2011 VJC JC2 H2 Economics Prelim P1 (Mark scheme)

CSQ 1

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 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 the right price on water*" (Extract 2) achieve the two microeconomic objectives of efficiency and equity?** **(8)**

Balance between goals of efficiency vs equity expected especially for a necessity where issues of affordability need also to be considered

Explain how 'right' price on water can achieve efficiency

If left to market forces, only private benefits and costs are considered (MPB = MPC):

- Price regulates quantity demanded (prevent wastage) to truly reflect MPB
- Price regulates quantity supplied (affected by pollution which raises marginal cost of production) to truly reflect MPC
- Price incentivise investments through rewarding profits (price vs cost)

Explain how 'right' price not possible via market system without govt intervention due to externalities (pollution costs, wastage, lack of investments)

- 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 ≠ 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).

Equity concerns will examine if the 'right' price takes into account affordability of households to scarce resource.

Explain why equity is not a problem for developed countries where water charges ('price' of water) does not constitute a significant burden for households.

Explain why equity may be a problem

- For poorer countries, similar water charges represent a more significant portion of income. Problem magnified by highly inelastic demand for water (-0.1 to -0.2).
- Subsidies solution to keep it affordable when not targeted worsens equity problem.
- Moreover, measures undertaken for water pricing policies need to be sustainable

Conclusion to demonstrate the conflict between achieving the goals of efficiency and equity

Max 3m for Efficiency explanation

Max 3m for Equity explanation

Max 5m for both Efficiency and Equity without showing understanding of conflict between achieving both

Evidence in Extract 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)
- Education	Change mindsets via education and campaigns ➔ reduce wastage,	Extract 2 mentioned DD management could reduce need	Extract 3 – "exhorted to conserve every drop" is evidence of water

	improve conservation ➔ reduce DD ➔ takes time for habits to change ➔ more difficult for larger country	for expensive water projects but does not show any material evidence for other countries	conservation campaign ➔ high level of reach to the general populace given the smaller size and higher population density
- Use efficient technology	Adoption of newer and more efficient technology to reduce water usage ➔ reduce DD ➔ high costs involved initially ➔ needs incentives ➔ usually govt initiative / coercion / regulation	Extract 2 mentioned development of technology for water provision – not about reducing DD	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)
2. Boost Supply - Reduce pollution	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'	(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	Figure 2 shows high wastewater tariff imposed by Sg but little else regarding curbing pollution; perhaps since we have little natural water sources
- Import	Buying water from neighbouring countries ➔ increases SS ➔ but reliance on foreign source ➔ strategic dependence / political ties	Not applicable for countries with large sources of natural groundwater	Traditional source but contracts are running out

- 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

<u>Conclusion</u>

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

(ai) Compare the GDP growth rates between Taiwan and India from 2005 to 2009. [2]

Similarity: Both countries experienced rising growth rates from 2005-07 and falling growth rates from 2007-2009. [1]

Difference: India's growth rates were always positive, while Taiwan's turned negative in 2009. [1]

Difference: India's growth rates were always higher than those of Taiwan. [1]

Note:

- *"Compare": one similarity, one difference*
- *Two differences: 1 mark max*
- *Subject must be "GDP growth rates".*
- *"GDP increasing at increasing rate" : factually correct, but no marks*
- *"GDP rates increasing at increasing rate" : no marks*

(aii) Based on Extracts 4 and 5, and Table 1, account for the difference in GDP growth rates between Taiwan and India in 2009. [5]

Identify the difference:

In 2009, India's GDP growth rates were falling but remained positive. On the other hand, Taiwan's GDP growth rates were falling but turned negative in 2009.

Both countries were affected by the global recession. However, the degree differed.

India: For both countries, X and FDI fell in view of poorer investor sentiments and falling global income. However, India was less affected given its lower dependence on export revenue [X takes up only 20% of GDP]. Its economy is also less open ["protectionist measures" and "financial sector unconnected to global markets] and hence less affected by the global recession. Furthermore, its domestic consumption, which takes a significant part of its GDP [63.6%] remained buoyant [record hand-phone sales despite the global recession]. This means that AD still rose, but at a decreasing rate, resulting in falling but still positive GDP growth rates.

Taiwan: In contrast, Taiwan is much more dependent on external demand [X takes up a significant 70% of its GDP in Taiwan]. In addition to falling export revenue, consumers withheld expenditure and increased precautionary savings due to the

economic uncertainty. This in turn lowered expected profits for firms which had less incentive to invest and expand productive capacity. Hence AD fell, resulting in negative growth rates in 2009.

Note:

- *Format: 2 + 2 + 1*
- *For each country, 1 mark [for changes in components of GDP] + 1 mark [overall change in AD]*
- *For Taiwan: 1 mark [changes in 2 out of 3 of C, I or X] + 1 mark [AD falls]* ***OR*** *2 marks [C, I , X all fall]*
- *For India: 1 mark [changes in 2 out of 3 of C, I or X] + 1 mark [AD rises]* ***OR*** *2 marks [X falls but C increases, and C is larger than X in India]*
- *Last mark: Comparison between countries with explicit citation on differences in X/GDP or India's closed economy*

(b) With reference to the data provided, explain the factors that you would consider to assess the effectiveness of the vouchers to help Taiwan "revive its battered economy". [5]

The vouchers would boost the purchasing power of consumers, hence increasing C. Whether the resultant increase in AD would be significant enough to bring about substantial increase in real growth and fall in cyclical unemployment depends on:

1) Size of voucher [that is, 23 million multiplied by 108 NT] out of GDP relative to X out of GDP

It is important to compare the relative size of injection into the economy from the vouchers to the fall in AD resulting from global recession. It is possible [or you could surmise that it is unclear] that the vouchers may not be effective in increasing AD substantially to make up for the significant fall in export revenue as well as FDI/I and C, as global demand for Taiwanese goods plummet and investors and consumers sentiments worsen.

2) Size of k

As consumption increases, the resultant increase in household income would induce further consumption. The resultant increase in GDP would depend on the size of the multiplier. Based on Table 1, Taiwan seems to be quite dependent on imports [M/GDP>50%]. This suggests that its MPM, and hence MPW could be considerable, limiting the multiplier effect. [Students could also argue that information on MPT and MPS is not available. Or that C/GDP is not insignificant, suggesting high MPC as well. Hence size of k cannot be accurately predicted.

Accept any well-argued points]

3) What the voucher is spent on

The vouchers would only help boost AD if it is spent on locally produced goods. If they are spent on imports, or goods with high import content, this would only increase withdrawals [which would flow out of the Taiwanese economy] and not injection into the economy. We do not have sufficient information in this regard.

Note:

- *Format: 1 + 2 + 2*
- *1: Explain how vouchers would boost C, and hence AD*
- *2 + 2: List of factor + rigorous explanation*
- *Listing of 2 or more factors: 2 marks max*
- *While arguments such as crowding out effect are theoretically correct, it is not accepted here as they are more compelling factors with stronger evidence in the extracts.*

(c) In light of the global recession, assess if government spending or "*protectionist measures in any shape or form*" is more helpful in addressing unemployment in the USA. [8]

Approach

- Identify that global recession has resulted in significant demand-deficient unemployment.
- Explain theoretical impact of G increase on unemployment with rigour
- Evaluate effectiveness based on data with regards to size of k, size of domestic market, crowding effects etc
- Explain theoretical impact of protectionist measures on unemployment with rigour
- Evaluate the effectiveness based on data with regards to reaction of trading partners, negative impact, etc.
- Make a conclusion by *comparing* the benefits and costs of both policies, SR and LR impact on unemployment etc.

Suggested Answer

Mechanism of increase in G

An increase in G [of $787bn] increases AD. To cater to the increase in demand for goods and services, firms step up production and employ more FOPs, including labour. This would reduce demand-deficient unemployment. More jobs would be created as the increase in income would induce more consumption, increasing AD further.

Impact on unemployment depends on:

1) Size of k: Based on Table 1, C/GDP [>70%] is significant, suggesting high MPC. Furthermore, M/GDP is relatively low [<14%]. As such, we could conclude that size of k could be big in the USA, enhancing the effectiveness of G increase to raise AD and hence lower unemployment.

2) How the G is financed: Based on Extract 3, 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.

Mechanism of protectionist measures

"Buy America" provision, tariffs etc: consumers/producers switch from imported consumer goods and factors of production to local goods. This increases AD, and hence jobs for Americans. This may be useful to lower unemployment in the short-run, especially in targeted sectors such as the steel industries.

However, protectionist measures may not useful as:

1) Consumers and firms have to turn to local goods which are dearer. This would increase cost of production and lower expected profits for firms. Furthermore, exports would lose price competitiveness and purchasing power would be eroded. Increase in AD would hence be limited.

2) With a fall in export revenue, the trading partners of the US would have lower national income, leading to lower demand for American goods. Furthermore, they would retaliate with similar measures, decreasing their consumption of imports from the US. As such, unemployment may rise in the US, especially the export sectors. This problem might be less significant for the US given that it is not reliant on external demand for growth [X/GDP is only 11%]

Conclusion

Protectionist measures 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, retaliation by trading partners and the inefficiencies it perpetuates. In contrast, increase in G would be a direct injection into the economy and hence its ability to lower unemployment is more certain. Its effectiveness is also enhanced by the size of the multiplier and domestic market. Moreover, the impact of G increase could potentially be more far-reaching, addressing unemployment not only in the short run but in the long run too. However, its effectiveness also depends on how the resultant deficit is financed and the response of consumers and producers.

Note:

- *Format:*
- *Mechanism: 2 + 2 = 3*
- *Evaluation: 2 + 2 = 4*
- *Mechanism [3] + Evaluation [4] = 6*
- *Mechanism: Rigorous explanation of impact of policy on reducing cyclical unemployment [not structural]*
- *Evaluation:*
  Government Spending
  Size of Multiplier [rigorous explanation with explicit mention of both MPC and MPM]: 2 marks
  Size of Multiplier [lacks rigour] + Crowding out: 2 marks
  Crowding out only: 1 mark max
- *Protectionism*
  Possible fall in X [retaliation + income fall in trading partners]: 2 marks
  Possible fall in X [only one of the reasons]+ rise in COP: 2 marks
  Rise in COP only : 1 mark max
- *There could be other possible ways to evaluate the impact of protectionism, but these ideas must be related to unemployment, and not be, for example, to allocative efficiency.*
- *Overall Evaluation: We are looking at relative effectiveness. Hence we would require comparison between the policies. Possible responses*

include:

- *Protectionism is at best a short run measure compared to fiscal policy*
- *Gains from protectionism only accrue to selected sectors while those from government policy*
- *While both policies may reduce demand-deficient unemployment, the costs for protectionism is far larger*
- *Government spending is a direct injection into the economy, and hence the results are more certain.*

Level	Descriptors	Marks
L3	For an answer that explains with rigour the mechanism of both the policies and their limitations and makes good reference to case material.	5 – 6
L2	For an answer that explains with some rigour the mechanism of both the policies and their impact on unemployment with little or no reference to case material.	3– 4
L1	For an answer with poor and inaccurate economic analysis, or is largely descriptive with little or no rigour.	1 – 2
Evaluation		
E2	Judgement based on sound economic analysis on how factors, such as nature of the economy, state of the global economy, etc can impact the *relative effectiveness* of the policies.	+2
E1	Mainly unexplained judgement on the *relative effectiveness* of the policies.	+1

(d) With the help of the data provided, discuss whether globalisation is beneficial to the different economies featured in the extracts. [10]

Approach

- Identify the "different countries" in question: Taiwan, India, the USA.
- Define globalisation
- Explain the benefits of globalisation, and evaluate the degree in the context of the 3 different countries.
- Explain the costs of globalisation, and evaluate the degree in the context of the 3 different countries.
- Explain the role the government can play to realize the net gains of

globalisation

- Conclude with a well-justified stand.

Suggested Answer

Define globalisation: trend increase in mobility of goods and services, factors of production as well as capital across national borders, leading to greater integration/interdependence of economies of the world.

Globalisation is beneficial:

1) Fall in trade barriers, leading to more specialization and trade based on comparative advantage. Otherwise idle resources are hence more fully and efficiently utilized. [e.g. Taiwan in electronics, India in labour intensive sectors, the USA in capital/knowledge intensive sectors]

2) Larger export markets boost AD, creating jobs and increasing economic growth, improve current account etc, although degree differs based on the characteristics of different economies. [E.g. Based on Table 1, Taiwan benefits most from this as it is dependent on X as a driver of growth. According to Extract 7, export-led growth has also raised SOL. For USA and India, less so, as domestic sector is more important. In fact, net export is negative for both. But USA companies, such as General Electric, do enjoy higher revenue from its overseas markets.]

3) More FDI inflow. This will lead to increase in AD, 2) increase in AS as there is more capital accumulation, and more expertise transfer and 3) help countries especially LDCs such as India, develop comparative advantage and move up the value chain. [Figure 4 may suggest that FDI inflow may be important for the USA and to a lesser degree, India] 4) capital account improvement

4) More FDI outflow/ outsourcing: This will enable firms, especially those in developed countries such as USA, to move their more labour intensive sectors to lower-cost countries such as India, increasing their profits.

5) Consumers can enjoy lower prices, especially in developed countries. [According to data, USA may not benefit in this respect significantly, as its M/GDP is rather low, suggesting a larger dependence on domestic goods]. Less developed countries can also benefit from capital goods produced by developed countries, which they could not produce themselves without high opportunity costs or at all given their lack of capital or technological knowhow. Note: Valid point theoretically, but since there is little evidence on this, and there are other more compelling points, it will be accorded low priority. Setter defers to judgement of markers if candidates backed it up with data such as import dependence of countries.

Globalisation is not beneficial:

1) More volatility [Contagion effect]: With more integration, an economic crisis that occurs in a particular country can be transmitted to other countries very quickly through various channels: trade, financial markets etc. This would lead to lower real growth and massive unemployment globally. The more open/dependent an economy on trade and global financial markets, the more susceptible/vulnerable it is to external shocks. For example, Taiwan, given its heavy reliance on trade, suffered from negative growth [and rising unemployment] as global demand plummeted. In contrast, India is well insulated from the global recession, as it depends more on domestic demand, and its economy is much less open.

2) Globalisation leads to more competition especially from low-cost countries, hastening the erosion of comparative advantage in declining industries [e.g. steel industry in the USA]. This may lead to structural unemployment and widening income gap.

According to Extract 4, the role of the government is also an important factor in assessing if globalisation is beneficial to the country or not. The government should help shift resources such as labour away from declining sectors to those in which the economy has comparative advantage through, for example, retraining its lower-skilled workers and eradicating rigidities in factor markets. In addition, the government can also implement policies to help an economy develop new comparative advantages such as investment in R&D, infrastructure, attracting FDI etc. This will help developing countries in particular to move away from low value added primary industries and climb up the value-add ladder.

[Other points: governments can also implement appropriate counter-cyclical macroeconomic policies to temper the volatility that arises from greater integration into the global economy]

<u>Conclusion</u>

Globalisation brings about both benefits and challenges. The extent varies according to the nature of the economy. Trade-dependent economies such as Taiwan may arguably benefit more. However, as the world becomes increasingly globalised and global supply chains become more integrated, economies with large domestic markets such as the USA and India can also gain from greater global mobility in goods, factors of production and capital. To help the economies ride the wave of globalisation successfully, the government has a key role in implementing appropriate policies that maximize the benefits and minimize the cost.

Level	Descriptors	Marks
L2/L3	For an answer that explicitly cites specific examples of government policies and their objectives.	+1
L3	For an answer that shows well-developed analysis of both challenges and benefits of globalisation with rigour, and makes good reference to the case material provided.	7
L2	For an answer that shows understanding and explanation of both challenges and benefits of globalisation with some reference of case material/or comparison between countries. For an answer that is one-sided but very well explained. For an answer that merely explains the challenges and benefits theoretically but makes poor use of data; or For an answer that is one-sided, that is, showing either benefits or challenges with rigour For an answer that is two-sided but largely theoretical with no use of data	Max 6 Max 5 Max 4
L1	For an answer that show descriptive knowledge on challenges and/or benefits of globalisation	1 – 3
Evaluation		
E2	Judgement based on sound economic analysis on how factors, such as nature of the economy, government efforts, etc can impact <u>*net*</u> benefits of globalisation	+2
E1	Mainly unexplained judgement on why some countries benefit from globalisation than others	+1

Note:

- *We want to inculcate good CSQ answering skills. If there is strong evidence/ compelling ideas addressed in the extracts, these should be given priority.*
- *For each idea students raise, it must be rigorously explained + backed by good use of data from extracts*
- *Given that the content of the extracts is sufficiently rich with ideas and examples, micro concepts such as lower prices, more variety, increase in consumer surplus/welfare etc not dealt with explicitly in the extracts are given very low priority.*

- *For evaluation, do not award marks for weak statements such as "Globalization brings with it both costs and benefits"*
- *Setter defers to markers' judgement for "benefits outweigh costs". Markers should however take note not be too lenient with evaluation marks as they are important to distinguish the calibre of candidates*
- *Quality evaluation includes "nature of economy determines how countries benefit from globalization", "Extent of costs and benefits varies across countries/sectors within a country", "role of the government is to maximize net benefits, that is, enhance the benefits and keep the costs in check" etc*