

Question 2: The challenges in a post-pandemic world

Table 1: Selected Key Economic Indicators for United States, 2019 - 2023

	2019	2020	2021	2022	2023
Real Effective Exchange Rate Index (USD)	116.4	118	115.6	126.6	127.3
Net current account (in USD billions)	- 441.7	- 597.1	- 831.4	- 971.6	- 818.8
Unemployment Rate (in %)	3.7	8.1	5.3	3.6	3.6
Government Debt (as a % of GDP)	100.1	124.7	118.9	114.7	No data available

Source: data.worldbank.org, accessed on 23 July 2024

Table 2: Selected Key Economic Indicators for Singapore, 2019 - 2023

	2019	2020	2021	2022	2023
Current account as a % of GDP (in %)	16.0	16.6	19.8	18.0	19.8
Consumer Price Index (base year 2019)	100	99.8	102.1	108.4	113.6
Unemployment rate (in %)	2.3	2.9	2.7	2.1	1.9
Gini coefficient value (before accounting for tax and transfers)	0.452	0.452	0.444	0.415	0.412

Source: Singstat.gov.sg

Extract 6: America's CHIPS Act

Signed into America's law in August 2022, the **C**reating **H**elpful Incentives to produce **S**emiconductors (CHIPS) Act is intended to lure microchip manufacturing back to the United States (US) after decades of companies offshoring this technology to cheaper countries such as China. Although the US produced close to 40 percent of the world's semiconductor supply in the

1990s, this has now since fallen to just 12 percent, with Taiwan on the other hand, producing more than 60 percent of the world's supply of semiconductor chips now.

The CHIPS Act allocated \$53 billion in fiscal incentives for domestic semiconductor manufacturing and research and development, to build new and expand existing semiconductor facilities. Companies are also eligible for a 25 percent tax credit. The legislation is sparking a great deal of investment activity in the US semiconductor sector. Hundreds of companies have requested more than \$70 billion in subsidies—nearly double the amount available. Private companies have meanwhile announced more than \$200 billion in investment spending since the law passed.

There's a newfound realisation about the growing importance of chips and semiconductors because chips are one of the critical factor inputs to produce electric vehicles. With an increased global emphasis on reducing carbon footprint, this has made some supporters see this policy as a much-needed boost to America's trade and its investment in critical technologies.

However, some critics are sceptical about the effectiveness of this policy change. There are limits to how much semiconductor can be shifted to the United States from East Asia due to the cost of labour, construction cost and the lack of trained workforce in the USA. Building a new chip manufacturing facility in USA is estimated to be 'four or five times greater' than in Taiwan, which begs the question on the sustainability of the CHIPS act especially with a rising federal debt. Economists are worried that the CHIPS Act explicitly pulls investment away from East Asia and risks hollowing out¹ major tech industries in East and Southeast Asia region. This may have spillover effects on smaller Asia countries which rely on major East Asia economies for export growth. In the long term, such industrial subsidies invite retaliation from others, leading to an overall more inward-looking world.

Source: Adapted from Council on Foreign Relations, accessed on 14 July 2024 & East Asia Forum, 26 Nov 2023

Extract 7: The challenge of food security

With world food costs surging to all-time highs, several governments are taking steps to secure their own food supplies.

Indonesia's palm oil export ban kicked off in one of the most drastic cases of food protectionism since the war erupted in Ukraine. The global top exporter of palm oil imposed a sweeping ban on cooking oil exports, covering palm oil products across the value chain. This tropical oil is found everywhere today - in food, soap, lipstick and even printing ink - which makes Indonesia's move even more significant to the already disarray global edible oil market.

Such export bans hurt small and resource-scarce countries like Singapore. Singapore, being a highly-import reliant country and a net importer of resources, will continue to face such global supply uncertainties and disruptions from time to time. While the government will do what it can

¹ *Hollowing out refers to a deterioration of a sector when firms opt for lower-cost facilities overseas*

to minimise the impact such as through stockpiling and import diversification, Singapore will not be able to completely remove the disruptions to our food supply.

Source: Adapted from Arvind Jayaram, The Straits Times, 10 September 2023

Extract 8: Demographics changes in Singapore

With an ageing workforce and the fertility rate falls far below replacement rate, it will not be long before Singapore workforce size plateaus. Ageing will also create additional manpower needs in healthcare and aged care services. This could lead to manpower shortfalls in key sectors as workers retire and healthcare needs rise. As a fully globalised country, Singapore has been plugging the labour shortfalls by increasing the inflow of foreign workers, for example, earlier in 2023, Singapore announced that it would be stepping up recruitment of foreign nurses.

However, reliance on foreigners should not be the main or only strategy. The Covid-19 pandemic has underscored the risks of high foreign-worker dependence when borders close or travel is disrupted. Besides, it cannot be assumed that there will always be a ready supply of foreign manpower as job opportunities in other countries expand and these countries themselves undergo demographic transitions. In Singapore, there are limits to overall immigration, given our land and population constraints and the need for a core of local workers in essential jobs and sectors. Besides, bringing in too many foreign workers may create a depressing effect on wages, which puts off local workers from joining certain industries.

While the emergence of new technology such as generative artificial intelligence (AI) could help Singapore produce more with fewer people, it is also expected to put many existing job roles at risk. Even if AI can help boost productivity, it is unlikely to be able to significantly reduce manpower needs in service industries like healthcare and hospitality. In fact, it is necessary to equip workers with the skills and adaptability to take up good jobs and thrive in their careers. As skill demands continually evolve, more than ever, education should be aimed at cultivating a love for learning, curiosity, teamwork, resilience and a tolerance for ambiguity.

Source: Adapted from Terence Ho, The Straits Times, 30 August 2023

Questions:

- (a) Describe the trend in the USA's net current account balance between 2019 to 2023. [2]
- (b) With reference to Extract 6, explain the factors affecting the US government decision to implement the CHIPS Act. [6]
- (c) According to Extract 7, Indonesia imposes an export ban on edible oil. Using a diagram, explain what determines the size of the increase in global price of edible oil following the export ban. [4]
- (d) Discuss whether domestic or external challenges are more damaging to the Singapore economy. [8]

- (e) With reference to the extracts and/or your own knowledge, discuss whether the Singapore government should increase the immigration of foreign labour or rely more on artificial intelligence to improve the standard of living. [10]

[Total: 30 marks]

Suggested Answers:

Questions:

- (a) Describe the trend in the USA's net current account balance between 2019 to 2023. [2]

1m: Overall net current account balance is negative & increasing □ widening deficit

1m: Anomaly: except for the 2022 to 2023, where the deficit improves (negative decreases)

- (b) With reference to Extract 4, explain the factors affecting the America's government decision to implement the CHIPS Act. [6]

Factor 1: Benefits (How the Act can help achieve macroeconomic objectives for USA)

Students only need to explain either one of the following benefits – focus is on **how** the Act can help to achieve either of the macro goals.

Actual EG:

- The CHIPS Act encourage greater investment spending (I) by chips companies due to the government subsidies and tax credits
- **Higher I ⇒ higher AD □ achieve higher actual economic growth via the multiplier process and jobs creation (reduce unN)**
- Assuming the economy is below full-capacity, when firms see a fall in the inventories, they are more willing and able to produce more, which means it will lead to an increase in derived demand for workers → Higher wages for workers, better material SOL for the workers.

Potential EG:

- The higher investment spending on machines, technology and capital resources □ increase the **quantity and quality of resources** □ **increase the country's LRAS and hence, potential growth.**
- With higher productive capacity, the economy is not only able to have more resources to produce more output & increase in potential output, it can also **keep prices low and stable, since there is less competition for the resources.**

Improved BOT:

- From Extract 2, it was explained that global demand for semiconductor chips are likely to rise since it is a input used to produce electric vehicles → since there is a rising global demand for EV = rising demand for semiconductor chips. If the manufacturing companies are lured back into USA and **coupled with the subsidies given by the US government to produce the USA microchips** □ **US microchips more price competitive, hence higher demand for the**

microchips □ **USA can export more microchips** □ **higher demand for USA's X and hence, improve USA's BOT.** *Students may also link this to greater profits for the USA's manufacturing companies.*

Costs:

- Government budget, opportunity costs incurred, as the subsidies provided is not able to use for other areas such as healthcare, education.
- May increase the USA's federal debt, cause the government to have to raise taxes, reduce disposable income for households and after-tax profits for firms.
- Other countries retaliating → cannibalise the demand for America's chips reduce their demand for America's exports → possibly to reduce X-revenue, BOT, and hence, AD and economic growth

Constraints:

- How much subsidies the government is able to provide, given the tight govt budget.
- Lack of skilled labour, even if the microchip companies pull their investment out from elsewhere into USA, they may not be able to produce as efficiently since they are unable to get the necessary workers □ limit to how much profits these firms can earn.

Mark scheme:

2 marks for benefits explanation

2 marks for costs explanation

2 marks for constraints explanation

(c) **According to Extract 7, Indonesia imposes an export ban on edible oil.**

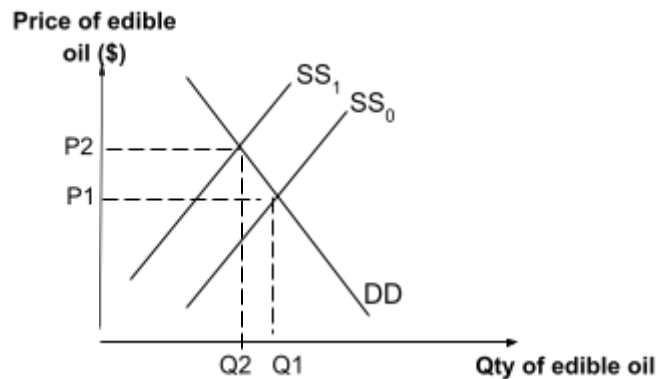
Using a diagram, explain what determines the size of the increase in global price of edible oil following the export ban. [4]

Export bans ⇒ **reduce global supply** since Indonesia is a major exporter of edible oil, hence, it creates a shortage in the market. To correct the shortage, the global price of edible oil increases to reduce the Quantity demanded and increase quantity supplied to the new equilibrium quantity.

(2 marks to identify and justify the PED value for edible oil)

Price Elasticity of Demand will determine the size of increase in the global price. As edible oil is **price inelastic in demand**, since edible oil is a key ingredient in many products and hence, **lacks close substitutes** (and that Indonesia is the major exporter of this good).

When the price increases, the quantity demanded only falls by less than proportionately, so the **extent of price increase is larger** as it takes a **larger price increase to clear the shortage.**



Mark scheme:

1 mark: diagram showing a leftward shift in the supply curve and an inelastic demand

1 mark: supply shock □ explain why global supply drops (Indonesia is a key global exporter of edible oil)

1 mark: state and justify why the PED for edible oil is < 1

1 mark: explain that the price increase is large / more than proportionate

Note to markers:

Can also accept the extent of supply shock is very large – since Indonesia is a global top exporter of palm oil, with appropriate diagram (to show) □ replace 3rd mark

- (d) **Discuss whether domestic or external challenges are more damaging to the Singapore economy.** [8]

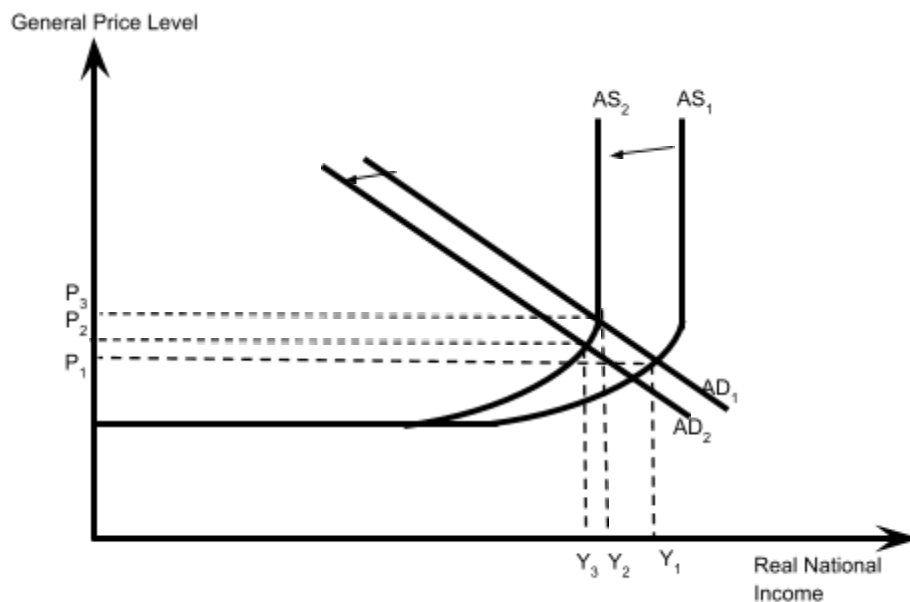
Singapore economy is a small and open economy, due to its lack of natural resources and small geographical size. Singapore is heavily reliant on imported resources and export markets for growth.

R1: Domestic challenges can be a concern to the Singapore government

Shrinking workforce, ageing population:

- Shrink in total quantity of labour □ **drop in LRAS** □ **worsens potential economic growth.**

- The **unit cost of production may also rise** due to fewer workers available (shortage of manpower), leading to the firms to pass on the higher unit COP to the consumers in terms of **higher prices (higher GPL from P₀ to P₁)**.
- Smaller workforce may result in **less consumption spending** and the more expensive COP may make investing in Singapore less attractive to foreign companies, **reducing the inflow of FDI (investment spending)** □ **lower AD from AD₁ to AD₂**.
- Overall there is an ever larger **fall in RNY from Y₁ to Y₃**, since the firms have **fewer resources to produce and fewer demand for their goods and services** □ **worsens both actual and potential economic growth**.
- With a fall in RNY, there is also a corresponding **fall in household incomes** □ leads to a **worsening of SOL for the residents, as they are less able to access goods and services**.
- The higher GPL may also lead to less competitive exports, foreign consumers may switch away from consuming Singapore's exports and consume other countries' exports instead □ leading to a **fall in X-revenue and hence, worsening the Singapore's BOT**.
- With a shrinking workforce and an ageing population, government may have to pay out more transfer payments and at the same time, collect less tax revenue since working population is now smaller. **Worsens government budget** which may lead to **possible trade-off for future standard of living in terms of literacy rate, life expectancy, government is less able to spend on infrastructures such as schools, roads and hospitals**.

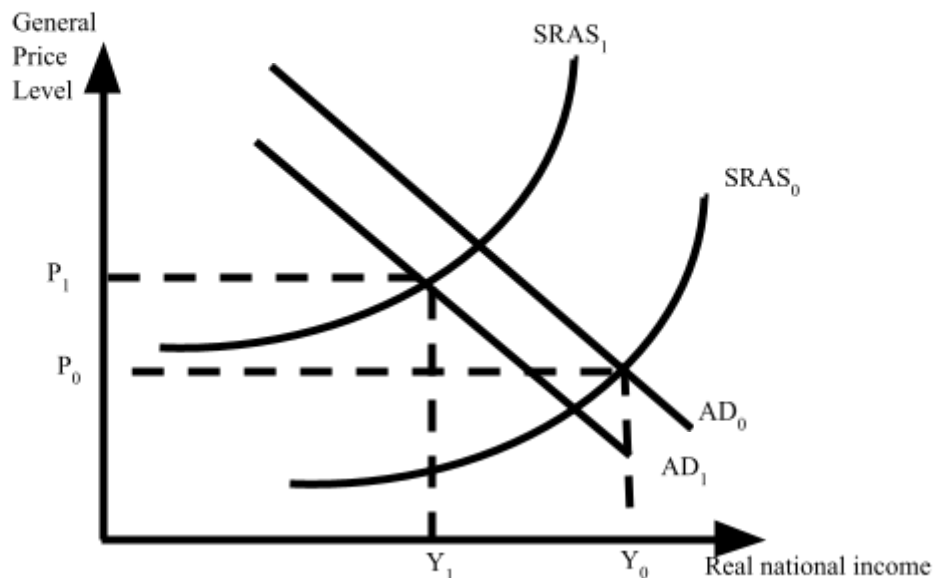


Evaluation: extent of severity from the domestic challenges

- **Extent of impact can be mitigated by the implementation of supply-side policies** such as education and increase in immigration of foreign labour
- Helps to temporarily alleviate the shortages of manpower and hence, reduce the pressure of cost-push inflation.
- Hence, short-term impact may be more severe, but once the effectiveness of the policies kick in, the **challenges may be mitigated in the long-term**

R2: External challenges are also a concern to the Singapore government

- Food security → **edible oil export ban** → **higher imported inflation** since Singapore is a import-reliant country
- **SRAS falls from $SRAS_0$ to $SRAS_1$** , since the FOPs are more expensive, firms are less willing to produce, results in a **fall in RNY, fall in economic growth**.
- Firms pass on the rising COP to consumers, **raise GPL (cost-push inflation)**, and consumers may tend to save more rather than consume, leading to a **fall in consumption expenditure as seen by the movement along the AD curve**.
- 'Hollowing out' □ due to the America's CHIPS Act, other Asia countries may experience hollowing out of investment □ **reduce the AD of other Asian's countries and hence, Asia's economies experience slower economic growth** □ **fall in the foreigners' purchasing power** and hence, lead to **less demand for Singapore's X**, reduce Singapore's AD from AD_0 to AD_1 □ **worsens Singapore's BOT and hence, our actual economic growth**.



Assuming that the fall in AD is smaller than the fall in SRAS:

The GPL is likely to increase from P_0 to P_1 and a fall in RNY from Y_0 to Y_1

- Worsens purchasing power for households
- Less able to purchase goods and services, worsens material SOL
- Less able to purchase quality healthcare and education, worsens the literacy rate and life expectancy rate, worsens non-material SOL.

Evaluation: extent of severity from the external challenges

- Singapore is a **small & open economy**, very **vulnerable** to external shocks from other countries
- Since Singapore's major **trading partners also include Asia's countries**, likely to impact greatly.
- However, it also depends on the **success of the CHIPS Act in USA**. If the Act is effective, **USA's economic growth may improve and hence, in turn, improving Singapore's economic growth via higher X-revenue** since the USA is one of the major buyers for Singapore's exports.
- Singapore also practices **import diversification and stock-piling**, helps to reduce the negative impact of cost-push inflation slightly. Singapore can avoid over-reliance on one country solely, therefore mitigate our contagion effects.

Evaluation and Conclusion – which is a more serious concern to the government?

Both challenges are of concern to Singapore. However, the severity of the concern is depending on **whether the government is able to address some of the challenges that it brings. External challenges may be of a greater concern to the Singapore government since it is harder to resolve.** It is mentioned in the extract that, while the government will do what it can to minimise the impact such as through stockpiling and import diversification, Singapore will not be able to completely remove the disruptions to our food supply. It is also largely depending on what the other countries do which Singapore has no control over.

Whereas on the other hand, **Singapore government may have more control over the negative impact that the domestic challenges bring.** Singapore government has a relatively good relationship with its population, is able to garner support to implement the policies needed to overcome the domestic challenges. **As seen from the data, Singapore's unN rate is relatively low and stable, with a improvement in gini coefficient too.** This goes to show that the policies the government puts in place is rather effective to prevent a rise in income inequality and unemployment.

Mark scheme:

Level	Descriptor	Marks
L2	<ul style="list-style-type: none"> • Well-balanced answers explaining both types of challenges and how it impacts Singapore in terms of macroeconomic issues and/or economic agents. • Economic analysis tools such as diagrams are drawn and explained. 	4-6

	A + C or A + A = 6 A + 0/K or C + C = 5 C + 0 = 4	
L1	<ul style="list-style-type: none"> One-sided answers that only considers one type of challenge Economic analysis is lacking, with several missing gaps and lacking accuracy C + K = 3 K + K = 2 K + 0 = 1	1-3
E2	<ul style="list-style-type: none"> Extent of the challenges are explained with sound reasoning and a brief attempt to provide a conclusion (2m) An overall conclusion is provided with appropriate criteria used. (3m) 	2
E1	<ul style="list-style-type: none"> Extent of the impact is stated but not explained No attempt to provide an overall conclusion. 	1

- (e) With reference to the extracts and/or your own knowledge, discuss whether the Singapore government should increase the immigration of foreign labour or rely more on artificial intelligence to improve the standard of living. [10]

Note to students: to deepen the analysis, you are expected to bring in the impact on AD and AS (either SR or LRAS) as well as the impact on both material and non-material SOL.

Standard of living measures both the material and non-material aspects. Material SOL is measured by the **real GDP per capita which measures the the accessibility to goods and services and purchasing power of the households**, whereas non-material SOL is about the intangible quality aspects of life **such as literacy rate and life expectancy**.

R1: Increasing immigration can improve the standard of living

Impact on material SOL:

1. Increase in AD:

Greater pool of workforce / population ☐ **increase consumption expenditure** ☐ **increase in AD**

- Assuming there is spare capacity in the economy** ☐ RNY can increase as firms react to the fall in inventories by producing more ☐ hire more FOPs, pay more as wages. Higher induced consumption ☐ AD increases again, therefore **RNY increases by a multiplied amount.**

- As the economy has spare capacity, **the increase in incomes is greater than the increase in GPL** \square **enjoy higher purchasing power** \square **greater accessibility to goods and services, improve material SOL.**

2. Increase in LRAS:

Higher supply of labour \square **increase in quantity of resources** \square **increase in LRAS, greater potential economic growth.**

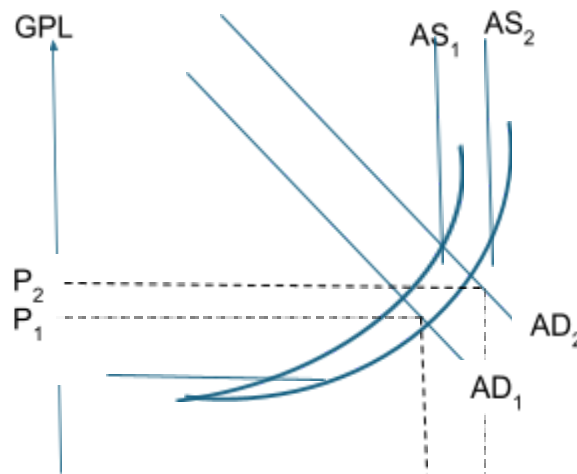
- **Assuming that the economy is now producing near or at full employment, the increase in LRAS can allow the country to lower demand-pull inflation and produce more output.**
- Since there are now more resources available, firms **do not need to compete for the scarce resources as much, bidding down prices of FOPs, hence, lowering GPL** via the lower unit COP.
- At the same time, the **greater available resources allow the firms to produce more output, increasing the RNY.**
- **With the higher RNY and a fall in GPL** \square **households enjoy higher purchasing power, greater accessibility to goods and services, improve material SOL.**

OR

3. Increase in SRAS:

Greater supply of labour helps to **reduce wages, reduce unit COP**. Firms are **more willing and able to produce more, increasing production of goods and services.**

- Firms **pass on fall in unit COP in terms of lowering of GPL** \square **reduce cost-push inflation.**
- **Assuming that the fall in wages is smaller than the reduction in GPL, there can be an increase in purchasing power for the households.** This can enable the households to **enjoy greater and more variety of goods and services, improving material standard of living.**





Impact on non-material SOL:

The higher purchasing power also enable consumers to **consume better healthcare and education, improving life expectancy and literacy rates, therefore improving the non-material aspect of their SOL.**

As mentioned in Extract 8, the intake of foreign nurses can help to improve our healthcare capacity \square **cheaper healthcare costs, more consumers are able to afford the healthcare services, helps to lower infant mortality rate and improve life expectancy \square overall improve in non-material SOL**

Evaluation \square To what extent can the increase in foreign labour help to improve SOL?

- While there may be an increase in RNY due to greater production of output, there is also the **increase in population size due to the inflow of foreign labour \square therefore, the real GDP per capita may fall** if the population growth outweigh the increase in income.
- This is especially so when the **inflow of foreign labour can cause a depressing effects on wages for local workers in some sectors, especially the labour intensive sectors such as hospitality and healthcare sectors.**
- In this case, the material SOL may worsen instead.
- **Limited land space + competition for jobs \square may raise unN among the Singapore residents and increase unhappiness amongst the residents, worsen both the material and non-material SOL for the households.**
- No ready pool of supply of workers, cannot expect to be sufficient = not sustainable to rely on increase immigration in the long term.

R2: Relying on automation / AI can improve SOL for Singapore

Impact on material SOL:

1. Impact on AD:

- **Attract FDI and boost investors' confidence** due to the greater **efficiency** and higher productivity of labour
- Increase in I = increase in AD
- The **use of AI** can also **improve quality of our goods and services \square improve X-competitiveness, attract more buyers \square increase X-revenue** and hence, AD
- **Assuming there is spare capacity in the economy \square RNY can increase** as firms react to the fall in inventories by producing more \square hire more FOPs, pay

more as wages. Higher induced consumption □ AD increases again, therefore **RNY increases by a multiplied amount.**

- As the economy has spare capacity, **the increase in incomes is greater than the increase in GPL** □ **enjoy higher purchasing power** □ **greater accessibility to goods and services, improve material SOL.**

2. Impact on AS:

- Higher productivity = country can produce higher output with fewer people □ **average cost falls** □ **SRAS increases**
- **Better quality of workforce = better quality of resources higher LRAS**
- AS increases □ country can produce more output and reduce inflationary pressures at the same time.
- Since the workers are **more productive**, they are able to **earn higher wages**. Coupled with a lower GPL, the workers can enjoy **higher purchasing power** □ **enjoy more and better quality of goods and services** □ **improve material SOL.**

Impact on non-material SOL:

- With higher and better paying jobs □ fewer workers turn to crime, improve non-material SOL as well.
- The workers with higher productivity may also suffer from **less stress and less anxiety, leading to better non-material SOL as well.**

Evaluation □ To what extent can the reliance on AI help to improve SOL?

- Reliance on AI can cause **structural unN** since it may replace some of the jobs □ these workers lose jobs and lack skills needed for the new jobs, hence for a group of structurally unemployed workers, they may not enjoy better SOL.
- At the same time, their income level falls while the income level for the skilled / trained workers increase, **worsens income gap and income inequality = non-material SOL is worsened.**
- This approach may also be **more costly** to the government, than increasing the foreign workers □ strain on government budget, **incurs opportunity costs** and hence, government may not be able to spend on other areas such as healthcare, education and transport.

Overall conclusion:

Whether which policy is better able to improve SOL for the households depends on:

- **Sector:** Critical services and healthcare will need the labour manpower to supply the services & AI cannot help much to ease their labour shortages. So increase immigration may be more appropriate, but other sectors like manufacturing sector, AI may be more helpful

- **Time needed:** urgency of problem in terms of labour shortage, immigration is a short-term measure, whereas reliance on AI is a long term solution. The more severe and urgent the labour shortages is, the more appropriate solution would be to increase immigration first.

Mark scheme:

Level	Descriptor	Marks
L2	<ul style="list-style-type: none"> Well-balanced answers considering both policies and how it works to help Singapore improve SOL via links to AD and AS (either SR or LR), hence linking to changes in RNY and GPL <input type="checkbox"/> purchasing power, links to literacy rate, infant mortality rate etc. Explicit explanation to link to both material and non-material SOL improvements Economic analysis tools such as diagrams are drawn and explained. <p>Note to markers:</p> <ul style="list-style-type: none"> To qualify for a “A” answers, students must have explain the changes in AD and AS, material and non-material. <p>A + A = 7 A + C = 6 A + 0/K or C + C = 5</p>	5-7
L1	<ul style="list-style-type: none"> One-sided answers that only considers one policy and its possible improvement to SOL Economic analysis is lacking, with missing gaps and lacking accuracy <p>C + K = 4 C + 0 = 3 K + K = 2 K + 0 = 1</p>	1-4
E2	<ul style="list-style-type: none"> Limitations of the measures were explained with good context provided. Overall conclusion is provided as to which is better able to improve SOL for the country. 	2-3
E1	<ul style="list-style-type: none"> Limitations of the measures were stated, rather than explained No overall conclusion provided. 	1

[Total: 30]