ANGLO-CHINESE JUNIOR COLLEGE

2024 JC2 PRELIMINARY EXAMINATIONS

ECONOMICS	**8843/01**
Higher 1	19 August 2024
Paper 1	3 hours

Additional materials: Writing papers and
Cover sheet X 2

READ THESE INSTRUCTIONS FIRST

Write your exam index number and name on all the answers you hand in.
Write in dark blue or black ink pen on both sides of the paper.
You may use a soft pencil for any diagrams, graphs or rough working.
Do not use staples, paper clips, highlighters, glue or correction fluid / tape in your answers.

Answer **all** questions.

Begin Question 2 on a **fresh** sheet of writing paper.

At the end of the examination, arrange your answers in order.
Fasten your answers for Question 1 and Question 2 **separately** using the cover sheets provided.

The number of marks is given in brackets [ ] at the end of each question or part question.

This document consists of **8** printed pages (including this page).
Please check that your question paper is complete.

Answer **all** questions

Question 1: Food Security and Challenges

Table 1: Global Food Commodity Prices

The Food and Agriculture Organisation Food Price Index (FFPI) is a measure of the monthly change in international prices of a basket of food commodities. The table below shows the five commodity groups – food, meat, dairy, cereal, vegetable oil and sugar. Their respective price index is the average price indices over 2017 to 2022.

	Food Price Index	Meat Price Index	Dairy Price Index	Cereal Price Index	Vegetable Oil Price Index	Sugar Price Index
2017	98.0	97.7	108.0	91.0	101.9	99.1
2018	95.9	94.9	107.3	100.8	87.8	77.4
2019	95.1	100.0	102.8	96.6	83.2	78.6
2020	98.1	95.5	101.8	103.1	99.4	79.5
2021	125.8	107.9	119.6	131.2	164.9	109.3
2022	144.7	118.8	149.5	154.7	187.8	114.5

Source: Food and Agriculture Organization of the United Nations

Extract 1: Why are global food prices near an all-time high?

Higher global food prices are contributing to a wider trend of increased cost-of-living in both advanced and emerging economies. The annual rate of inflation worldwide is 9.2%, driven by a surge in energy as well as food prices.

Prior to the Russia-Ukraine war, droughts and Covid-19 restrictions have driven up global food prices. The price hike worsens after the war, as the combined supply from both Russia and Ukraine is around 30% of global wheat exports and around a fifth of the world's maize supply. To make matters worse, farming activities, including irrigation and transportation of agricultural machinery, rely heavily on energy sources like diesel and natural gas. Therefore, rising energy prices directly translate to higher production costs, ultimately reflected in food prices. At the same time, due to longer lifespan, the world's population has grown exponentially over the last few decades.

The increased chaos in global food markets has led to a new problem: food protectionism. Some governments have clamped down on exports of staples including grains and cooking oil to safeguard supplies for domestic consumption. Apart from export quotas, threat of domestic social unrest has led to other forms of export restrictions such as taxes and outright bans. These policies have a severe impact on the developing countries that depend on international markets for food imports.

Source: World Economic Forum, 12 May 2022

Extract 2: A sustainable food system for Singapore and beyond

Singapore is vulnerable to supply shocks and disruptions as the country imports more than 90 per cent of its food. For greater resilience, the government has set a “30 by 30” goal – to be able to produce 30 per cent of the country’s nutritional needs by 2030.

With climate change posing challenges to food production, Singapore’s agri-food industry sees the need to devote more resources to local food production despite Singapore’s limited land space. As the country journeys towards her “30 by 30” goal, carving out land spaces and innovation technology will be key enablers.

To boost local food production, the government has expanded the Agri-food Cluster Transformation (ACT) Fund to cover more types of food and technology. To encourage innovation through Research and Development (R&D) projects in areas like improving the disease resistance and nutritional quality of crops and fish, the Singapore Food Story R&D programme was launched in 2019. Since then, 40 projects have been given funding.

Source: Singapore Food Agency, 11 November 2022

Extract 3: What is the problem with meat production and consumption?

Despite the recent popularity of plant-based diets, the world is on track to consume more meat, largely due to population growth and consumers regarding meat consumption as an important part of their diet. To meet the rising demand, farmers are rearing more livestock. However, rearing livestock accounts for more than one-third of global greenhouse gas emissions. Greenhouse gas emissions can be harmful as it contributes to climate change and global warming. Fresh water is also necessary for the rearing of livestock and as of now, more than 70% of the world’s fresh water has been used up. Sources of fresh water include melted icebergs, natural precipitation such as rainfall and groundwater found in rivers and lakes. While rainfall precipitation may top up the earth’s supply of fresh water, scientists are worried about the impact of the worsening global warming on the future supply of fresh water.

The trajectory of meat consumption has left both environmentalists and economists very concerned. Rearing of livestock can take years and is subjected to weather elements, which means production may not always meet demand. This has an impact on cost-of-living, especially for countries where meat is a staple part of their diet.

Source: Various

Extract 4: Is meat tax the only way?

In several countries, vocal and opinionated environmentalists are proposing a meat tax. However, while there is a general acknowledgement of the need to reduce meat consumption and production for environmental reasons, the validity of a tax on meat is far less clear.

Imposing a meat tax would mean further reducing the affordability of meat for low-income households who may already struggle to purchase meat. The environmental impact of meat production also varies considerably across farming practices – not all farming practices are necessarily bad for the environment, especially sustainable farming. As such, opponents of a meat tax have proposed several alternative policies:

1. Subsidising healthier food choice

To drive down consumption of meat, consumers should be able to access cheaper alternatives. A good way to change consumer's behaviour and hence, the production of meat is to subsidise the production of healthier food such as fruits, vegetables, legumes and nuts.

2. Subsidise sustainable livestock farming practices

If sustainable livestock farming practices can be made cheaper, through subsidies, farmers could have greater incentives to adopt these practices. The sustainable livestock farming practices include the use of organic feed and fertilisers, animal supplements and vaccines that can cut the methane emissions during the animals' digestion process. This could even lower the pressure on meat prices.

3. Empower consumers at all income levels to make more sustainable purchasing decisions

This means investing in education to consumers on ways to achieve healthier diets. It could mean clearer food labelling and display of nutrition information, as well as campaigns to promote the benefits of eating plant-based diet instead.

Source: World Economic Forum, 21 May 2022

Questions

(a) Table 1 shows various global food commodity prices. Compare the **key** changes in global food prices and global meat prices between 2017 and 2022. [3]

(b) **(i)** With reference to Extract 1, explain **one demand** and **one supply** factor that have caused the global food prices to rise. [4]

(ii) In Extract 1, it was mentioned that food protectionism has severely impacted developing countries that rely on international markets for food imports.

With the aid of a diagram, explain the impact of 'food protectionism' on the food import expenditure for developing countries. [5]

(c) **(i)** Define opportunity cost. [1]

(ii) Using the information in Extract 2, explain how the concept of opportunity cost can be used to justify the Singapore government's decision to increase local food production. [3]

(d) With reference to Extract 3, comment whether fresh water has the two characteristics of a public good. [6]

(e) With reference to Extract 3, discuss whether efficiency or equity issues are more important for a government to intervene in the market for meat. [8]

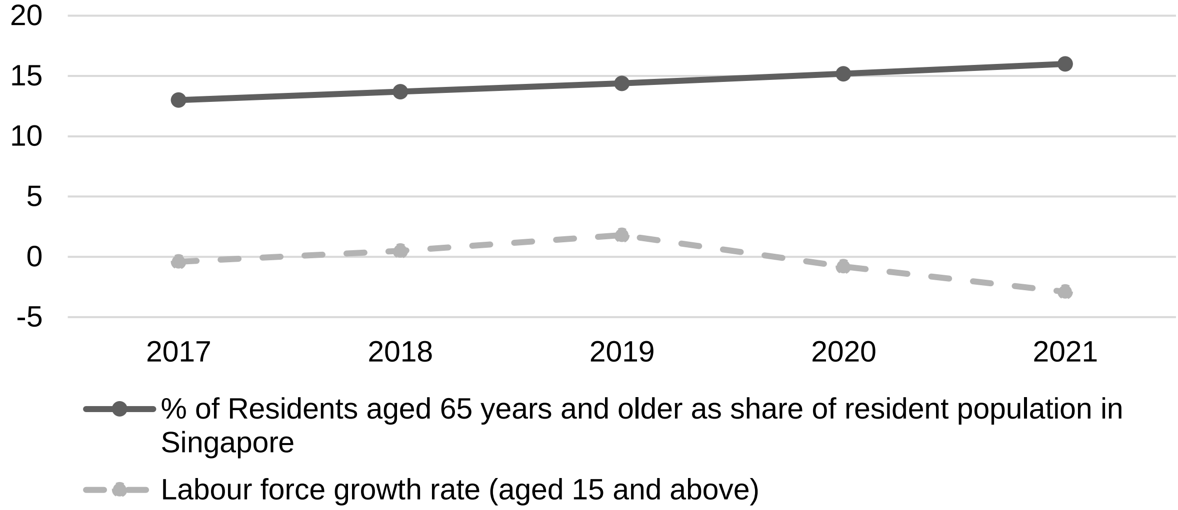
(f) With reference to the case study materials and/or your own knowledge, discuss whether a meat tax is the best policy to achieve an efficient and equitable outcome in the market for meat. [10]

[Total: 40]

Answer **all** questions

Question 2: Economic Impact of an ageing population

Figure 1: Population and Labour data of Singapore (in %)



Source: Singapore Department of Statistics & Statista, accessed on 23 July 2024

Extract 5: The costs of ageing

The number of people aged 65 years or older worldwide is projected to more than double, rising from 761 million in 2021 to 1.6 billion in 2050. The number of people aged 80 years or older is growing even faster. Population ageing is an irreversible global trend. It is the inevitable result of the demographic transition – the trend towards longer lives and smaller families – that is taking place even in countries with relatively youthful populations. As fertility levels fall, the share of younger people declines, while the shares of working age adults and, eventually, older people go up. Further population ageing is driven by more people living longer, healthier lives.

Ageing societies may face fiscal challenges due to rising costs in healthcare, long-term care, retirement and other old-age support, combined with a potential reduction in government revenue from fewer working-age taxpayers. Projections indicate that typically these programs will be unsustainable unless taxes are raised, benefits are reduced, or both.

Ageing societies tend to experience slower economic growth. However, economists are worried that even as Central Banks drive interest rates to fall, some firms may choose to cut investment spending in the domestic economy. Should firms become pessimistic, economy could have zero growth with high unemployment for many years.

Source: United Nations, Jan 2023
and: Cost of Ageing, Finance & Development, March 2017, Vol 54, No.1

Extract 6: Can ageing spark a surprise economic boom?

An ageing population could spur economies to adopt the use of greater technology alongside higher life expectancy to increase productivity the working population. This could potentially offset losses from a shrinking labour force. Some analysts predict that while ageing might slow down the country's Gross Domestic Product (GDP) growth rates, it may be unlikely to affect real income per capita – which is what matters most to people.

As a country's population growth slows or declines, a lower GDP growth doesn't necessarily mean that per capita income growth is slowing down. In addition, the population in such economies would have the chance to accumulate lots of capital for investment in their own health and education, since they have fewer dependents to spend on. This leads to a country which has more knowledgeable and experienced people. If governments are forward-looking and act early, encouraging such behaviour, this can potentially lead to improved productivity over longer lifespans. This could better prepare them for better jobs with higher pay in the future. Some research has suggested that ageing societies adopt labour-saving technologies more rapidly than younger societies, leading to them being more capital-intensive, hence, possibly earning higher per capita income than other countries.

Source: Adapted from Al Jazeera, Old is gold: Can ageing spark a surprise economic boom? 6 Jun 2023

Extract 7: Raising government revenue in Singapore as demographic changes

To keep up with increased spending in areas such as healthcare, the Singapore government faces some delicate trade-offs if it decides to raise revenue through higher personal income taxes, on top of the Goods and Services Tax (GST) hike. The structure of personal income tax in Singapore is generally progressive, which helps with income distribution. However, the trade-off includes balancing any possible increase in personal tax for higher-income earners with the need for Singapore to remain attractive to foreign talent.

This higher level of government spending is mostly being driven by increased spending in healthcare due to an ageing population. Proponents of a tax hike said that raising taxes is a "necessary evil" for Singapore if it wants to keep looking after the needs of an ageing population and improve its infrastructure. If revenue growth cannot match the spending pace, then something has to give – usually that's when governments run persistent budget deficits or pile up debts, which could lead to a debt burden on future generations.

Among potential sources of additional revenue, the GST is attractive in that it is an efficient tax, with a relatively low cost of collection and administration. Compared with income and wealth taxes, GST is imposed on all expenditure and its revenue is less correlated with business cycles and is therefore more stable and predictable. This is why most countries, developed and developing, have adopted a GST or value-added tax, many at rates higher than Singapore's. The drawback is that GST is a regressive tax. However, it is important to assess a fiscal system in its totality. The regressive impact of the GST is offset by progressive income taxes and significant fiscal transfers including subsidies on groceries and wage supplements which tops up the salaries of low-income workers to save for retirement. In fact, the expansion of these transfers has increased the overall progressivity of the system over the past two decades.

Source: Today, 10 February 2023 and Channel News Asia, 23 Jan 2022

Extract 8: Possible solutions to challenges due to ageing population

In recent years, many governments have taken on an added urgency to deal with their manpower and talent issues due to falling birthrates and a rapidly ageing population – which will add up to a drop in the number of working-age adults.

In Singapore, some suggest a need for foreign manpower and talent, amid its ageing and shrinking workforce. Foreigners are useful, especially in certain high skilled areas where there are just not enough Singaporeans and not enough time to train the Singaporeans to take advantage of the economic opportunities. However, there are Singaporeans who feel unhappiness, citing increases in competition for jobs, and prices of essential goods and services.

To reduce the immense pressure on welfare systems and the ratio of working-adults supporting a higher number of elderly people, governments are also raising the retirement age. For example, in Singapore, the retirement age is currently 63 years old and is expected to increase to 64 by 2026. Below is a Table showing the percentage of residents aged 65 and above who are employed or actively looking for a job across the years.

2018	2019	2020	2021	2022
27.8	28.7	30.1	32.9	32.1

Another solution is to raise productivity, which has been dragged down by inadequate investment in public infrastructure. Productivity could also be enhanced by cutting red tape to encourage investment and starting new businesses. For example, it takes 120 days to obtain a business license, more than double the OECD average. Digitalizing government services could also speed up processes. Singapore emphasizes greatly on the transformation of businesses, workers skills and embracing technology.

Sources: Channel News Asia, 10 June 2024,
and: Business Times, 28 Feb 2024
and: World Economic Forum. 27 Apr 2017

Questions:

(a) With reference to Figure 1, state the change in size of labour force from 2018 to 2021 and explain how this change could affect the labour market in Singapore. [5]

(b) With reference to Extract 5, explain why the Central Banks would 'drive interest rate to fall' and suggest a reason why this would not always be effective. [5]

(c) **(i)** Explain the meaning of real GDP per capita. [2]

(ii) Explain two possible reasons why real income per capita may not fall despite a slowdown in the GDP growth rate. [4]

(d) In Extract 7, it was mentioned that tax hikes are a 'necessary evil' for Singapore.

With reference to Extract 7, comment on whether the Singapore government should raise income tax for higher income earners or implement a GST hike to increase its tax revenue. [6]

(e) Using aggregate demand and aggregate supply analysis, discuss the view that the costs of an ageing population outweigh the benefits to an economy. [8]

(f) According to Extract 8, some countries are adopting labour policies to address the challenges of an ageing population.

Discuss whether a country should increase immigration or increase productivity to achieve higher economic growth in the future. [10]

[Total: 40]

End of paper