

Section A

Answer **all** questions.

Question 1

Water Woes

Extract 1: Four billion people face severe water scarcity

A new research has revealed that at least two-thirds of the global population, over 4 billion people, live with severe water scarcity for at least one month every year. Besides, 500 million people live in places where water consumption is double the amount replenished by rain for the entire year, leaving them extremely vulnerable as underground water run down.

Small economies like Singapore is inevitably affected given the limited water resource. However, larger economies such as Thailand is also not spared by this crisis.

Source: *The Guardian*, 12 Feb 2016

Extract 2: Water price hike in Singapore

Water prices in Singapore will increase for the first time in 17 years. The government determined prices will go up by 30 percent in two phases. The first hike will be from July 1 in 2017, and the second from July 1 in 2018.

"Water prices were last revised in 2000, almost 20 years ago. We need to update our water prices to reflect the latest costs of water supply," Finance minister Mr Heng said in the 2017 Budget speech in Parliament.

The country gets water from four National Taps - NeWater, water from local catchment areas, desalination and imported water.

Linggiu Reservoir in Johor supplies about 60 percent of Singapore's water needs. With more unpredictable weather patterns, water levels at this reservoir have been falling and thus there is an urgent need to strengthen our local water sources. The price increase will go towards maintaining Singapore's water infrastructure, and more expensive sources of water such as desalination.

Singapore now uses 430 million gallons of water a day, with the domestic sector (households) accounting for 45 percent, and the non-domestic sector (businesses), the rest. Water demand is expected to more than double by 2060 in tandem with population and economic growth, and every additional drop of water will have to come from more expensive water sources. In addition, the cost of water transmission has increased as Singapore lays deeper pipes in an urbanised environment. Hence the increase in price will reflect the true cost of water.

But lower and middle-income households will get help to manage the increase in water prices. Households in one-room and two-room flats will be receiving U-Save utilities rebates of up to \$380 for the year, an increase of \$120 from \$260. Three-room flat households will get an increase of \$100 in U-Save utilities rebates, four-room flats an increase of \$80 and five-room flats \$60. Executive and multi-generational flat households will get \$40 more. These increases are permanent and will cost an additional \$71 million a year. After subsidies, 75 percent of HDB households should see an increase of less than \$12 a month in their water bills. Households in one-room and two-room flats will not see any increase in their bills, Mr Heng said.

Source: *The Straits Times*, 20 February 2017

Table 1: Singapore revised water price for households and industrial users

	Households (potable water ¹)				Industrial Users (non-potable water ¹)	
	Price (\$/ m ³)					
	Phase 1: From 1 Jul 2017		Phase 2: From 1 Jul 2018		Phase 1: From 1 Jul 2017	Phase 2: From 1 Jul 2018
Monthly Water Usage	0 – 40m ³	> 40m ³	0 – 40m ³	> 40m ³		
Water Tariff (i.e. Price of water)	\$1.19	\$1.46	\$1.21	\$1.52	\$0.66	\$0.66
Water conservation tax	\$0.42	\$0.73	\$0.61	\$0.99	-	-
Waterborne Fee ²	\$0.78	\$1.02	\$0.92	\$1.18	\$0.78	\$0.92
Total Price of water	\$2.39	\$3.21	\$2.74	\$3.69	\$1.44	\$1.58

1. Potable water is water of a quality suitable for drinking, cooking and personal bathing and non-potable water is water that is not of drinking quality.
2. The Waterborne Fee (WBF) goes towards meeting the cost of treating used water and maintaining the used water network.

Source: www.pub.gov.sg, accessed 13 Aug 2018

Extract 3: Billion-dollar dams are making water shortages and contributing more towards global warming, not solving them

The world has spent an estimated \$2 trillion on dams in recent decades, with each dam costing more than \$1.5 billion. Many nations see dams as an important way to fight climate change – dams are built to control floods, improve irrigation, alleviate water shortages and generate low-carbon hydroelectricity to replace power stations that burn fossil fuel. But recent findings by experts seem to suggest otherwise.

Almost a quarter of the global population experiences significant decreases in water availability through human interventions on rivers, says Ted Veldkamp at Vrije University in Amsterdam, the Netherlands. Veldkamp and her colleagues found a drastic reshuffling of water-scarcity hotspots over time, with mostly people upstream benefitting from the capture of river flows, but those downstream left high and dry.

Richard Taylor, CEO of the UK-based International Hydropower Association, which represents many dam builders, dismissed the findings. “The major driver of building a reservoir is to store fresh water so as to smooth the irregularity of natural flows, absorb floods and guarantee minimum flows during drought periods,” he says. “These fundamental services are exclusively downstream benefits.”

Besides, hydroelectric dams contribute more to global warming than previously estimated, according to a study published in *BioScience*. Researchers found that rotting vegetation in the water means that the dams emit about a billion tonnes of greenhouse gases every year. This represents 1.3% of total annual human-caused global emissions. When considered over a 100-year timescale, dams produce more methane than rice plantations and biomass burning, the study showed.

“Methane stays in the atmosphere for only around a decade, while CO₂ stays several centuries, but over the course of 20 years methane contributes almost three times more to global warming than CO₂, a relevant period for policymakers,” she added.

Source: *New Scientist*, 15 June 2017 and *The Guardian*, 14 November 2016

[Turn over

Extract 4: Thailand's drought crisis in 2016

Thailand is facing its worst drought in 20 years. Parts of the country are so dry that roads lining empty canals have collapsed. National park officials have built ponds to sustain wildlife, while irrigation officials are pumping water from the dregs of a dam. Bangkok's administrators announced in March they would be cutting short the April's Songkran festival - which normally draws hundreds of thousands of tourists to one of the world's biggest water fights.

The agricultural sector is often the first to be affected by droughts as production declines, especially in rice crop. Thailand is one of the world's top producers of rice, exporting more than 10 million tonnes annually. As a result of the drought, the Thai government has lowered its forecast rice exports for this year by 2 million tonnes. The fall in agricultural production due to the drought will cause an approximately 20 billion baht loss in purchasing power among farmers.

The drought is expected to cut economic growth by 0.6 to 0.8 of a percentage point this year. And if the dry weather continues after mid-year, the drought will expand further, encroaching the industrial, and tourism sectors, as well as the supply of water for human consumption. The damage could reach 154 billion baht and this is bad news for the government whose finances are already in the red.

However, every cloud has a silver lining. So with the drought crisis comes water-related business opportunities. Businesses related to water management, electronics equipment and systems for water technology, as well as other water-related businesses will be in high demand in the near future. Moreover, farmers who can adapt their agricultural lands to meet changing water resource conditions can start new businesses through knowledge-sharing with other farmers as the consultant.

Source: Various

Questions

- (a) With reference to Table 1,
- (i) compare the change in total price of water for households and industrial users from phase 1 to phase 2. [2]
 - (ii) explain **two** reasons why total price of water is higher for households than industrial users. [4]
- (b) Use a demand and supply diagram and relevant elasticity concepts to explain why price of water in Singapore would have risen sharply without government intervention. [6]
- (c) Explain why subsidising water for low-income households through U-save rebates can be justified on the grounds of equity and comment on whether such rebates are indeed equitable. [7]
- (d) (i) Explain why price mechanism fails to produce public goods such as dams. [6]
- (ii) Discuss the factors that a government should consider when deciding to build a new dam. [8]
- (e) With reference to case materials and/or your own relevant knowledge, discuss the impact of the water crisis on Thailand's standard of living. [12]

[Total: 45]

[Turn over

Question 2: Economic Issues and Policies in Singapore

Extract 5: Housing market in Singapore affected by US Fed's policy

United States (US) employment rose more than expected for the second month in a row in July 2016 and wages picked up, bolstering expectations of faster economic growth, and raising the probability of a Federal Reserve (Fed) interest rate increase this year. Non-farm payrolls rose by 255,000 jobs after an upwardly revised 292,000 surge in June, with hiring broadly based across the sectors of the economy, the Labour Department said on Friday. In addition, 18,000 more jobs were created in May and June than previously reported. Economists polled by Reuters had forecast payrolls increasing 180,000 in July and the unemployment rate dipping one-tenth of a percentage point to 4.8 percent.

"The July jobs report was everything you could have asked for and more. Provided the strength in jobs is confirmed with other economic data, the Fed will have sufficient reason to hike rates this year," said Michelle Meyer, a senior economist at Bank of America Merrill Lynch in New York. Last month's strong jobs growth should reinforce the Fed's confidence in a labour market that officials view as at or near full employment. Fed Chair Janet Yellen has said the economy needs to create just under 100,000 jobs a month to keep up with population growth.

With the Fed widely expected to start hiking interest rates next month, interest rates in Singapore would likely to head higher as well. Higher borrowing cost of housing loans is likely to disincentivise households to buy property. Hence, this weakens the housing market in Singapore and dampens the construction activities.

Source: *CNBC News*, 23 November 2016 and *Reuters*, 4 August 2016

Extract 6: Singapore adopts 2008 crisis policy in anticipation of economic slowdown

Most countries, including the United States and China, adopt an interest rate policy where central banks raise or cut interest rates. Singapore is the only major economy in the world to use the Singapore dollar nominal effective exchange rate (S\$NEER), where it is managed against a trade weighted basket of currencies of her major trade partners. The Monetary Authority of Singapore (MAS) would adjust the pace of S\$NEER appreciation or depreciation by changing the slope, width and centre of a currency band. MAS says the exchange rate is the best tool for a small, open economy like Singapore. It is a more effective way to manage inflation, as much of the country's goods are imported.

Since October 2012, the broad policy stance has been of a "modest and gradual appreciation" of the Sing dollar. In anticipation of an economic slowdown in 2016, MAS unexpectedly eased its monetary stance in April 2016, adopting a policy last used during the 2008 global financial crisis, as economic growth in the trade-dependent city state ground to a halt. The MAS moved to a neutral policy of zero percent appreciation in the exchange rate. This means that MAS has flattened the slope of the band it uses to guide the S\$NEER against an undisclosed trading basket, reducing the rate of appreciation to zero percent. The market had not been expecting the MAS to take such a bearish stance in its April meeting.

The announcement came two days after the International Monetary Fund (IMF) warned of the risk of negative shocks to the global economy. As Asia's financial hub, Singapore is feeling the effects of the global downturn and China's weakening economy. Soon after the release of news on the shift of policy stance, the Sing dollar tumbled to \$1.36 levels to the US dollar, a sharp depreciation (within the currency band) from Wednesday's \$1.35 levels. A similar trend was also observed for Sing dollar against the Malaysian Ringgit.

[Turn over

A monetary easing follows an expansionary budget announced by Finance Minister Heng Swee Keat, indicating how severe authorities view the slowdown as businesses shut and growth in bank loans contract. The government spending is expected to be \$5 billion higher than in 2015 and the increases are mainly for public infrastructure projects in the healthcare, education, security and urban development sectors.

“It seems that Singapore is using both fiscal policy and the exchange rate to address the situation,” said Weiwen Ng, an economist with Australia & New Zealand Banking. Singapore’s services industry, which makes up about two-thirds of the economy, contracted in the first quarter from the previous three months, the first decline since the first quarter of 2015 although manufacturing and construction rebounded strongly in the first quarter. “The economy remains mired in an extended spell of deflation and steadily lower growth,” said Andrew Wood, an economist with BMI Research in Singapore. The currency adjustment was needed because “Singapore’s competitiveness has taken a hit,” he said.

Source: Various

Table 2: Selected Indicators of Singapore

	3 rd Qtr 2015	4 th Qtr 2015	1 st Qtr 2016	2 nd Qtr 2016	3 rd Qtr 2016
GDP quarter-on-quarter growth rate at 2010 prices, seasonally adjusted	6.2	2.0	0.1	0.2	-4.1*
CPI (base year = 2014)	99.4	99.1	98.9	98.7	99.0^
Changes in employment ('000)	12.6	16.1	13.0	4.2	NA
Exports (year-on-year % change)	-8.0	-5.7	-11.6	-4.7	-3.4^
Imports (year-on-year % change)	-9.1	-9.9	-7.4	-6.7	-6.7^

*Advance estimates for 3rd Quarter 2016

^After implementation of zero percent appreciation of Sing dollar in April 2016

Source: *Ministry of Trade and Industry Singapore* and *MAS Macroeconomic review*, Oct 2016

Figure 1: Crude oil price per barrel in USD



Source: *US Energy Information Administration*

Questions

- (a) (i) Explain why interest rates in Singapore would likely to head higher when the Fed raises interest rates. [3]
- (ii) Use demand and supply analysis to explain how an increase in interest rate mentioned in Extract 5 might affect the total revenue of the housing market and comment whether it would have the same impact on the construction industry. [5]
- (iii) Explain the likely impact of a rise in US interest rates on Singapore's economic growth in the short run. [4]
- (b) In the light of strong employment data mentioned in Extract 5, to what extent would you agree that the Fed should raise interest rates? [6]
- (c) The government spending is expected to be \$5 billion higher than in 2015 and the increases are mainly for public infrastructure projects in the healthcare, education, security and urban development sectors (Extract 6).
- (i) With reference to Table 2, what can you conclude about the fourth quarter GDP growth rate if Singapore were to slip into a technical recession in 2016? [2]
- (ii) Explain **two** reasons why the Singapore government chooses to increase spending on merit goods such as healthcare. [4]
- (iii) Explain how increased government spending on infrastructure would affect the economic growth and employment of Singapore and comment on whether this would lead to conflicts between government macroeconomic objectives. [9]
- (d) Using case evidence and/or your own relevant knowledge, discuss whether MAS should adopt zero percent appreciation of the S\$NEER in anticipation of an economic slowdown. [12]

[Total: 45]

End of Paper

Copyright acknowledgments:

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Question 1 Extract 3	© The Guardian, "Hydroelectric dams emit billion tonnes greenhouse gases a year", 14 November 2016
	© New Scientists, "Billion dollar dams are making water shortages, not solving them", 15 June 2017
Question 1 Extract 4	© SCB Economics Intelligence Center, "Thailand's drought crisis 2016: Understanding it without the panic", 24 March 2016
	© The Straits Times, "Drought exacts toll on crops in region", 20 March 2016
	© Mekong Institute, "Thailand's drought and the havoc it brought", 1 April 2016
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	© Reuters, "Strong U.S. employment report brightens economic outlook", 4 August 2016
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	© The Straits Times, "10 things you should know about Singapore's monetary policy", 13 October 2015
	© The Straits Times, "Singdollar tumbles after surprise MAS easing", 14 April 2016
	© The Straits Times, "MAS monetary policy shifts – what's the significance", 14 April 2016
Question 2 Table 2	© Ministry of Trade and Industry Singapore, Press Release on 14 October 2016
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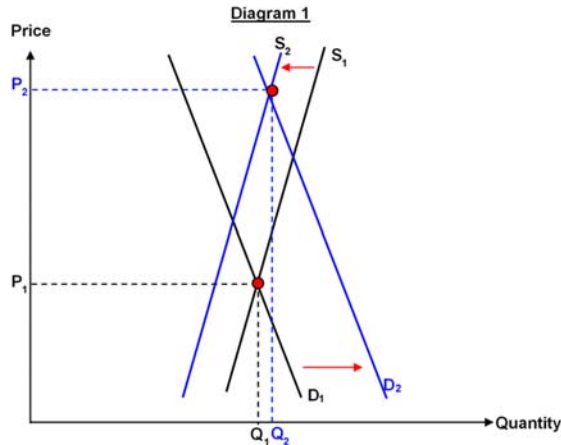
 Hwa Chong Institution H1 Economics Prelim 2018 CSQ1 Suggested Answers

(a)	With reference to Table 1,		
	(i)	<p>compare the <u>change</u> in total price of water for household and industrial users from phase 1 to 2.</p> <p>Total price of water for household and industrial users increase. However, the total price of water for household users increase at a higher percentage as compared to industrial users</p>	[2]
	(ii)	<p>explain two reasons why total price of water is higher for households than industrial users.</p> <p>2m for each reason <u>Water conservation tax</u> is included in the price of water for household users but not industrial users This is to reduce the consumption of potable water by households to cut wastage.</p> <p><u>Higher waterborne fee (WBF)</u> is imposed on households compared to industrial users. The Waterborne Fee goes towards meeting the cost of treating used water and maintaining the used water network. In this case, more treatment is required to treat water for household consumption.</p>	[4]
(b)	<p>Use a demand and supply diagram and relevant elasticity concepts to explain why price of water in Singapore would have risen sharply <u>without government intervention</u>.</p> <ul style="list-style-type: none"> • Explain a reason for a fall in supply with evidence together with price inelastic demand (up to 3m) • Explain a reason for a rise in demand with evidence together with price inelastic supply (up to 3m) • <i>Note: First two points will be a total of 5m.</i> • Combined effect with use of diagram (well-labelled) (1m) <p>The demand for water in Singapore expected to rise from D1 to D2 as shown in diagram (1) due to an increase in number of consumers. Extract 2 states that “water demand is expected to more than double by 2060 in tandem with population and economic growth”. (elaborate based on 1 factor)</p> <p>The supply of water is price inelastic due to the long time period needed to develop new water sources (e.g. to construct a new desalination plant) (or some other reasonable & contextually appropriate PES factor).</p> <p>Increase in demand → increase in P more than proportionately compared to Q The supply of water in Singapore is falling due to supply shocks. Extract 1 states that water levels at the Linggiu Reservoir in Johor, which supplies about 60 per cent of Singapore’s water needs, have been falling due to more unpredictable weather patterns.</p> <p>OR</p> <p>The supply of water in Singapore is falling due to higher unit cost of production. Extract 1 states that Singapore uses more expensive sources of water such as desalination to diversity its water sources in view of severe water scarcity, especially evident from fall in water level in Linggiu Reservoir in Johor. Furthermore, the cost of water transmission has increased as Singapore lays deeper pipes in an urbanized environment which is more costly.</p> <p>The demand for water is price inelastic as it is a necessity for basic survival (or some other reasonable & contextually appropriate PED factor).</p>		[6]

Decrease in SS \rightarrow increase in P more than proportionately compared to Q

Combined analysis

Hence as shown in diagram 1 below, both factors reinforced each other and hence the market equilibrium price to increase sharply from P_0 to P_1 .



	<p>(c) Explain why subsidising water for low-income households through U-save rebates can be justified on the grounds of equity and comment on whether such rebates are indeed equitable. [7]</p> <p>Explain (4m) It can be justified on grounds of equity.</p> <ul style="list-style-type: none"> • Water is a basic good that should be made affordable even to low income households. • However, in a free market, only those with the purchasing power/dollar votes will be able to have access/afford. • Giving lump sum U-save rebates reduces the price of water and hence gives such households a basic level of purchasing power to ensure a basic level of consumption of water. • From Extract 2, “Households in one-room and two-room flats will not see any increase in their bills” implies that they still will be able to enjoy their existing levels of water consumption after water price hikes, which does not affect them as rebates are provided. <p><i>L2 (3-4) Ability to explain how U-save rebates is justified on grounds of equity.</i> <i>L1 (1-2) Brief explanation on equity (tends to be descriptive) without use of case evidence</i></p> <p>Comment (3m):</p> <p>However, such rebates may not be entirely equitable (may not achieve aim) as:</p> <ul style="list-style-type: none"> • The subsidies are based on type of housing rather than the more accurate measure of the household income level • It assumes that the type of housing is a good estimate of income level • The subsidies ignore the number of person per household. <p><i>Note: There is a need to show an attempt to provide judgement for full credit Some students may say that it is a normative issue. So there is no clear-cut answer on whether it is indeed equitable.</i></p> <p><i>E2 (2-3) Shows ability to use case evidence to analyse that rebates are not entirely equitable</i> <i>E1 (1) Listing of unsubstantiated point(s)</i></p>	
<p>(d) (i)</p>	<p>Explain why price mechanism fails to produce public goods such as dams. [6]</p> <p>Explain dams are non-rivalrous and non-excludable in consumption (3m); Based on the 2 characteristics, explain why price mechanism fails to produce dam (3m)</p>	

	<p>Dam is non-excludable in consumption. Once a dam is provided, there is no inexpensive or practical way to restrict the availability of a dam to only people who pay for their use since it is such a massive infrastructure.</p> <p>Dam is also non-rivalrous in consumption. The use of a dam by one person will not reduce the amount of dam (service such as storage of water) available to others. The benefit of dam can be shared jointly by everyone who happened to be in the vicinity that has such infrastructure.</p> <p>As a result of the characteristics of non-excludability, once a dam (public good) is provided, non-payers can free-ride on the good. Hence, no rational consumer motivated by self-interest will reveal his effective demand.</p> <p>As a result of non-rivalry, the marginal cost of providing a public good to an additional consumer or user is zero. Since the optimal or allocative efficient quantity to supply is where Price (P) = Marginal Cost (MC), the efficient price to charge for the use of public good should be zero. However, this means that no private firm in a free market can supply it profitably and hence the market fails to allocate resources to produce such goods.</p> <p>In conclusion, due to the twin characteristics associated with public goods, it is not possible for free markets to supply such goods profitably.</p>	
(d) (ii)	<p>Discuss the factors that a government should consider when deciding to build a new dam.</p> <p>A government's goal is to maximise social welfare as well as to achieve macroeconomic objectives. A government would consider the following when deciding to build a new dam: private and external benefit, private and external cost, constraints, unintended consequences</p> <p>Structure Option 1</p> <p>Factor 1a: Private Benefit - Reason for use of dam</p> <ul style="list-style-type: none"> ○ This refers to the benefits enjoyed by economic agents that are directly derived from the operation of the dam ○ For example, the dam may result in improved irrigation thus benefitting the farmers in the surrounding region <p>Factor 1b: External Benefit - Reason for use of dam</p> <ul style="list-style-type: none"> ○ This refers to benefits enjoyed by 3rd parties i.e. people who indirectly benefit from the construction or operation of the dam ○ For example, when electricity is generated by the dam, the demand and hence production of electricity from other more polluting carbon sources is lowered, thus reducing global warming such that everyone else in the country benefit from less extreme weather conditions <p><i>Evidence: Many nations see dams as an important way to fight climate change – dams are built to control floods, improve irrigation, alleviate water shortages and generate low-carbon hydroelectricity to replace power stations that burn fossil fuel.</i></p> <p>Factor 2: Private Cost - spending on such infrastructure</p> <ul style="list-style-type: none"> ○ This refers to costs involved in the construction, operation and maintenance of the dam ○ Such cost would result in opportunity cost incurred in view of limited government budget (constraints) <p><i>Evidence: \$2 trillion on dams in recent decades, with each dam costing more than \$1.5 billion.</i></p> <p>Factor 4: Unintended consequences – External cost → Negative externalities</p>	[8]

	<ul style="list-style-type: none"> ○ External costs refer to cost suffered by 3rd parties i.e. people who are indirectly harmed from the construction or operation of the dam ○ For example, damming the river upstream may cause fishermen living downstream to suffer from lower water levels, reduced catch of fishes and hence lowered incomes <p><i>Evidence: Hydroelectric dams contribute more to global warming than previously estimated, according to a study published in BioScience. Researchers found that rotting vegetation in the water means that the dams emit about a billion tonnes of greenhouse gases every year</i></p> <p><i>a drastic reshuffling of water-scarcity hotspots over time, with mostly people upstream benefitting from the capture of river flows, but those downstream left high and dry.</i></p> <p><u>Reasoned conclusion/judgement</u></p> <p>Will build a new dam if social benefits > social cost, govt has sufficient budget Severity of unintended consequences Depends on priority of the govt (whether it is a significant need for an additional dam)</p> <p>L2 4-6 At least two factors discussed. Balanced consideration of both cost and benefits. For 5m and above, there should be 3 factors considered. L1 1-3 At least one factor discussed. Shows some understanding of cost-benefit analysis, but its largely descriptive.</p> <p>Up to 2m for final judgement</p>	
(e)	<p>With reference to case materials and/or your own relevant knowledge, discuss the impact of the water crisis on Thailand's standard of living.</p> <p>Introduction: Explain what is meant by SOL – includes material and non-material SOL Issue and approach – discuss impact of water crisis on Thailand's standard of living</p> <p>Part 1: Explain impact on material SOL</p> <p><i>Evidence: "agricultural sector is often the first to be affected by droughts as production declines, especially in rice crop. Most heavily affected crops this year is dry season rice (currently in harvesting season), over 3.4 million rai of which has already been grown throughout the country this year. The fall in agricultural production due to the drought will cause an approximately 20 billion baht loss in purchasing power among farmers, resulting in a more than 60 billion loss in the country's overall purchasing power."</i></p> <p><i>possible that the impact of the drought will expand further, encroaching the industrial, and tourism sectors, as well as the supply of water for human consumption.</i></p> <p><i>the drought is expected to cut economic growth by 0.6 to 0.8 of a percentage point this year, with predictions of an even more severe impact if the dry weather continues after mid-year</i></p> <p>Explain how water crisis → affects X (agricultural, industrial, tourism) and possible I, C negatively But G may increase</p> <ul style="list-style-type: none"> → Likely to be fall in AD overall → Slower/negative growth might be expected. → Lowers national income and hence household income → lowers ability to consume goods and services → Lowers material SOL 	[12]

However, not everyone are affected equally – only those in areas affected by drought. Farmers who can adapt their agricultural lands to meet changing water resource conditions may be less affected/not affected by droughts as they are able to negate/ minimise such effects. Their material SOL is not/less affected.

Furthermore, drought crisis comes water-related business opportunities. The higher demand for electronics equipment and systems for water technology, as well as other water-related businesses could increase their income → improve their material SOL instead.

In the long run, LRAS can also be negatively affected – dry lands + loss of investment (optional point) → reduces growth and hence material SOL for those who are affected by droughts. *Evidence: predictions of an even more severe impact if the dry weather continues after mid-year*

Part 2: Explain impact on non-material SOL

Evidence: The drought is expected to last until June, when the rainy season usually begins, costing the country about 119 billion baht. This is bad news for the government whose finances are already in the red. However, the damage could reach 154 billion baht if it continues until October.

May spend lesser on essentials that affects quality of live e.g. healthcare and education since there is opp cost of spending more on repair works affected by drought, building of ponds to sustain wildlife, possible subsidies to farmers, etc

Insufficient water for consumption → affects health as well

Patched lands and damaged roads → inconvenience to people affecting their quality of life

Conclusion – comment on overall impact (considering the extent)

Students can conclude that overall negative impact. But they can considered the extent SR/LR, different groups of people, how long the drought persists, effectiveness of govt intervention in the context of Thailand.

Marking descriptors

L3: 6-9 –

- Well-balanced and developed answer that covers both material and non-material SOL.
- There should be usage of economic concepts (AD/AS) AND usage of case evidence.
- Shows ability to discuss impact on different group of people

L2:3-5 – one sided answer (only on material OR non-material SOL) or weak development of analysis. It could be an answer that did not show good use of AD/AS analysis and/or insufficient link to standard of living

L1:1-2 – vague, descriptive or list-like answer

- EV:1-3 for valid evaluative comment. For maximum marks, there should be a thoughtful consideration of most of the issues that are relevant before reaching a considered judgement.

HCI H1 Economics Prelim CSQ2 Suggested Answers (updated 14 Sept 2018)

(a)	(i)	Explain why interest rates in Singapore would likely to head higher when the Fed raises interest rates.	[3]
		<p>SG has free capital mobility (i.e. open to capital flows) [1] OR Given Singapore's trade dependence (for both imports and exports), exchange rate has a stronger effect on Singapore's macroeconomic aims than interest rates.</p> <p>Hence, by choosing to manage its exchange rate, this means that it is impossible for MAS to also control interest rates / SG will be interest rate taker [1]</p> <p>Therefore interest rates in Singapore generally follow the interest rates of big economies like the US. When US i/r increase, SG i/r increase [1]</p>	
		(ii) Use demand and supply analysis to explain how an increase in interest rate mentioned in Extract 5 might affect the total revenue of the housing market and comment whether it has the same impact on the construction industry.	[5]
		<p><u>Explain [3m]</u> Link higher i/r to more expensive bank loans to a fall in DD for housing (1m) Lower DD causes both P and Q to fall (1m) TR which is $P \times Q$ will also fall (1m)</p> <p><u>Comment [2m]</u> Fall in equilibrium quantity of housing as explained above would imply a fall in the output for a construction firm, ceteris paribus. (Demand for construction services is a derived demand) This implies a fall in the demand for construction services → Fall in P & Q → Fall in revenue. [1]</p> <p>But if other sources of revenue such as from commercial building can offset the fall in TR from (residential) housing, TR may not fall (1m)</p>	
		(iii) Explain the likely impact of a rise in US interest rates on Singapore's economic growth in the short run.	[4]
		<p><u>Explain how AD of SG is affected [3]</u> Rise in i/r in US → Fall in AD → Negative growth (in theory) or Slower growth (with reference to case study context) in US Explain how negative growth/slower growth in US will lead to a fall/slower increase in demand for SG's exports c.p → Fall in AD OR Since SG is an i/r taker → i/r in SG will rise. Explain how higher i/r in SG will lead to a fall in autonomous C & I (with reference to MEI) → Fall in AD</p> <p><u>Explain impact on economic growth of SG [1]</u> Fall or Smaller increase in AD in SG → Fall in actual output or slower actual growth in SG OR Fall in C & I → Fall in AD in SG → Fall in actual output in SG</p>	
(b)	In the light of strong employment data mentioned in Extract 5, to what extent would you agree that the Fed should raise interest rates?		[6]
		<u>Yes</u> – More jobs were created in May and June than previously reported and the economists had forecast an increase in the number of new jobs in July and a fall in unemployment rate → The US is likely to be approaching full employment based on the employment data → The AD could be very near	

	<p>to Yf (very small output gap) and there is lack of excess capacity → Raise i/r to prevent high demand-pull inflation [3]</p> <p><i>“The July jobs report was everything you could have asked for and more. Provided the strength in jobs is confirmed with other economic data, the Federal Reserve (Fed) will have sufficient reason to hike rates this year,”</i></p> <p><u>No</u> –</p> <p>The jobs created are mainly for the nonfarm sectors but the farming industry could still face a high unemployment → The employment data is not sufficient to confirm that the economy is approaching full employment. E.g.inflation figures and inflation targets→ Need to gather other economic data to confirm this → Should not raise i/r now as more information is required to ascertain that the U.S. economy is near to or already at full employment level of output. [2]</p> <p>OR with the price of oil falling as seen in Figure 1, SRAS may be decreasing in the future if the trend persists that may offset the demand-pull inflation.</p> <p>OR</p> <p>Make a stand. [1]</p>	
(c)	<p>The government spending is expected to be \$5 billion higher than in 2015 and the increases are mainly for public infrastructure projects in the healthcare, education, security and urban development sectors (Extract 6).</p>	
(i)	<p>With reference to Table 2, what can you conclude about the fourth quarter GDP growth rate if Singapore were to slip into a technical recession in 2016?</p> <p>Negative growth rate [1]</p> <p>This is because a country is deemed to be in technical recession if there is negative economic growth for 2 consecutive quarters. [1]</p>	[2]
(ii)	<p>Explain two reasons why the Singapore government chooses to increase spending on merit goods such as healthcare.</p> <p>Government usually spend in the form of subsidies for merit goods, that is, goods deemed by the government as socially desirable but underconsumed when left to the free market.</p> <p>Positive Externalities of Healthcare [2]</p> <ul style="list-style-type: none"> • External benefits are benefits accrued by the third parties (<i>such as a pool of healthy and productive workforce for the economy</i>) and hence it results in a divergence between private and social benefits with $SMB > PMB$ • Explain Q_m is at $PMB=PMC$ and Q_s is at $SMB=SMC$ leading to underconsumption of healthcare <p>Imperfect Information for Healthcare [2]</p> <ul style="list-style-type: none"> • In the context of healthcare, consumers may not be very well informed of the actual benefits of healthcare (such as vaccination) hence there is a gap between PMB_{actual} and $PMB_{perceived}$. • Q_m at $PMB_{perceived}=PMC$ is lesser than Q_m' at $PMB_{actual}=PMC$ → underconsumption 	[4]
(iii)	<p>Explain how increased government spending on infrastructure would affect the economic growth and employment of Singapore and comment on whether this would lead to conflicts between government macroeconomic objectives.</p> <p><u>Explain the effect on economic growth and employment [5]</u></p> <p>Increase in G by \$5 billion → Increase in autonomous expenditure in the economy via discretionary fiscal policy → Increase in AD in the short-run [1]</p> <p>Increase in AD → Increase real GDP via the multiplier process → Actual economic growth [1]</p>	[9]

	<p>Infrastructure development in healthcare, education and urban development → Better quality of resources such as a more productive workforce and better infrastructure that facilitates transportation of goods [1] Increase in potential output in the long-run → Potential growth [1] Increase in output would increase the demand for labour since the demand for labour is a derived demand → Higher employment or lowers cyclical unemployment [1]</p> <p><u>Comment on the conflicts between government objectives [4]</u> <u>Conflict #1 - Growth vs Price Stability</u> Increase in AD would raise general price level → Demand-pull inflation If the increase in AD is very large and it shifts along the vertical portion of the AS, it would cause very high inflation → Overheating in the short run <i>“The economy remains mired in an extended spell of deflation and steadily lower growth”</i> But the Singapore economy is likely to have excess capacity so the inflation is likely to be mild → No overheating In the long run, AS increases (infrastructure development) → Reduce the upward pressure on general price level → This further ascertain that the economy would not have high inflation rate → No overheating</p> <p><i>Recommended Conflict #2 - Growth vs favourable BOT.</i></p> <p>Provided a one-sided comment on two possible conflicts – 1-3m Provided a two-sided comment on two possible conflicts – 4m</p>	
(d)	<p>Using case evidence and/or your own relevant knowledge, discuss whether MAS should adopt zero percent appreciation of the S\$NEER in anticipation of an economic slowdown.</p> <p><u>Introduction</u> If the Singapore economy anticipates an economic slowdown, coupled with deflation, or the threat of imported inflation from a weaker Singdollar is reduced, the MAS may adopt a neutral policy of zero per cent appreciation in the exchange rate (used in 2008). The means that MAS would reduce the slope (or flatten the slope) of its policy band that guides the local currency against an undisclosed trading basket, in effect slowing the pace of the Singdollar’s appreciation against her trading partners.</p> <p><u>Thesis – MAS should adopt zero percent appreciation of S\$NEER in anticipation of economic slowdown</u> Table 2 shows declining growth rate from 3rd quarter 2015 to 3rd quarter 2016 with a negative growth rate recorded in the 3rd quarter 2016. Changes in employment although positive, have fallen from 3rd quarter 2015 to 2nd quarter 2016. Within the same period, export revenue has fallen. Above data suggest that Singapore’s economy is slowing down.</p> <p><i>“The Singapore dollar tumbled to \$1.36 levels to the US dollar, a sharp depreciation (within the currency band) from Wednesday’s \$1.35 levels. Same trend was observed for Malaysian Ringgit.”</i> Zero percent appreciation of S\$NEER could allow Singdollar to weaken/depreciate against foreign currencies of her trading partners. This will improve export price competitiveness and increase (X-M) hence AD, achieving economic growth and increase employment.</p> <p>Explain how depreciation of Singdollar increases export revenue and lowers import expenditure in terms of home currency (Singdollar), using PED_x and PED_m, hence increase AD.</p> <p><i>Note to marker: Not essential to apply PED_x if students are able to explain price of exports is unchanged in domestic currency. But it can help to explain the extent of fall in demand of X.</i></p> <p>Theoretically, there could be a risk of imported inflation but this risk is lessened as such policy stance is adopted when the threat of imported inflation has been reduced. Table 2 shows that general price level has been falling (or inflation rate is negative). Extract 6 also mentioned that the Singapore economy experienced “extended spell of deflation”. Hence boosting AD will prevent further deflation.</p> <p><u>Anti-Thesis – MAS should not adopt zero percent appreciation of S\$NEER as there is threat of inflation economy is not yet in recession</u></p>	[12]

Inflation threat is still present. With reference to Figure 1, despite a general fall in oil price from 2012 to 2016, there is sign of increment in oil prices in the beginning of 2016.

Explain how gradual and modest appreciation of S\$NEER can manage import price push inflation (increase SRAS) and demand pull inflation (lower AD).

The data for 4th quarter 2016 GDP growth is not yet released. The Singapore economy may have a positive growth rate in the 4th quarter and hence there may be no recession.

Moreover government can use expansionary fiscal policy to boost economic growth while maintaining gradual and modest appreciation

Conclusion

MAS would require more information such as the reason for the fall in GDP. If the MAS is certain that the world economy is going to experience negative growth, such as the 2008 global financial crisis, then adopting a zero appreciation is deemed appropriate to prevent Singapore's economy from a recession. If not, such policy should not be adopted as it may lead to higher inflation in Singapore.

As there is sufficient data to suggest that there is a likelihood of recession in Singapore, such as those shown in Table 2, MAS should adopt zero appreciation policy. The policy has mitigated the slowdown in Singapore's economy as the 2016 3rd quarter export growth rate has improved from the previous quarter. If the export growth rate continues to improve, the GDP growth rate in the 4th quarter of 2016 would also improve.

Level Marking

L3: 6-9 Provided a good analysis of the zero percent appreciation of S\$NEER. There is a two-sided discussion.

L2: 3-5 Provided a one-sided discussion of the zero percent appreciation of S\$NEER.

OR

Provided a two-sided discussion of the zero percent appreciation of S\$NEER but there are major errors spotted,

L1: 1-2 There is an attempt to explain the zero percent appreciation of S\$NEER.

EV: 2-3 Provided a good judgement on whether MAS should adopt the zero percent appreciation of S\$NEER with reference to relevant information from case material.

EV: 1 Provided a general comment.