend more resources to improve the quality of healthcare, housing and education. Overall, more has to be done to uplift the poor through long-run supply side policies.

Mark scheme:

L2	• Answer is **relevant to question requirements** and covers sufficient **breadth**:
	  ○ explain how existing policies can lead to inclusive growth (linking to both sustained growth and reducing income inequality).
	  ○ explain the relative benefits and limitations of each of these policies
	• Answer has sufficient **depth**:
	  ○ rigorous and detailed economic analysis that demonstrate strong understanding of how each policy may or may not lead to inclusive growth and hence whether there is a need for US to change its economic policy
	  ○ **relevant** and **precise** use of economic concepts (i.e. **AD-AS framework**)
	  ○ **relevant** and **clearly**-labelled diagrams (i.e. **AD-AS graphs**) to support economic analysis
	• Answer is **relevant to the context** of the question and applies **contextual evidences** to support the analysis.
		5–7

L1	• Answer is mostly relevant to question requirements but lacks comparison of the relative benefits and limitations of the measures. • Economic concepts are relevant but may contain inaccuracies. • Economic analysis is incomplete or lacks precision. • Attempts to address the context of the question but **lacks contextual evidences**. • No diagrams or relevant diagrams are used but might not be accurately explained or applied to support economic analysis.	1–4
E	Evaluative comments on the relative benefits and limitations of the measures in addressing inclusive growth. Makes an overall relevant stand: Whether there is a need for the US to change its economic policies to achieve inclusive growth.	1-3

Section C: Essay Questions

- **Essay Q1: Circular flow of income and impact of government spending on inclusive growth and unemployment**

Question 1:
a) Using circular flow of income, explain how COVID-19 impacted Singapore's economic growth and unemployment. **[10]**

b) Discuss whether an increase in government spending during COVID-19 will have a significant impact on inclusive growth and unemployment in Singapore. **[15]**

(2020 CJC Prelims)

(a) Using circular flow of income, explain how COVID-19 impacted Singapore's economic growth and unemployment. [10]

Question Analysis

- Trigger (Start point): COVID-19
- Outcome (End point): Economic growth; unemployment
- Economic tools of analysis: Circular flow of income
    - Injections
    - Withdrawals
    - The multiplier effect
- Context: Singapore; COVID-19

Introduction:

- The circular flow of income model is an economic model that illustrates the flow of money between different sectors of an economy. It shows how households and firms interact in markets for goods and services, as well as markets for factors of production such as labor and capital.
- In the model, households provide labour and capital to firms, and in return they receive income in the form of wages, rent, and profits. They then use that income to purchase goods and services from firms, creating demand for those goods and services. This creates a circular flow of income between households and firms, as well as between the different markets in the economy.
- In the real world, the economy is often represented by a 4-sector model that includes the households, firms, government and external or foreign sector. Withdrawals (W) are any income from households is not passed to firms. Withdrawals include savings (S), taxes (T) and import expenditure (M).
- Injections (J) are any spending on domestic output that are not from domestic households. Injections include investment (I), government expenditure (G) and export revenue (X)

Requirement 1: The effects of COVID-19 would lead to a decrease in injections and an increase in withdrawals.

- At the peak of the pandemic in 2020, the Singapore government implemented the Circuit Breaker in an attempt to control the transmission of the virus. The Circuit Breaker prevented any tourists from entering Singapore which resulted in **a fall in demand** for tourism related services and a fall in tourism related expenditure. This resulted in a **fall in export revenue** which resulted in a **decrease in injections**.

- At the same time, the uncertainties in future economic outlook would have **decreased the incentive for investors to invest** as they might be more risk adverse given that any investment decisions would be more likely to make economic losses. The **fall in investment expenditure** would result in a **further decrease in injections**.
- The same uncertainties in future economic outlook would have **increased the incentive for households to save** so that they could have more savings to buffer against unforeseen rainy days. Therefore, the **increase in savings would cause an increase in withdrawals**.

Requirement 2: The decrease in injections and the increase in withdrawals would result in a multiplied decrease in national income via the reverse multiplier effect, leading to a negative actual economic growth and an increase in demand-deficient unemployment.

- Equilibrium in the circular flow occurs when Total Injections = Total Withdrawals. A decrease in injections and the increase in withdrawals would create a disequilibrium as total withdrawals will be more than total injections.
- A numerical illustration will be used to explain the reverse multiplier effect. **Assume that the there is a net withdrawal of $100 million and the marginal propensity to consume (MPC) is 0.6**. MPC measures the proportion of an increase in income that a household or individual will spend on consumption rather than saving.
- With a net withdrawal of $100 million, demand for domestically produced goods and services by consumers decreased and this led to an **unplanned accumulation of inventory stocks**. As a result, firms would **reduce production** and **demand for less factor inputs** such as labour. Therefore, this caused an **increase in unemployment** due to a lack of demand for goods and services. Consequentially, there would be **lower wages** (or factor income) paid out to households, **reducing national income** by $100 million.
- Furthermore, the fall in income experienced by the households would cause them to **consume less**. With an MPC of 0.6, **induced consumption expenditure would fall by $60 million** and withdrawals would fall by $40 million.
- In the next period, the fall in induced consumption would create another unplanned accumulation of stocks. Affected firms would again reduce production and demand for less workers. This fall in demand for workers would again cause a rise in number of people unemployed. Similarly, there would be lower wages (or factor income) paid out to other households, reducing national income by a further $60 million. The reduction in income would further reduce induced consumption expenditure by $36 million, with $24 million less withdrawn.
- **The process would continue and repeat** with further rounds of fall in income and fall in induced consumption. **Equilibrium would be re-established when the total reductions in withdrawals equaled the initial increase in withdrawals at a much lower level of real national income**.

Conclusion:

- As a result of COVID-19, there was a multiplied fall in real national income which would be far larger than the initial rise in withdrawals, causing negative actual economic growth.
- The multiple rounds of fall in demand for labour had also caused an overall increase in demand-deficient unemployment.

- Therefore, there would be a need for government to implement macroeconomic policies to address negative impacts of COVID-19.

Analysis	Marks
First requirement: Explain how the events of Covid-19 would impact the Circular Flow of Income model. Candidates are required to use relevant economic analysis, specifically the Circular Flow of Income Model, to explain events of Covid-19 would impact withdrawals and/or injections. **Second requirement: Explain how economic growth and employment rate will be impacted via the reverse multiplier effect.** Candidates are required to use relevant economic analysis, specifically illustrating the reverse multiplier effect, to explain how economic growth and unemployment will be impacted.	**L3 Band [8m – 10m]** **L2 Band [5m – 7m]** **L1 Band [1m – 4m]**

(b) Discuss whether an increase in government spending during COVID-19 will have a significant impact on inclusive growth and unemployment in Singapore. [15]

Question Analysis:

- Trigger (Start point): An increase in government spending
- Outcome (End point): inclusive growth; unemployment; significance of policy
- Economic tools of analysis: AD-AS model; macroeconomic policies
- Context:
    - Singapore; COVID-19

Introduction:

- As discussed in part (a), COVID-19 has caused negative actual economic growth as well as an increase in demand-deficient unemployment.
- The negative impact of COVID-19 has been **unequal**, where some sectors such as those in the tourism and retail were more impacted than others. Therefore, the Singapore government had to implement appropriate macroeconomic policies to mitigate the short-term impact of COVID-19 while ensuring potential longer-term impact are prevented.
- Inclusive growth is defined as a rate of economic growth that is sustained over a period of time, is broad based across economic sectors, and creates productive employment opportunities for the majority of the country's population. Therefore, inclusive growth should not contribute to worsening income inequality in the country.
- The policies implemented by the government were aimed to support households, especially the low-income groups which were the most vulnerable due to job losses and loss in income to achieve a more inclusive growth and lower unemployment. Policies were also implemented to assist firms and employees to ensure that firms tried to retain their employees as well as to ensure that employees could retrain to possess relevant skills that are in demand by industries.

Requirement 1: The increase in government spending during COVID-19 could have an impact on inclusive growth and unemployment.

One of the key fiscal policies that the government implemented to support workers was the Covid-19 Recovery Grant that provided temporary financial support of up to $700 for three months who those who became unemployed due to the economic impact of COVID-19.

- The recovery grants acted as a form of **transfer payment** that seek to cushion the loss in income of those who became unemployed. This could help to **preserve the disposable income of those who became unemployed**, thereby **cushioning the drop in purchasing power** of these households, thereby **preventing a significant drop** in their **material standard of living**.
- At the same time, by cushioning the drop in disposable income among the unemployed, the government also seek to **reduce the extent of a fall in consumption expenditure** in order to **prevent a sharp fall in aggregate demand (AD)** due to COVID-19. This could help to **reduce the fall in real national output (RNY)**, thereby **reducing the extent of negative economic growth**. At the same time, when **AD fell by a lesser extent**, the demand for goods and services would fall by a lesser extent, thereby **firms would retrench fewer workers** which would help to **reduce the extent of demand deficient unemployment**.
- As mentioned, the negative economic impact of COVID-19 was uneven and **lower income workers** who often worked in lower skilled jobs were **more likely to be retrenched** than higher income workers who often worked in higher skilled jobs. Therefore, transfer payment would also help to **prevent the income gap from widening** between those who were unemployed and those who remain employed. This could help to ensure that **income inequality does not widen significantly during the pandemic**. This would ensure that the government was still **on track to achieve inclusive growth**.

In addition, the government also implemented a supply-side policy called the Job Support Scheme (JSS) which **provided wage supports** for employers with the aim of helping firms retained employees during the pandemic.

- The wage support would **lower the cost of production** of firms which **increases the short aggregate supply (SRAS)**. With cheaper cost of production, **prices of goods and services would decrease** which **increases their quantity demanded**. This would signal firms to increase production which would increase the RNY, thereby helping to **cushion the fall in RNY** due to COVID-19. With an increase in production of goods and services as well as a subsidy on the cost of labour, firms would also be **less likely to retrench workers**, thereby **reducing the extent of demand-deficient unemployment**.

Lastly, another supply-side policy that the government implemented was the SG United Jobs and Skills package which focused on providing avenues for those who were retrenched during COVID-19 to find new jobs, learn new skills and be retrained.

- One of the key measures implemented by the government was to create **temporary new jobs in the public sector** in areas that were needed to support the management of COVID-19 such as safe distancing enforcement officers, nurses, and swabbers. This

could help **to reduce the number of people being unemployed** as the public sector would then be able to **absorb a percentage of people that were retrenched** from sectors like aviation and tourism that were hit hard because of COVID-19. This could help to **reduce the extent of demand-deficient unemployment**.

- At the same time, government paid companies to provide **traineeships** to mid-career workers who were affected by COVID-19 so that they could **pick up new skills in expanding and sunrise industries**. With more relevant skills, it would ensure there would be a better match in terms of the skills demanded by these industries as well as skills possessed by the works. This would help them to find new jobs in these industries that demands new skills, thereby **reducing structural unemployment**. At the same time, **wages offered in these new jobs could be higher**, thereby **reducing the income gap** within the economy which helps to ensure **that inclusive growth would be achieved**.

In-body evaluation:

- The negative economic impact of COVID-19 on Singapore were likely to be severe. One of the hardest hit sectors was Tourism due to the global lockdowns. Tourism is one of the key service sectors which accounted for over 4% of Singapore's GDP. The global nature of the supply chain disruptions as well as the limited supply of foreign workers due to global lockdowns also affected the Construction sector which accounted for over 3% of Singapore's GDP. As such, with numerous key sectors suffering from the a lack of demand and hence production, Singapore would suffer from a significant decrease in real national output and hence negative economic growth as well as a significant increase in unemployment and income inequality.
- Given that the government implemented a range of policies in response to the severe economic impact from COVID-19, the **policies would likely have played a significant role in mitigating the extent** of an increase in unemployment and income inequality.
- For example, through supply-side policies like **Job Support Scheme** that tried to preserve jobs and the **SG United Jobs and Skills package** that tried to provide avenues for retrenched workers to retrain themselves to take on new jobs, the government ensured that it **addressed both demand-deficient and structural unemployment**, thereby ensuring that the number of people who were unemployed could be reduced as much as possible. The **combination of policies would thus play a significant role in mitigating the impact of unemployment**. This would also help to **reduce the extent of income inequality** given that less people were unemployed.

Requirement 2: The increase in government spending during COVID-19 might have a limited impact on inclusive growth and unemployment.

Government's spending on training to help unemployed workers to reskill **may not be effective** if the **unemployed workers are not receptive** of the programmes. This could be because the unemployed workers might have **imperfect information** with regards to the schemes available and thus not take full advantage of it. They **might perceive that the schemes were not helpful** to them as these schemes were often temporary and the remunerations from such traineeships might not be sufficient for these workers and their families so they would prefer to find a full-time job from the onset rather than to settle for a temporary traineeship.

In addition, given the **severe economic impacts** of COVID-19 and the **uncertainties** of when the pandemic would end due to the ever-evolving virus and its new variants, there would likely

be a **prolonged pessimistic outlook of the economy**. As such, even if the government tried to increase consumption expenditure via transfer payment to increase AD, there might be a **limited increase in AD** as consumers might prefer to save the funds as a buffer against unforeseen rainy days. As such, an increase in government spending might have a **limited reduction in demand-deficient unemployment**.

Finally, economic issues such as the widening of income inequality as well as structural unemployment are present even before COVID-19. The pandemic simply exacerbated the extent of the issues. As such, policies such as transfer payment and Job Support Scheme were simply **reactive measures** that aimed to mitigate the current economic problems **without trying to address the root cause of the issues**. Therefore, the increase in government spending **might not have a significant impact** on inclusive growth and unemployment in the long run given that it would not address the underlying issues that existed before COVID-19.

Conclusion (Evaluation):

Stand + Substantiation:

- The impact of COVID-19 along with the drastic measures that the Singapore government took to contain the pandemic have brought about significant economic problems. As such, the policies that the government have implemented certainly helped in reducing the extent of macroeconomic problems such as negative growth, demand-deficient unemployment along with income inequality**. However, time is needed** for the economy to bounce back from pandemic and the government must also ensure that there are **polices in place for the economy to leverage on the global recovery to achieve further recovery**.

Elaboration:

- Therefore, to look beyond the mitigation of the negative economic impacts from COVID-19, the **government should do more to also prepare the economy to take advantage** of the opportunities that will present itself once the world is reopened. There should be more policies like the SG United Jobs and Skills Package which not only helps to mitigate unemployment during the pandemic, but it also helps to prepare the mid-career workers to take advantage of the sunrise/expanding industries when the economy recovers by using the interim period to build up their skills. Therefore, this will help **to reduce the problem of structural unemployment as well as income inequality in the long term**, thereby **achieving the aim of inclusive growth**.

Analysis	Marks

First requirement: Explain how the increase in government spending might have an impact on inclusive growth and unemployment. Candidates are required to use relevant economic analysis (specifically AD/AS) to explain how the increase in government spending could achieve inclusive growth and low unemployment. **Second requirement: Explain how the increase in government spending might have a limited impact on inclusive growth and unemployment.** Candidates are required to use relevant economic analysis (specifically AD/AS) to explain the limitations of using government spending to achieve inclusive growth and unemployment.	**L3 Band [8m – 10m]** **L2 Band [5m – 7m]** **L1 Band [1m – 4m]**

Evaluation		**Marks**
E3	For an answer that uses analysis and clear criterion/criteria to support an evaluative judgment to determine the impact of government spending on achieving inclusive growth and unemployment.	4-5
E2	For an answer that makes some attempt at an evaluative judgment to determine the impact of government spending on achieving inclusive growth and unemployment.	2-3
E1	For unexplained evaluative statement(s).	1

Section C: Essay Questions

- **Essay Q2: Economic growth and standard of living**

RVHS 2021 JC2 H2 Paper 2 Question 6

While Singapore's national income and labour productivity grew over the past decade, she confronts the challenges of a shrinking workforce and declining productivity growth.

a) Explain how the challenges above will affect a country's economic growth. [10]
b) Discuss the extent to which economic growth determines the standard of living in Singapore. [15]

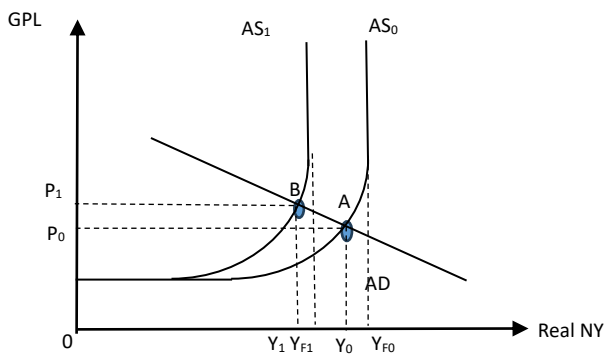
Question (a)

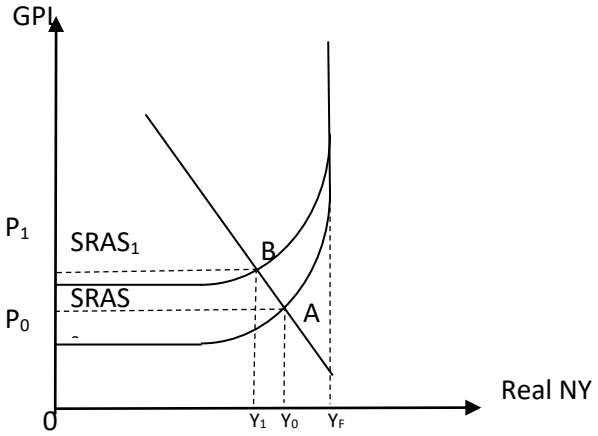
Explain how the challenges above will affect a country's economic growth. [10]

In other to better explain the issues in greater detail, consider the following questions to allow wider scope of analysis for each of the 2 challenges raised.
i) Explain how shrinking workforce will affect a country's economic growth. [10]
ii) Explain how declining productivity growth will affect a country's economic growth. [10]

*Note: answering the question on having **BOTH challenges** - of 'shrinking workforce' and 'declining productivity growth' **in 1 question** , students would **need to choose one of the points from each of the impact of 'shrinking workforce' and 'declining productivity growth' respectively** as their R1 and R2 due to time constraint.*

(ai) Explain how shrinking workforce will affect a country's economic growth. [10]	
Introduction *Explain and define question key words*	A country's economic growth is defined as the rate of increase in real national income over a period of time, usually one year. The challenges of a shrinking workforce can affect a country's economic growth adversely. Given Singapore's falling birth rates and ageing population, the issue of shrinking workforce can be applicable to this country as well.
Requirement 1: Explain the impact of shrinking workforce on LRAS and hence economic growth (EG) *Explain how the LRAS is affected via the change in productive capacity*	*[Topic sentence]* Shrinking workforce may lead to negative actual EG and potential EG. **(Impact on LRAS)** • Shrinking workforce, there might also be a fall in quantity of labour. If this is the case, a fall in quantity of resources will result in a fall in the maximum output that the country can produce. This leads to a fall in productive capacity as long-run AS falls from $LRAS_0$ to $LRAS_1$ (leftward inward shift) in Figure 1a, assuming ceteris paribus. *(Note students can also choose to only draw a combined effect diagram after explanation of R1 and R2, see Figure 2 instead)*

Explain how the change in LRAS affects the full employment output level, Yf *Explain how the change in LRAS affects the general price level via the firms' passing on the higher unit COP to consumers*	 Fig 1a Fall in LRAS due to decrease in quantity of labour **(Linking impact on LRAS to EG – analytical)** • The fall in productive capacity and LRAS means that potential output that the country can produce decrease from Y_{F0} to Y_{F1}. Hence there is negative potential EG. • Assuming the economy is operating near full productive capacity, $Y_{F1,}$ firms will likely pass the higher cost of production of the increasingly scare resources to households in the form of higher prices leading to a rise in GPL in P_0 and P_1. • This higher GPL will reduce spendings by economics agents, as economics spent less, this can be represented by a shift along the AD curve as demand for goods and services fall, *(These are represented by a movement along the aggregate demand (AD) curve from point A to B when LRAS shifts to the left.)* leading to negative actual EG from Y_0 to Y_1. • GPL will continue to increase until the new equilibrium price P_1 is reached where AD is equals to AS_1. • The fall in goods and services being produced and real national output will fall from Y_0 to Y_1. When there is a fall in real national output, Singapore experiences negative actual economic growth. • Should AD increases in the future as the potential of rise in RNY has fallen to $Y_{F1,}$ hampering the rise in the possible actual EG in the long run. [Link] Thus, shrinking workforce could lead to a negative actual and potential EG and even limit the actual EG in the long run.
Requirement 2: Explain the impact of shrinking workforce on SRAS and hence economic growth (EG) *Explain how the SRAS is affected via the change in cost of production* *Explain how the change in SRAS*	**(Impact on SRAS)** • With a shrinking workforce, there will also be a fall in quantity of labour, where greater number of senior workers are retiring and leaving the workforce compared to younger workers entering the workforce. Assuming no change in the number of foreign workers working in SG, there will be a shortage of workers, leading to an increase in wages as firms compete for these workers. • Since labour is a factor input for production, an increase in wages will lead to a rise in the average cost of production at each and every output level • Assuming this higher wage is not matched by similar increase in productivity. This will thus causing short-run aggregate supply (SRAS) to fall from $SRAS_0$ to $SRAS_1$ as shown in Figure 1b.

affects the real national income via the firms' production volume *Explain how the change in SRAS affects the general price level via the firms' passing on the higher unit COP to consumers*	*(Note students can also choose to only draw a combined effect diagram after explanation of R1 and R2, see Figure 2 instead)*  Fig 1b: Fall in SRAS due to increase in wages **(Linking impact on SRAS to EG – analytical)** • When there is higher average COP, firms reduce SRAS, creating a <u>shortage and pass this higher average COP to the consumers in the form of higher price.</u> Thus, there is an increase in GPL. • <u>This higher GPL will reduce spendings by economics agents, as economics spent less, this can be represented by a shift along the AD curve as demand for goods and services fall,</u> *(These are represented by a movement along the aggregate demand (AD) curve from point A to B when LRAS shifts to the left.)* leading to negative actual EG from Y_0 to Y_1. • <u>GPL will continue to increase until the new equilibrium price P_1 is reached where AD is equals to $SRAS_1$.</u> • The fall in goods and services being produced and real national output will fall from Y_0 to Y_1. When there is a fall in real national output, Singapore experiences negative actual economic growth.
(Note: Students are encouraged to draw a combine diagram of SRAS and LRAS to better understand the full impact of issue through the ADAS framework, see Figure 2 below. However, for students who have difficulty combining the 2 impacts mentioned in R1 and R2, can consider drawing 2 diagrams, figure 1a AND figure 1b for clarity in their answer explained)	

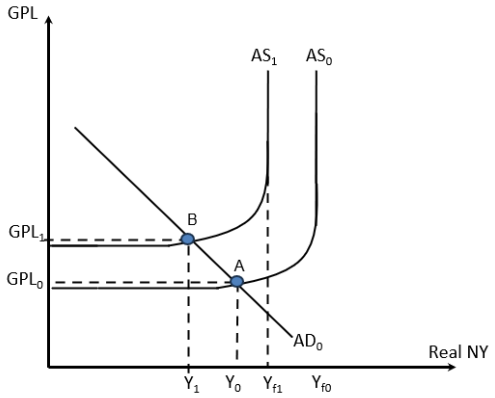


Figure 2: Fall in LRAS due to decrease in quantity of labour and fall in SRAS due to increases in wages

Conclusion	Hence the challenge of 'shrinking workforce' will certainly result in adverse impact on an economy's actual and potential EG.

Check – in Question:

Consider what is the difference between 'rising productivity growth' and 'declining productivity growth?

(Suggested response: 'Rising productivity growth' suggests that the productivity growth rate is increasing while 'declining productivity growth' suggests that the productivity growth rate despite increasing, it is increasing at a slower rate.)

ii) Explain how declining productivity growth will affect a country's economic growth. [10]

(Consider how to adopt the R1 and R2 explanation from Qn (ai) to this context of 'declining productivity growth')

Introduction *Explain and define question key words*	• Productivity is defined as the amount of output per unit of input. With declining productivity growth, it means that the amount of output per unit of input will be increasing at a decreasing rate.
Requirement 1: Explain the impact of shrinking workforce on LRAS and hence economic growth (EG) *Explain how the LRAS is affected via the change in productive capacity*	*(refer to the explanation in (ai) – on shrinking workforce for similar explanation)* **(Impact on LRAS)** • With a declining productivity growth, the increase in quality of factors of production like labour and capital will be slower and as such, this will result in a smaller increase in the maximum output that the country can produce. Hence a slower growth in productive capacity. • Long-run AS will increase from $LRAS_0$ to $LRAS_1$, instead of $LRAS_2$,as seen in figure 3 had productivity increase at the same rate. i.e. the economy's full productive capacity, $Y_{F1,}$ **(Linking impact on LRAS to EG – analytical)** • In the presence of more spare and better quality resources → firms' unit cost of production is lower, although is lower to a smaller extent → firms will likely pass the lower unit cost of production to

- *Explain how the change in LRAS affects the full employment output level, Yf*
- *Explain how the change in LRAS affects the general price level via the firms' passing on the higher unit COP to consumers*

households in the form of **lower prices leading to a fall in GPL from P_0 to P_1.**

- **The above drop in general price level is a smaller extent, as compared to without a decline in productivity growth, which may lead to a larger drop in GPL from P0 to P2.**
- This lower GPL will raise spendings by economic agents as they spent more since goods and services become cheaper, causing demand for goods and services to rise. *(All these are represented by a movement along the aggregate demand (AD) curve from point A to B when LRAS shifts to the right.)* leading to rise in actual EG from Y_0 to Y_1.
- GPL will continue to decrease until the new equilibrium price P_1 is reached where AD is equals to AS_1.
- The rise in goods and services being produced and real national output will rise marginally from Y_0 to Y_1. When there is a small rise in real national output, Singapore experiences small actual economic growth.
- Thus, beside the smaller/ marginal actual EG. The potential output will increase by a smaller extent from Y_{F0} to Y_{F1} instead of Y_{F2}. This means that there is slower potential EG.

[Link] Thus, slower productivity growth could lead to slower actual and potential EG.

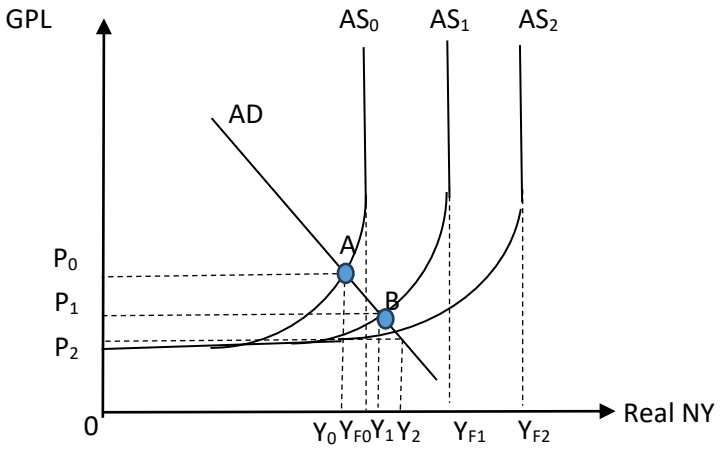
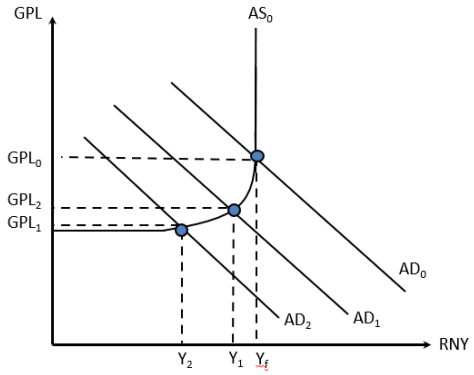
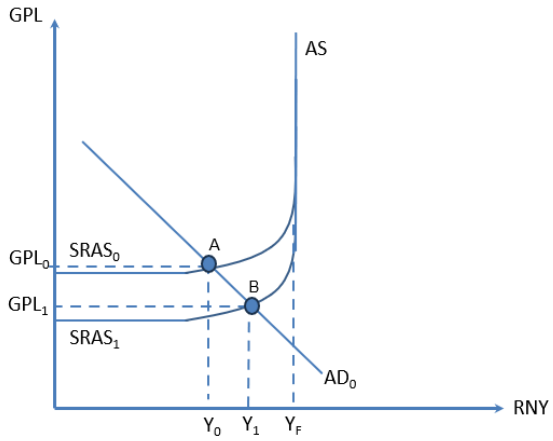


Fig 3 Fall in LRAS due to decrease in quantity of labour

Requirement 2: Explain the impact of 'declining productivity growth' on AD and hence economic growth *Explain which component(s) of the AD is affected* *Explain how the change in AD affects the real national income via the multiplier process* *Explain how the change in AD affects the general price level via the competition of resources*	**(Impact on AD)** • With a decline in productivity growth, it is less attractive to invest as firms may decide to relocate to other countries with relatively lower cost of production, causing both domestic and foreign direct investment to fall, a decrease investment. • This can lead to a decrease in AD as shown by AD decreasing from AD_0 to AD_1 in Figure 4a, thus decreasing RNY from Y_0 to Y_1, **(Linking impact on LRAS to EG – analytical)** • *[reverse multiplier process]* While there may be decrease in AD, the decrease in AD still lead to multiple decrease in RNY due to the reverse multiplier effect. • *As f*irms decrease production by laying off some factors of production including labour. • In turns, households receive less factor income also cut down on its domestic goods spending. This results in a fall in **induced consumption**, thus a decrease in AD (from AD1 to AD2) and firms again respond by laying off more factors of production given the unplanned rise of their inventory stocks. • Assuming the economy is operating with spare capacity, the initial fall in AD will eventually trigger further fall in RNY due to reverse multiplier effect. • The economy is thus experiencing negative actual EG  Figure 4a: Fall in AD due to fall in induced spendings.
OR: Explain the impact of 'declining productivity growth' on SRAS and hence economic growth (EG) *Explain how the SRAS is affected via the change in*	**(Impact on SRAS)** • With a declining productivity growth, there will also be a slower in the fall of in average cost of production at each and every output level • This will thus causing short-run aggregate supply (SRAS) to increase at a smaller rate from $SRAS_0$ to $SRAS_1$ as shown in Figure 4b. **(Linking impact on SRAS to EG – analytical)** • When there is smaller fall in average COP, firms small rise in SRAS, creating a surplus and pass this lower average COP to the consumers in the form of lower price. Thus, there is an decrease in GPL. • This lower GPL will increase spendings by economic agents as goods and services become cheaper, causing demand for goods

cost of production *Explain how the change in SRAS affects the real national income via the firms' production volume* *Explain how the change in SRAS affects the general price level via the firms' passing on the higher unit COP to consumers*	and services to rise. *(All these are represented by a movement along the aggregate demand (AD) curve from point A to B when SRAS shifts to the right.)* leading to actual EG from Y_0 to Y_1. • GPL will continue to decrease until the new equilibrium price P_1 is reached where AD is equals to $SRAS_1$. • The rise in goods and services being produced and real national output will rise from Y_0 to Y_1. When there is a rise in real national output, Singapore experiences smaller actual economic growth.  Figure 4b: slow rise in SRAS due to declining productivity growth *(Note students can also choose to either to explain the impact on SRAS or AD given 'declining productivity growth')*
Conclusion	Conclusion: Overall impact of shrinking workforce & declining productivity growth • Putting both challenges together, there would be negative actual EG ○ As the fall in AD due to declining productivity growth and SRAS due to shrinking workforce lead to fall in RNY respectively → leading to negative EG • Putting both challenges together, the impact on potential EG may be uncertain as it depends on the relative shift of SRAS and AD ○ Assuming that the effects caused by the shrinking labour force (fall in LRAS) outweighs that of the declining productivity growth (slower increase in LRAS), there will be an overall fall in potential output and hence negative potential economic growth. ○ On the other hand, if the effects of declining productivity growth (slower increase in LRAS) outweigh that of the shrinking labour force (fall in LRAS), then potential output increase and hence there is potential economic growth, although at a smaller rate.

Analysis	**Marks**
First requirement (R1): • Explain the impact of shrinking workforce on economic growth by linking both actual and potential economic growth.	**L3 Band [8m – 10m]**

• Analytical answer should also **explain how the change in AS impact RNY and thus economic growth**.
 	
Second requirement (R2):
• explain the impact of declining productivity growth on economic growth by linking both actual and potential economic growth.
• Analytical answer should also explain
  ○ how the **change in AS impact RNY and thus economic growth**
  ○ how the **change in AD led to multiplied fall in RNY using multiplier effect (in – brief)** and its impact on actual EG
	L2 Band [5m – 7m]
	
	L1 Band [1m – 4m]

Question (b)

Discuss the extent to which economic growth determines the standard of living in Singapore. [15]

Introduction

- A country's standard of living (SOL) can be determined by both material and non-material aspects.
- Material SOL measures the amount of goods and services that individuals within the country have available for consumption while non-material SOL involve indicators like environmental factors (e.g. pollution) and socio-economic factors (e.g. life expectancy, stress-related illnesses, etc).

Requirement 1 (argument): Economic growth determines the standard of living in Singapore

[Topic sentence] real EG could determine the SOL in Singapore

- As part a defined, a country's real actual economic growth is defined as the rate of increase in real national income over a period of time, usually one year. As such, there is an increase in real national income as actual economic growth is achieved.
- In the case of Singapore, the rate of increase in real NY is likely to be higher than the rate of increase in population size due to falling birth rates, which is also reiterated by the shrinking workforce as mentioned in the preamble. As such, this will lead to an increase in real NY per capita.
- Higher real NY → higher real disposable income & purchasing power → more goods and services can be enjoyed by the average Singaporean, and this will improve the current material SOL in Singapore.
- At the same time, it is much easier for a growing economy to care for its less fortunate citizens than it is for a stagnant economy. When there is economic growth, there is an increase in income levels experienced by households and firms, and this will increase the tax revenue that the Singapore government can collect through personal income tax, goods and services tax and corporate income tax. With a higher tax revenue, some can be redistributed to the lower-income group, and this will suggest that majority of the population are able to consume more goods and services, thus increasing their material SOL.
- With higher NY per capita, non-material SOL can also be improved as Singaporeans can afford higher quality healthcare that treats illness and reduce sufferings. Thus, enjoy an increase in life expectancy and hence quality of lives.
- If the economic growth is due to productivity-driven growth, where Singapore emphasized on supply-side policies like education and training to counter the increasing burdens of

shrinking workforce, these initiatives could help to create employment opportunities and also increase the wages of Singaporeans as their productivity increases. This higher wage helps to increase the amount of goods and services that Singaporeans can afford and thus, improve their material SOL. As workers' productivity increases, they might spend less time on work to produce the same amount of output. This frees up more time for leisure, which improve their non-material SOL in the future too.

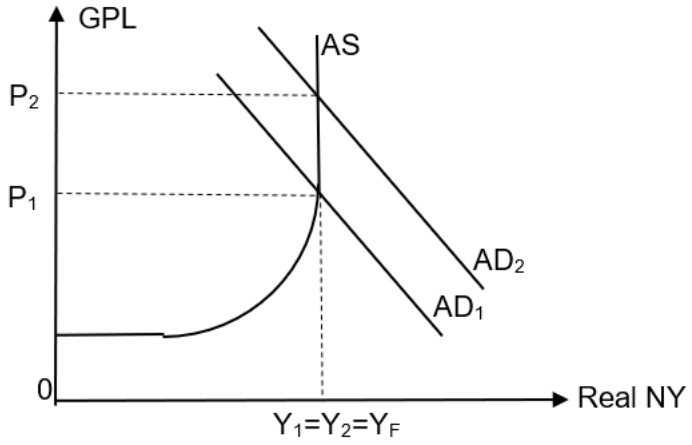
[Link] Thus, the higher EG could determine the standard of living in Singapore.

Requirement 2 (counter argument): Economic growth may not be able to determine the SOL in Singapore

[Topic sentence] EG may not be able to fully determine the SOL in Singapore

- While actual EG may illustrate higher SOL, it may not be a complete illustration of SOL.
- **EG does not show working hours**
  - A higher actual EG does not show the number of working hours of workers in SG. In fact SG is known to be the most overworked country in the world.
  - Actual EG may be due to workers working longer hours. Longer working hours → less time for leisure and rest → more stress → quality of life & non-material SOL fall.
- **EG does not show the SOL of specific income group**
  - Furthermore, EG only shows the general picture of SOL in the country. It does not show the level of SOL of certain income group.
  - While there is increase in real national income and real actual EG, low-income and low-skilled group may not benefit from this EG. If the EG is driven by growth in the pharmaceutical sector or high-skilled sector, low-skilled workers may be left out from the benefits of EG.
  - Thus, EG may not be inclusive. This means that low-income group may see a stagnant or even falling income, if their jobs are replaced by technology at the same time. Hence, their material SOL may not necessarily increase.
- **Nominal EG may not be able to determine SOL**
  - Inflation is included in the measurement of nominal EG. This means that nominal EG has been inflated.
  - For example, when AD1 increase to AD2, real national output remains at Yf. There is no real actual EG. But there is still nominal EG due to inflation.
  - When real EG is zero, real national output is constant. Assuming no change in the population size, real national income per capita is constant and there is no increase in real purchasing power. Hence amount of goods and services that can be consumed is constant. There is no increase in material SOL despite nominal EG.
  - So, nominal EG may not give determine the SOL of SG.

[Link] Thus, SOL is not comprehensive and accurate enough to determine the SOL of SG.



Conclusion: identify the extent

EG is only able to determine SOL to a limited extent.

- For EG to be able to accurately determine the SOL, economists must use real EG data. Nominal EG data would not be able to provide accurate information on the real purchasing power and hence SOL of Singapore. Real EG would be a better indicator to determine SOL that nominal EG.
- Even if real EG data is provide, this indicator alone would not be able to provide a comprehensive illustration of SOL. There are many aspects of SOL. So real EG alone is not sufficient to determine SOL.
- A composite indicator might be better than just relying on a single indicator. Composite indicator such as HDI might be a better indicator than real EG.
    - HDI includes (1) life expectancy index, (2) education index and (3) GNI index in PPP$
- Thus, a composite indicator would be a more accurate and comprehensive than EG in determining the SOL.

Analysis	**Marks**
First requirement: explain how economic growth determine SOL Candidates are required to use relevant economic analysis to explain how economic growth determine SOL. **Second requirement: explain that economic growth may not be able to fully determine SOL** Candidates are required to use relevant economic analysis to explain that economic growth may not determine SOL.	**L3 Band [8m – 10m]** **L2 Band [5m – 7m]** **L1 Band [1m – 4m]**

E3	For an answer that uses analysis to support an evaluative judgment to determine the extent to which economic growth determines the SOL in Singapore.	4-5
E2	For an answer that makes some attempt at an evaluative judgment to determine the extent to which economic growth determines the SOL in Singapore.	2-3
E1	For an unexplained evaluative statement(s).	1

Section C: Essay Questions

Essay Q3: Causes of negative inflation and importance of various macroeconomic aims

3 Singapore's headline inflation turned negative with authorities expecting inflation to remain subdued on the back of lower oil prices and impact from the COVID-19 outbreak. Weak labour market conditions also dampened consumer demand, thus capping price increases for discretionary goods and services.

Source: *Channel News Asia*, 26 May 2020

(a) Explain **one** internal factor and **one** external factor that are likely to have contributed to negative inflation in Singapore. [10]

(b) Discuss the view that governments should pursue price stability over the other macroeconomic aims. [15]

Part (a) Question Interpretation

Command phrase	*Explain*	Make clear the theory behind the Cause-and-Effect relationship and explain thoroughly, with clear analysis of how the cause (factor) leads to the effect (negative inflation).
Content	*Requirement 1: One internal factor that contributed to negative inflation*	
	Requirement 2: One external factor that contributed to negative inflation	
Context	*Singapore*	Analysis to be based on Singapore, taking into account its characteristics and/or context as mentioned in the preamble.

The answer requires a thorough explanation of the causes of falling GPL in Singapore. A rigorous analysis should clearly identify which is a cause that arises domestically and which arises externally, before using AD/AS analysis and diagrams to explain how they lead to falling GPL. Answers could use information in the preamble to explain the possible causes.

Introduction

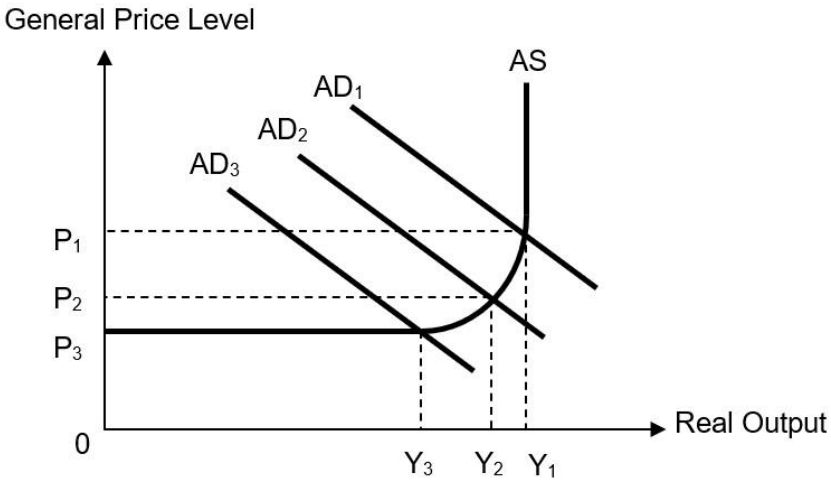
- Negative inflation or falling general price level (GPL) in Singapore can be caused by internal or external factors.

- Internal factors are those that arise domestically within Singapore while external factors arise beyond Singapore.

Body 1: Explain one internal factor that could lead to negative inflation

- One internal factor that could have led to negative inflation in Singapore is <u>falling wages due to weak labour market conditions</u>.
- Due to the lockdowns and travel bans imposed because of the pandemic, domestic economic activity declined. Uncertainty and fears regarding how long the pandemic may last, domestic consumers and firms may be pessimistic about their future incomes, jobs, and profits respectively. As a result, domestic consumers cut back on consumption expenditure (C) while firms cut back on investments (I).
- A decrease in AD leads to an accumulation of inventory stocks, this signals to the firms to reduce their output, leading to a decrease in real national output (RNY)
- At the same time, as demand for goods and services decreases, there is a decrease in competition for scarce resources e.g. labour. This leads to surpluses in the labour market which drives down wages of labour.
- This fall in real incomes in a weak labour market leads to a fall in purchasing power, causing consumers to reduce their induced consumption expenditure (C).
- The fall in C leads to a fall in AD from AD1 to AD2 in Figure 1. This triggers the reverse multiplier effect where there are multiple rounds of reductions in income-induced consumption, causing a multiplied fall in AD to AD3.
- Assuming the economy was near or at full employment output initially, there will be a fall in GPL from P1 to P3, leading to negative inflation in Singapore.

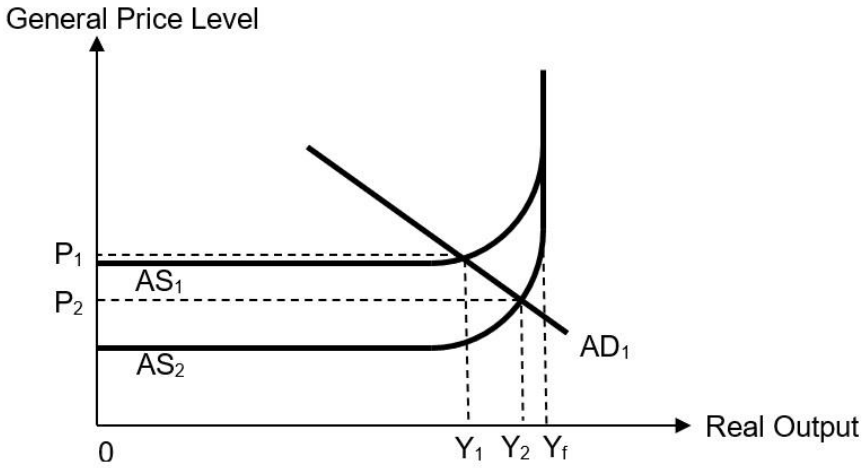
Figure 1: Negative inflation caused by weak labour market conditions



Body 2: Explain one external factor that could lead to negative inflation

- One external factor that could have led to negative inflation in Singapore is the <u>falling global oil prices</u>.
- Singapore imports oil which is used to fuel transportation and generate electricity, and is a key factor input in the production of many products, e.g. plastics used in clothing, electronics, and more.
- The fall in global oil prices leads to an economy-wide fall in cost of production in Singapore, causing SRAS to increase and shift downwards from AS1 to AS2.
- The increase in SRAS will decrease the GPL as firms pass on the fall in COP in the form of lower prices, leading to fall in general price level.
- Given the pessimistic economic outlook and reduction in economic activities, it is likely that spare capacity was present in the Singapore economy. Since the economy was initially producing below the full employment output, the increase in SRAS causes a fall in GPL from P1 to P2, thus leading to negative inflation in Singapore.

Figure 2: Negative inflation caused by falling global oil prices



Conclusion

- In summary, falling GPL in Singapore could be caused by a variety of internal and external factors, such as weak labour market conditions or pessimistic economic outlook by consumers and firms.

<u>Mark scheme</u>

Level	Knowledge, Application/Understanding and Analysis	Marks
L3	For a well-developed answer that has: ● **good scope** - explains one internal and one external factor of negative inflation; and ● **good rigour** - thoroughly analyses the how each factor leads to negative inflation using AD/AS analysis and diagrams; and	8 – 10

	● **good application to context** - supports explanations with reference to the context of Singapore.	
L2	For an under-developed answer that: ● **lacks scope** – explains only one internal or one external factor of negative inflation; and/or ● **lacks rigour** – descriptive explanation of how each factor leads to negative inflation; and/or ● **lacks application to context** – analysis has little or no reference to the context of Singapore.	5 – 7
L1	For an answer that shows some understanding of the causes of falling general price level. Answer is descriptive and superficial, lacking in development and/or there are major conceptual errors that affect the accuracy of the essay.	1 – 4

(b) Discuss the view that governments should only pursue price stability as their macroeconomic aim. [15]

Part (b) Question Interpretation

Command phrase	*Discuss the view*	Provide a balanced analysis of the view presented before making a judgement on the validity of the view with substantiation.
Content	Requirement 1: Government should pursue price stability (Benefits of price stability)	
	Requirement 2: Government should not only pursue price stability. Other macroeconomic goals are also important	
Context	*Not specified*	Analysis could be based on any context, with relevant examples brought in to support arguments made.

A relevant response requires an explanation of the benefits of attaining low and stable inflation as reasons why governments should pursue price stability. For a balanced analysis, the answer would need to explain why governments may pursue at least two other macroeconomic goals instead of price stability (i.e. positive consequences of the other macroeconomic goals). The evaluation requires an overall judgment on whether governments should pursue price stability instead of the other macroeconomic goals, and the reasons to substantiate why.

Introduction

- Every government has four macroeconomic objectives that it seeks to achieve, i.e. sustainable and inclusive economic growth, full employment, price stability and a healthy balance of trade.

- Price stability refers to a low and stable rate of inflation which ranges between 2% and 3% for most countries.
- This essay aims to discuss whether governments should prioritise the pursuit of price stability over the other macroeconomic objectives.

Thesis: Governments should pursue price stability over the other macroeconomic aims

- Low and stable inflation can lead to the achievement of the other macroeconomic objectives.
- Low inflation encourages savings as consumers do not need to worry that the real value of their savings would be eroded by high inflation rates. The increase in savings increases the supply of loanable funds, thus lowering interest rates. This reduces the cost of borrowing, which further incentivises consumption C and investment I, and hence AD. Due to the multiplier effect where there are multiple rounds of increase in induced-consumption, real GDP increases by a multiplied amount of the initial increase in C and I, thus achieving actual growth.
- With actual growth, derived demand for labour increases as firms step up production to meet increased demand for goods and services, thus reducing demand-deficient unemployment in the economy.
- In addition, higher investment increases capital stock accumulation, leading to an increase in productive capacity and LRAS, hence contributing to potential growth of the economy. The increase in AD and LRAS leads to both actual and potential growth, which facilitates the achievement of sustained growth.

OR

- **Governments should pursue a low and stable rate of inflation as it protects the material standard of living of households and profits of firms.**
- Low and stable inflation rate protects the real income of the majority in the country, preventing the real value of incomes from being eroded by rapidly rising prices. Consumers' purchasing power and hence material standard of living (SOL) are thus maintained.
- Moreover, low inflation encourages savings as consumers do not need to worry that the real value of their savings would be eroded by high inflation rates, which improves households' future material SOL.
- For firms, low and stable rate of inflation allows them to better predict their cost of production and expected revenue, and hence their profits. As firms are able to project their expected returns with greater certainty, firms could have greater confidence in planning for and undertaking long-term investments, thus improving their long-term viability.

(Note: Answers that explain the reasons as avoiding the negative consequences of deflation are also acceptable.)

Anti-thesis: Governments should pursue the other macroeconomic aims instead of price stability *(explain the positive consequences of at least 2 other macroeconomic aims)*

- **A government should also focus on achieving sustainable and inclusive economic growth as doing so benefits the material and non-material SOL of current and future generations.**
- Sustainable economic growth indicates a rate of growth that can be sustained without creating other significant economic problems (such as depleted resources and environmental problems), particularly for future generations. Inclusive growth indicates a rate of growth that is sustained over a period of time, is broad-based across economic sectors, and creates productive employment opportunities for the majority of the country's population.
- Firstly, achieving sustained growth in an economy would allow the citizens of a country to enjoy higher material standard of living. With higher output levels with no significant upward pressure on GPL, households would have higher income and higher purchasing power to consume more and better quality goods and services. With higher incomes, C will increase. Consumers benefit as they are able to enjoy a greater quantity, wider variety and higher quality of goods and services, leading to higher material SOL.
- With sustainable growth, the economy grows without placing too much pressure on water, land and energy resources, and in a manner that minimises the generation of negative externalities through pollutive activities. Hence, the environment is protected for future generations to enjoy, protecting their material and non-material SOL.
- In addition, inclusive growth ensures that income distribution is taken into consideration and that the economic benefits of growth are distributed fairly. This ensures that the material SOL of the average resident increases with economic growth.
- **A government may focus on pursuing low unemployment as it increases the material SOL of households.**
- When consumers are employed, they earn an income and have higher purchasing power to consume more goods and services, enabling them to enjoy a higher material SOL. Moreover, with regular incomes, consumers are more likely to save. With more savings, consumers are able to enjoy a higher future material SOL.
- When individuals are employed, they face less stress as they are able to provide for their families. Employed individuals pay taxes, which the government can use to enhance education and healthcare for citizens, improving literacy and life expectancy rates. Low unemployment also generally reduces crime rates as the opportunity costs of committing crimes rises with employment, promoting greater safety in society. All these lead to higher non-material SOL.

Evaluative conclusion (stand + at least 2 ATMS evaluative angles)

(Any 2 of the following justifications will suffice)

- **[Stand]:** Whether a government should pursue only price stability depends on several factors such as the state and nature of the economy.
- **[Situation – state of economy]:** If an economy is suffering from macroeconomic problems such as high unemployment and negative growth, the government should prioritise achieving full employment through stimulating actual growth.

- For instance, during the global financial crisis, the US suffered economic consequences such as fall in national output and high unemployment. The US government was more concerned with raising output and reducing the near 10% unemployment rate than to deal with inflation. Hence, during an economic recession, the fall in real GDP and increase in unemployment could be very severe, rendering addressing inflation a less important consideration for the government.

OR

- During a period of deflation and negative economic growth, the government could choose to focus on pursuing actual growth and low unemployment. As economic outlook improves together with economic growth and employment, consumers are likely to increase their spending. This helps break the vicious cycle of falling spending and prices or a deflationary spiral that can arise from consumers' expectations of further falls in price levels. Hence, focusing on achieving actual growth and low unemployment can help the government achieve price stability in times of a deep recession.

- **[Situation – nature of economy]:** Small and open economies may have to prioritise price stability over other macroeconomic objectives because price stability is important for such economies to maintain their price competitiveness of exports over time and to sustain their export-driven economic growth.
  - This is seen in the case of Singapore, where her government views price stability as the intermediate goal to attain other macroeconomic goals in the long run. This is because price stability creates a conducive environment for foreign direct investment (FDI) in Singapore which will eventually contribute to sustained economic growth and low unemployment. Price stability also helps ensure the price competitiveness of her exports, enabling Singapore to increase her export revenue and achieve greater actual growth. Sustained growth will then allow Singapore to achieve sustainable and inclusive growth in the long run.
  - On the other hand, price stability for large and less open economies may not be as pressing an objective compared to the small and open economies. This is because it is less crucial for a large economy to target inflation as an intermediate goal in order to achieve economic growth and low unemployment, given its lower dependence on FDI and exports as a source of economic growth.

- **[Situation – nature of economy]:** The government of a developed country may be more concerned with maintaining price stability, due to the high level of accumulated savings and assets households generally possess from previously produced national output. When inflation is high, the real value of savings will be eroded, causing households to lose the purchasing power of their savings and assets, causing a rapid fall in material standard of living. As developed economies are likely to have attained high levels of real GDP per capita and hence high material SOL, achieving economic growth may be less of a priority.
  - On the other hand, the government of a developing country may prefer to prioritise economic growth and low unemployment over inflation, since it requires the rapid economic growth to improve the material standard of living of households, and to create employment for its largely unutilized labour force. Although increase in prices may result in fall in purchasing power, households in developing countries tend to have little savings and assets; hence the impact of price increases is not as significant compared to developed countries.

- **[Time frame]:** In the short run, a government may prefer economic growth and job creation over price stability. A government may be willing to relinquish price stability in order to achieve high economic growth to increase the standard of living of her people rapidly.
    - For instance, it is not uncommon to observe near two-digit inflation rates in India in recent years. However, the economic growth registered often surpasses that of her inflation. The Indian government was willing to tolerate inflation in return for rapid increase in national output. This led to rapid improvement in the average material welfare of the Indian citizens.
    - In the long run, when the economy may have achieved a high material standard of living, the priority of the government may then switch to ensuring price stability to prevent people's real incomes from being eroded and hence their material standard of living from falling.

Mark scheme

Level	**Knowledge, Application/Understanding and Analysis**	**Marks**
L3	For a well-developed answer that has: ● **good scope** – exhibits clear analytic understanding of why governments may aim to pursue price stability and at least two other macroeconomic goals; and ● **good rigour** – utilises appropriate AD/AS analysis, together with real-world examples to explain the positive consequences of achieving price stability and the other macroeconomic goals.	8 – 10
L2	For an underdeveloped answer that: ● **lacks scope** – only explains why governments may aim to pursue price stability or other macroeconomic goals; and/or ● **lacks rigour** – gives a descriptive explanation of the positive consequences of achieving price stability and the other macroeconomic goals.	5 – 7
L1	For an answer that shows some knowledge of the reasons for pursuing price stability and the other macroeconomic goals. Answer may contain multiple conceptual errors.	1 – 4
Level	**Evaluation/Synthesis**	**Marks**
E3	For a well-substantiated evaluation of whether governments should prioritise the pursuit of price stability over the other macroeconomic goals, contextualised and well supported with economic analysis.	4 – 5
E2	For some attempt to provide synthesis/conclusion but lack clear substantiation/elaboration.	2 – 3
E1	For an unsubstantiated evaluative statement that addresses the question.	1