H

RAFFLES INSTITUTION
2024 YEAR 6 TERM 3 TIMED PRACTICE
Higher 2

ECONOMICS 9757/01

Paper 1: Case Study **June 2024**

1 hours 15 minutes

Additional Materials: Answer Paper

READ THESE INSTRUCTIONS FIRST

Write your name, index number and civics class on all the work you hand in.
Write in dark blue or black pen on both sides of the paper.
You may use a soft pencil for diagrams, graphs or rough working.
Do not use paper clips, highlighters, or correction fluid.

Answer **ALL** questions in Paper 1: Case Study

Indicate the **question number** clearly

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

This document consists of **4** printed pages.

Raffles Institution

Question 1: Water challenges and policies

Extract 1: UK's water industry crisis

Financial trouble at the company that supplies more than a fifth of the UK population with water has raised alarm about the dire state of an industry that delivers a resource people can't live without. The problems are most acute at Thames Water, London's water utility, but the wider industry across England and Wales is struggling to deliver a reliable service under the weight of huge debts built up since it was sold to private investors over 30 years ago.

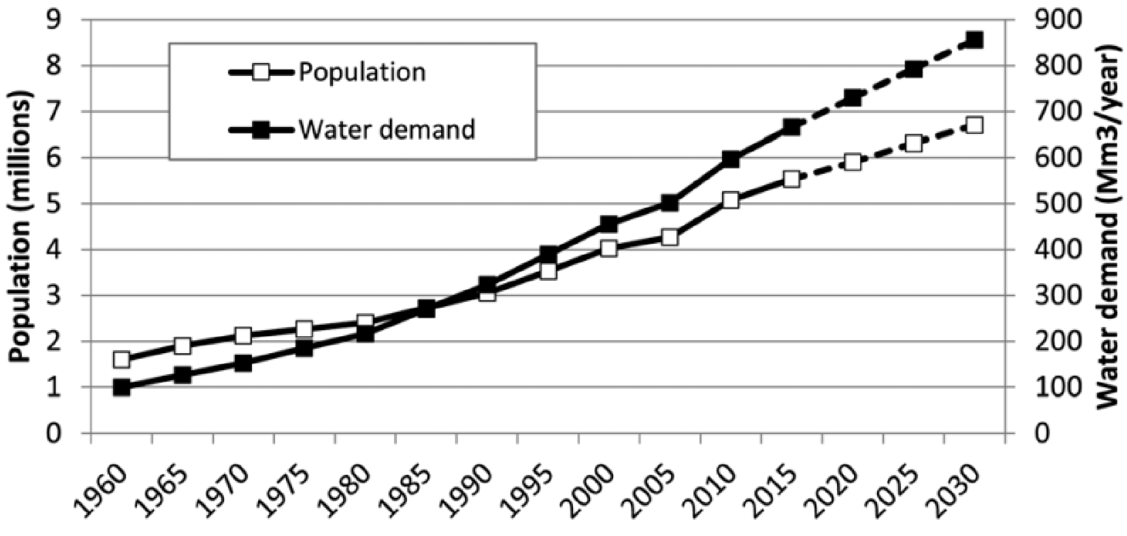
The UK water sector is "clearly in a state of multiple crises," said Dieter Helm, a professor of economic policy at the University of Oxford. The day job of maintaining the assets has not been done very well, and in some cases very badly," Helm told CNN, adding that sewage spills into rivers and coastal waters are routine, leakage is enormous, service is poor, and water bills are high — and could go even higher starting in 2025 as mountains of debt make it hard for companies to fix those problems.

Water companies in England and Wales were privatised under Margaret Thatcher's Conservative government in 1989 and were granted a licence to operate from the industry regulator, Ofwat, and are responsible for providing water exclusively for a particular geographical area. This, combined with significantly high infrastructure costs from maintaining an extensive network of pipelines, restricts the chance for new companies to enter the market. The privatisation was done with the rationale that this would unleash the vast investment required to upgrade Britain's Victorian-era sewage network. But not enough has materialized because money has been taken out, not put in. Profits from water companies has been diverted to paying shareholders as dividends instead of investing in critical water infrastructure.

The UK government has held emergency talks over the future of Thames Water. Visiting professor at the University of Greenwich, David Hall, said the government should find a way of bringing the water companies back into public ownership, as it had done with the rail network. No other country in the world "has sold the entire system to private companies," he added.

Source: CNN, 8 July 2023

Figure 1: Population and water demand in Singapore



Extract 2: Predicted future water shortages

With the world facing a water crisis, Singapore must not take what it has for granted as clean, fresh water is a precious resource, said Deputy Prime Minister Lawrence Wong on Saturday. Mr Wong said that billions of people around the world struggle to get enough water, and within Asia, hundreds of millions still do not have access to clean and fresh drinking water. The problem is likely to get worse, with experts expecting global demand for fresh water to outstrip the supply of fresh water by 40 per cent by the end of the decade due to over-depletion and mismanagement, he said.

While the Republic's water situation has improved over the decades, more has to be done to ensure secure supplies for future demand, which is estimated to double over the next 30 years to meet growing population and economic needs, said Mr Wong. Meanwhile, he added, climate change is making the weather even more extreme and unpredictable all around the world. Singapore is seeing unusually heavy rainfall, as well as more frequent and prolonged dry spells, thus affecting the water catchment yield in Singapore.

Source: The Straits Times, 20 March 2023

Extract 3: Ensuring Singapore's water security

The centrality of water to Singapore's existence is best summed up by then Minister Mentor Lee Kuan Yew's remark in a 2008 speech that "every other policy has to bend at the knees for our water survival". Today, Singapore has four "national taps" comprising water from local catchment, imported water from Malaysia, reclaimed used water (called Newater), and water from desalination.

National water agency, Public Utilities Board (PUB) recently announced an increase in the price of water by 50 cents per cubic metre, to be implemented over 2024-25, due to the rising cost of producing and supplying water. This represents a 2.5 per cent per annum increase since the last price revision in 2017. The appropriate pricing of water is foundational for managing water demand and ensuring its efficient use. Singapore prices water to reflect its value as a scarce resource. Hence, the price of water is pegged to the marginal cost of producing and supplying the next drop of water.

Besides pricing, regulations and standards play an important role in driving water conservation and efficient use. For instance, PUB requires water fittings and appliances such as washing machines and dishwashers to have water efficiency labels. Since April 2019, only water fittings with a minimum water efficiency rating of two ticks are permitted for installation in new premises and those undergoing renovation. Public education and behavioural nudges are also important in shaping consumption habits. For instance, public utility bills show national and neighbourhood average water consumption to encourage households to trim water use. PUB is also deploying smart water meters across residential, commercial and industrial premises.

Along with demand management, there must be adequate investment in water capacity ahead of the anticipated increase in demand. Looking ahead, the lion's share of Singapore's water demand is expected to be met through water reclamation and desalination, especially since these sources are not dependent on rainfall. However, these sources of water are also more expensive than water catchment and imported water. Effort must therefore be made to lower the cost through research and innovation. For instance, PUB has been trialling the use of different types of membranes to improve the efficiency of the desalination process. At the end of the day, long-term water costs and affordability should be among the outcomes prioritised under Singapore's water research agenda.

Source: Terence Ho, Lee Kuan Yew School of Public Policy, 29 September 2023

Questions

a)	Using Figure 1, compare the trends of population and water demand in Singapore.	[2]
b)	Explain why PUB pegs the price of water to the "marginal cost of producing and supplying the next drop of water" as mentioned in Extract 3.	[2]
c)	With the aid of a diagram, explain how the "sewage spills into rivers and coastal waters" (Extract 1) affects social welfare in UK.	[5]
d)	With reference to Extract 1, explain why a water company in a particular geographical region can be considered a natural monopoly.	[3]
e)	In view of the crisis in the UK water industry, discuss whether the UK government should nationalise Thames Water.	[8]
f)	Given the expected future water shortages in Singapore, discuss whether the government policy of raising the price of water is the only appropriate way to address this.	[10]

Total: 30 marks

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Extract 1	© CNN, 8 July 2023
Figure 1	© Closing the urban water loop, September 2015
Extract 2	© The Straits Times, 20 March 2023
Extract 3	© Terence Ho, Lee Kuan Yew School of Public Policy, 29 September 2023