

2011 VJC H1 Economics Prelims (Suggested answers and mark scheme)

Section A

CSQ1

- a i. **Compare the trends of projected water use in Figure 1.** (2)

Projected water use was rising for Manufacturing, Electricity and Domestic sectors, except for Agriculture [1]

Manufacturing and Electricity contribution to water use is projected to rise more significantly [1]

- ii **With the aid of economic theory and materials provided, predict the trend of the price of water in the next few decades.** (4)

rising water usage (population, climate, economic growth, wastage) → DD expected to rise → shift rightwards of DD curve [1]

scarce resource + limited supply, rising pollution → SS expected to either remain fairly unchanged / rise marginally (insufficient information) [1]

Rise in DD > change in SS → price rise [1]

Moreover, DD and SS highly inelastic → price rise (likely) more significant [1]

Evidence from Extract 1 & 2

- b i **With the aid of an example from the data, explain what is meant by an external cost.** (2)

This refers to cost imposed, by the production or consumption of an additional unit of a good, on third parties who are not directly involved in the production or consumption of that good. (1m)

While desalination plants can turn salt water into drinking water, greenhouse gas production and discharge of concentrated brine into the marine environment occur as well. These gas and brine production bring about undesirable climatic changes and destroy marine lives. As a result, third party effects like reduced income of fishermen or tourist industry may be hit. (2m)

1 + 2 = 2m

- ii **Explain the economic justification for governments to intervene in the provision of water treatment.** (4)

Market failure from externalities

Prevention of polluting groundwater / preserve quality of available water resource
→ external costs → SS-side issues → welfare loss (diagram) → requires assignment of property rights or govt intervention / regulation

Or

Water treatment might be under-provided by the market as private enterprises may ignore the benefits of clean water on the wider community (i.e. they only care about the revenue they will receive). Moreover, such projects have high capital intensity, requires large initial outlay and has long payback periods that presents a challenge to private enterprises

Max 2 for identification of reason (if left to market, external cost is not internalized)

Max 2 for diagram to illustrate welfare loss

Evidence from Extract 2

c To what extent does putting a tariff on water achieve the microeconomic objective of efficiency? (6)

Explain how putting a price on water can achieve efficiency

- Consider the workings of price mechanism and how it allocates resources efficiently.
- Explain assumptions and how only private benefits and costs are considered ($MPB = MPC$):
 - Price regulates quantity demanded (prevent wastage) to truly reflect MPB (value that consumers place on additional unit of good)
 - Price regulates quantity supplied (firms will have the incentive to invest in infrastructure due to profit motive) to truly reflect MPC
- Hence $MSB = MSC$

Explain how putting a price on water may not achieve efficiency

- Market unable to capture cost of negative externality (pollution) → right 'price' is lower
 - Lower 'price' leads to wastage in consumption
 - Lower 'price' may not be sufficient to induce investment in water management technology that bring about lower cost of provision in the future
 - Pricing through market is not efficient ($MSB \neq MSC$)

Therefore the "right" price should take into account external costs that are not captured in the market system to achieve efficient allocation of resource.

Explain how government intervention via tax could achieve a more efficient allocation of water resource (raise 'price' of water & curb excess consumption).

However, to cater to the poor, subsidy is given.

L3	Able to evaluate how putting a tariff may achieve efficiency with reference to the data.	5-6
L2	Able to explain how putting a tariff may OR may not achieve efficiency (largely 1-sided) Or Able to evaluate how putting a tariff may achieve efficiency. 2-sided but with some gaps in the answer	3-4
L1	Able to identify the various measures used with little explanation and without clear idea on whether they are DD or SS targets	1-2

d Distinguish between the concepts of ‘shortage’ and ‘scarcity’. (4)

Shortage is a situation when the qty dd > qty ss at the existing market price. [1]

Scarcity is a situation when limited resources are not able to satisfy unlimited wants. [1]

Explain how shortage can be eliminated through adjustment when price changes but scarcity can never be eliminated. [2]

e Examine the relative effectiveness of the methods adopted by countries to tackle the problem of shortage of clean water. (8)

Identify govt intervention methods: subsidies, tariffs, regulations, SS-side measures to boost access

Measures identified	How they work / evaluation	Applied in Developed countries	Applied in Singapore
1. Curb Demand - Tariffs	Tariffs raise the price of water → reduces quantity demanded → most direct means → not targeted → poor may suffer more (equity issue)	Tariff account for less than 1% of household income despite highly inelastic DD (extract 2); subsidies in other countries to help poor	Figure 2 shows water tariff (including wastewater) for Sg highest in selected countries High water taxes used (extract 3)

<ul style="list-style-type: none"> - Education - Use efficient technology 	<p>Change mindsets via education and campaigns → reduce wastage, improve conservation → reduce DD → takes time for habits to change → more difficult for larger country</p> <p>Adoption of newer and more efficient technology to reduce water usage → reduce DD → high costs involved initially → needs incentives → usually govt initiative / coercion / regulation</p>	<p>Extract 2 mentioned DD management could reduce need for expensive water projects but does not show any material evidence for other countries</p> <p>Extract 2 mentioned development of technology for water provision – not about reducing DD</p>	<p>Extract 3 – “exhorted to conserve every drop” is evidence of water conservation campaign → high level of reach to the general populace given the smaller size and higher population density</p> <p>Extract 3 – “DD is curbed...efficient technologies” suggests use of means to reduce usage (eg. Water reduction taps; push-release taps; water saving cisterns etc)</p>
<p>2. Boost Supply</p> <ul style="list-style-type: none"> - Reduce pollution - Import 	<p>Lower pollution levels → ground and surface water can be used → cheaper clean water → need for regulation on pollution abatement → assignment of property rights for polluters to take responsibility → clean-up costs vs ‘punishment’</p> <p>Buying water from neighbouring countries →</p>	<p>(Extract 2, para 3) “increasingly paying true cost” – shows government policy options (tariffs) to provide incentive to waste less, pollute less and invest more in water infrastructure; more prevalent in countries with large natural sources of water</p> <p>Not applicable for countries with large sources of natural</p>	<p>Figure 2 shows high wastewater tariff imposed by Sg but little else regarding curbing pollution; perhaps since we have little natural water sources</p> <p>Traditional source but contracts are running out</p>

	increases SS → but reliance on foreign source → strategic dependence / political ties	groundwater	
- Build reservoirs	Building reservoirs → increase SS → high costs involved, land sites needed → high opportunity cost for alternative use of land	As above	Initial plans to complement import of water through the use of reservoirs but opportunity costs are high for land- scarce country
- Desalination	Desalination → increase SS → suitable for small communities → seawater available → but high energy costs, greenhouse gas released and high concentration of brine affects marine environment	As above	Provides only 10% of needs (extract 3) but high costs involved and advent of newer technology provided new alternatives
- Conservation (recycle)	Conservation through recycled water → less pollution and energy use involved → new technology adoption costs → sustainable solution	Conservation via reduction in use of water; multiple use of same pool of water; (extract 2 para 2) water gained through conservation	Govt initiated and funded research to find new 7 better ways to supplement existing sources – NEWater (recycles wastewater)

Conclusion

Different countries with very different factor constraints (land, availability of groundwater, access to seawater) and size (economies of scale in certain

production, reach of education campaigns) will use different policy mixture to tackle water scarcity issue.

L3	Able to well–explained answer of how the measures work with comparison to across different countries.	5-6
L2	Able to explain the goals (targets DD or SS) and how these measures work with some gaps in the answer	3-4
L1	Able to identify the various measures used with little explanation and without clear idea on whether they are DD or SS targets	1-2
E	Justifications on why measure adopted for different countries would be different	1-2

Evidence from Extract 2 & 3; and Figure 2

CSQ2

- (a) (i) **Using Figure 3, describe the trend of Taiwan's real GDP.** [2]

Taiwan's GDP rose from 2005 to 2008 and fell in 2009.

- (ii) **Using Extract 4, account for Taiwan's real GDP growth rate in 2009.** [4]

The global recession has led to decrease in global incomes which led to a fall in the demand for Taiwan's exports. Investment spending and domestic consumption also fell due to poor business sentiments and poor economic outlook as a result of the recession.

A fall in X, I and C led to a multiple fall in AD which explains the decrease in Taiwan's GDP in 2009.

2m for each clear explanation on C, I or X.

- (b) **Using Table 1, predict the how economic growth in Taiwan and Singapore could be affected differently by the global recession.** [4]

The recession led to a fall in both countries X, I and C components leading to a fall in AD and thus a fall in actual growth. With reference to Table 1, we can see that the composition of X out of GDP is much greater in Singapore compared to Taiwan. Also, the global recession would have led to a fall in FDI and it is likely that Singapore would suffer more as its I component of GDP is greater compared to that of Taiwan. However, although growth rate of Gross fixed capital formation in Table 1 can help us predict the change in FDI, we still need exact FDI growth figures to determine if indeed Singapore would see a greater fall in actual growth.

Although there is lack of data, based on Table 1, we can predict that it is most likely that Singapore would suffer greater fall in actual growth compared to Taiwan.

Note for teachers: If students use composition of X of GDP it is accepted but not accepted if they use composition of (X-M) of GDP.

2m for each clearly explained comparison on C, I or X.

- (c) **Using AD/AS analysis, explain how the Taiwanese stimulus package may affect its economic growth.** [4]

The Taiwanese stimulus package which includes the distribution of the NT\$108 vouchers give out to each resident will increase C since there is a condition that the vouchers must be spent by yearend. Increase in C lead to a rise in AD.

In addition, government spending on infrastructure projects will have supply side effects. This will attract FDI and increase domestic I as well, leading to a rise in AS.

Diagram with both AD and AS shifting right.

Therefore, Taiwan will experience increase in both actual and potential growth.

2m each for actual growth and 2m for potential growth

- (d) **In light of the global recession, discuss whether the stimulus package with the “Buy American” clause is helpful in addressing unemployment in the US.** [8]

Intro

“Buy America” package: govt spending on ‘products and equipment used in the public works projects should be American-made and not imported’, can be considered a form of protectionism as a measure to tackle the recession. Serious demand-deficient unemployment in the US caused by the recession.

Yes, it is helpful

There will be an increase in AD via G reducing unemployment. The \$787billion stimulus package is a direct injection into the economy through the increase in G. As AD increases, this means that there will be more production and more workers will be hired, especially in industries such as the steel industry (as mentioned in the data). This is effective to reduce unemployment.

EV:

1) How the G is financed: Based on Extract 2, the G increase incurred a significant budget deficit. If the US government borrows from the public, i/r may increase with more demand for funds, and hence consumption and investment may fall. As such, the overall increase in AD would be limited. [Furthermore, consumers and investors may foresee an increase in taxes in future to finance the widening budget deficit, and hence hold back current expenditure]. This problem would not arise if the US government has sufficient reserves.

2) What the G is spent on. If the G is spent on infrastructure, R&D, or retraining, it would boost the competitiveness of the US economy and/or increase the productivity of its labour force. In the long run, G increase would not only address demand-deficient unemployment, but structural unemployment as well. However, information is lacking from the data provided

No, it may not be helpful

The root cause of the demand-deficient unemployment was because of fall in C due to falling wealth and fall in I due to poor business sentiments, which led to a fall in the AD. Although this package leads to a direct injection of G into the economy, it doesn't directly address the root of the problem which limits its impact to reduce unemployment.

This clause forces firms to use only American goods which may not be price competitive compared to foreign imports. If American goods are more expensive, this drives up the cost of production of firms which means that they may find other ways to reduce costs. Firms may resort to hiring fewer workers which does not help the unemployment situation in USA.

Also, USA may face retaliation from its trading partners because of the clause. Its trading partners may erect restrictions on US exports which means that USA will see a fall in the demand for her exports. This will lead to a fall in AD and a fall in production. Firms will hire fewer workers and it will worsen the unemployment situation.

EV: However, since X is a small component of USA's GDP, the fall in export revenue may not have a significant impact on the economy, therefore, unemployment may not worsen significantly.

Conclusion

The stimulus package with the 'Buy America' clause could only help save jobs only in the very short run. It benefits only selected sectors and not the majority of the workforce. Its overall effectiveness is questionable as the benefits may conceivably be outweighed by the negative impact, such as higher production costs and retaliation by trading partners. In contrast, increase in G would be a direct injection into the economy and hence its ability to lower unemployment is more certain. However, its effectiveness also depends on how the resultant deficit is financed and the response of consumers and producers.

Level	Descriptors	Marks
L1	Answer identifies the impact of the stimulus package with the clause with very little explanation.	1-2
L2	1-sided (either positive or negative) explanation on how unemployment may be affected Or 2-sided explanation (with gaps) on how unemployment may be affected. Some reference to the data.	3-4
L3	Rigorous 2-sided explanation on how unemployment may be affected with reference from the data.	5-6
E	Comment on the overall impact on unemployment with justification.	+1-2

(e) **Do you agree that “the benefits of globalisation outweigh the costs” for Singapore?** [8]

Globalisation refers to the process of economic and social integration of economies around the world. The key drivers of globalisation are trade and the movement of capital and people. There are both positive and negative effects of globalisation on the Singapore economy.

Positive impact

Globalisation has allowed Singapore greater access to more markets which has led to a rise in the demand for Singapore's exports. This rise in export revenue increases AD, and has led to a significant impact on her GDP given that X is the largest component of her GDP. This has allowed Singapore to enjoy economic growth and these export industries have provided employment for many. Furthermore, increase in export revenue has allowed Singapore to enjoy BOP surplus.

Globalisation has also led to the influx of FDI has much positive impact on Singapore's economy boosting her AD and AS. FDI leads to an increase in capital and increases Singapore's productive capacity. It has also led to the transfer of skills and technology boosting efficiency. This allows Singapore to enjoy sustained economic growth, increase in jobs available and led to an improvement in BOP through the capital account.

In addition, Singapore has benefited from the freer movement of labour. With more foreign skilled and unskilled workers in Singapore, the quantity of labour has increased which increases the AS and thus leading to increase in potential growth.

Negative impact

The negative impact on Singapore's economy as a result of external shocks has also become more severe as a result of globalisation. As Singapore is heavily reliant on exports for growth, her economy has been badly hit each time there is a global recession. Each external shock has led Singapore to suffer fall in economic growth and led to unemployment.

Globalisation has also led to structural unemployment and rising income inequality. Those who have the suitable skills can join the pharmaceutical and chemical industries and experience rising wages as these are the industries with comparative advantage in Singapore. However, workers who do not have the relevant skills to join these industries will face structural unemployment.

Conclusion

Globalisation brings about benefits and problems to Singapore. Given the nature of Singapore's economy which is a small and open, she is heavily reliant on external trade and FDI to achieve sustained economic growth. Hence the benefits of globalisation still outweigh the costs. Furthermore, the government has implemented measures to help minimise problems arising from globalisation e.g. SPUR which has successfully reduced the negative impact of globalisation on her economy.

Level	Descriptors	Marks
L1	Answer identifies the impact of globalisation on Singapore.	1-2
L2	1-sided (either positive or negative effects) explanation of the impact of globalisation Or 2-sided explanation (with gaps). Some reference to the data.	3-4
L3	Rigorous 2-sided evaluation of the impact of globalisation with reference from the data.	5-6
E	Make a stand with regards to the likely impact of globalisation given the nature of the Singapore economy, with justification.	+1-2

Section B

3a) Explain the factors that result in inflation. [10]

b) To what extent will supply side policies help to tackle inflation in Singapore? [15]

Part a)

Approach:

The question is kept generic and broad and any answer that attempts to clearly explain and illustrate 3-4 factors that can result in inflation should be able to comfortably reach L3 marks. Better answers will be those which clearly categorise the factors into demand-pull or cost-push and use recent real examples to illustrate their explanation. This is no need to limit the context or examples to a specific country.

Outline:

- define inflation
- briefly explain that there are 2 broad types of inflation (DD-pull and cost-push, allow structural inflation discussion also)
- Explain (with illustrations to examples in the real world) the factors causing DD-pull and cost-push inflation.
 - DD-pull factors
 - Sustained increase in C, I, G, X-M and money supply
 - E.g. Quantitative easing has led to inflationary fears in the US, excessive current account surplus and the prevention of RMB appreciation in China has introduced inflationary pressure into China, fears of overheating in China
 - Cost-push factors
 - External factors (imported inflation, exchange rate depreciation/devaluation etc)
 - E.g. increase in prices of commodities or important raw materials (oil, sugar, steel, cement, sand etc), weakening of the USD has resulted in higher prices of oil which is commonly traded in US\$
 - Internal factors (wage-push, tax-push, profit-push etc)
 - E.g. wage-price spiral, increase in utilities charges, rentals, transportation cost

Mark Scheme

L1	Mere listing or very brief description of a few factors	1-3
L2	Able to explain a few factors but with some gaps or focus largely only on DD or SS side)	4-6
L3	Clear explanation of 3-4 factors with good illustrations	7-10

b) To what extent will supply side policies help to tackle inflation in Singapore? [15]

Part b)

Approach:

The context of the question is Singapore, therefore, it is important to identify the main sources of inflation in Singapore before we can make any meaningful discussion on whether certain

policies are effective/suitable in tackling them. From what we have learnt about Singapore, it appears that the main sources of inflation is largely cost-push driven and these cost-push reasons can be both external (crude oil prices, food prices) and internal (transportation, utilities, rentals). There is a chance that AD could be rising fast due to sharp increases in net exports, however, we have also learnt that the Singapore government has always been implementing supply side policies to allow our economy to achieve sustainable growth. Any answer which doesn't relate to the Singapore context will run into problems scoring L3 marks.

Outline:

- Identify and briefly explain (if not done in Part a) the main causes of inflation in Singapore
 - External cost (global crude oil prices, food prices)
 - Domestic cost (transportation cost, utilities cost, rental cost etc)
 - Possibly demand-pull inflation due to rapid increase in net exports (??)
- Explain how SS side policies can help to tackle inflation in Singapore.
 - In the case of domestic cost pressures, the Singapore government can put in place subsidies/rebates to reduce the impact of transportation and utilities cost increase. There could be measures put in place to reduce the increase in rental cost by allocating more land for residential and commercial purposes.
 - SS side policies will also push our LRAS rightwards with the increase in the quantity and quality of our resources (e.g. R&D, education and skills training), there will reduce any demand-pull inflationary pressures
- Evaluate the effectiveness of SS side policies in tackling inflation in Singapore
 - Although it appears that there are various supply side policies available to contain the domestic cost pressures from building up, we should recognize that the government may not adopt them for efficiency concerns (i.e. distorting prices through subsidies or rebates will distort efficiency in resource allocation).
 - E.g. the higher transportation cost is partly the consequence of measures put in place to reduce traffic congestion, higher charges for utilities may be the result of the drive towards conservation of water.
 - There is also a limit to how much subsidies and rebates can tackle the root cause of domestic cost inflation. Higher transportation and utilities cost may be the result of higher crude oil prices and such subsidies/rebates are not able to tackle the root issue very well.
 - Also, supply side policies are not able to tackle the imported inflation. Therefore, we will need to allow our exchange rate to appreciate to tackle the problem of imported inflation.
- Conclusion

Whether supply side policies are effective in tackling inflation in Singapore really depends on what are the factors causing inflation in Singapore. If the causes are demand-pull factors, then implementing supply side policies to push our LRAS to the right seem like the right thing to do. However, we must be mindful of the long gestation periods for the effects of training and infrastructure development to be felt. If the causes are domestic cost pressures, then certain supply side policies can be put in place to help the population cope with the cost of living increases and only certain supply side policies will be able to tackle the root cause. However, if the causes of inflation are external, then we will need to adopt exchange rate policy to counter imported inflation.

Mark Scheme

L1	Mere listing or brief description of how supply side policies tackle inflation	1-3
L2	Able to explain how supply side policies may OR may not tackle inflation in Singapore (largely 1-sided) Or Able to explain how supply side policies may AND may not tackle inflation in Singapore but with gaps (2-sided with gaps)	4-7
L3	Clear explanation of how SS-side policies may AND may not tackle inflation in Singapore.	8-11
E1	Some evaluation comments but largely unsubstantiated	1-2
E2	Well-reasoned evaluation	3-4

- 4 a) Explain how resources are allocated via the price mechanism. [10]**
b) To what extent will the price mechanism achieve efficient allocation of resources in Singapore? [15]

Part a) Outline

- Briefly explain the central problem of economics (scarcity, choices, resource allocation) and the objective of efficiency in resource allocation
- Briefly explain the 3 key questions in resource allocation (What and how much to produce, how to produce, for whom to produce)
- Explain how the price mechanism addresses the 3 key questions in resource allocation or explain how changes in DD and/or SS results in shortage/surplus and therefore changes in allocation of resources.
 - In a free market, the allocation of resources is done through the working of the price mechanism, where the free market forces of demand and supply interact to determine prices.
 - These prices then act as signals that coordinate the actions of producers. For example, when the demand of a good increases, ceteris paribus, a shortage results. There will be upward pressure on the price and the price increase will lead to a transfer of resources into the production of that good.
 - On the other hand, when the supply of a good rises, ceteris paribus, a surplus results. There will be downward pressure on the price and the price fall will lead to a transfer of resources out of the production of that good.
- Briefly explain how DD and SS interaction leads to equilibrium and state the assumptions

Mark Scheme

L1	Merely define relevant concepts	1-3
L2	Able to explain how price mechanism allocate resources but with some gaps or poorly organised	4-6
L3	Clear explanation of how price mechanism allocate resources with good illustrations using examples and explicit links to the 3 key questions in resource allocation	7-10

- b) To what extent will the price mechanism achieve efficient allocation of resources in Singapore? [15]**

Part b) Outline

- Reiterate the price mechanism system in resource allocation and explain that the price mechanism will achieve efficient allocation of resources if the assumptions of perfect competition, perfect information, perfect mobility of resources, absence of externalities and public goods are met.
- Illustrate on a diagram how allocative efficiency is achieved when market equilibrium is achieved. (e.g. private goods such as furniture, food, clothing, wages in certain occupations)
- Explain how when the assumptions (stated earlier) is not met, there could be a case of inefficient allocation of resources
 - Existence of externalities e.g. education, healthcare
 - Imperfect information e.g. insurance
 - Public goods e.g. flood control, national defence

- Imperfect factor mobility e.g. structural unemployment
- Illustrate the above cases (3 of them) using examples from Singapore.
- Briefly explain that it is common that resource allocation is inefficient in Singapore and that how government intervention is required to achieve an outcome closer to the allocative efficient outcome.

Mark Scheme

L1	Merely defining relevant concepts or brief description of how price mechanism achieve efficient allocation of resources	1-3
L2	Able to explain cases where price mechanism may and may not achieve efficient allocation of resources in Singapore but (1) with some gaps or (2) only very slight reference to the Singapore economy or (3) focus largely only on may achieve or may not achieve	4-7
L3	Clear explanation of how price mechanism may and may not achieve efficient allocation of resources with good reference to the Singapore context	8-11
E1	Some concluding remarks but largely unsubstantiated	1-2
E2	Well-reasoned conclusion	3-4