



ANDERSON JUNIOR COLLEGE

JC2 PRELIMINARY EXAMINATION 2014

ECONOMICS

9732/01

Paper 1

16 September 2014

Additional Materials: Answer paper

2 hours 15 minutes

READ THESE INSTRUCTIONS FIRST

Write your name, PDG and index number on all the work you hand in.

Write in dark blue or black pen on both sides of the paper.

You may use a soft pencil for any diagrams, graphs or rough working.

Do not use staples, paper clips, highlighters, glue or correction fluid.

Answer **all** questions. Begin your answer to **each question** on a fresh sheet of writing paper.

At the end of the examination, **fasten your answers to each question (Questions 1 and 2) separately.**

Fasten this cover page in front of your answers to Question 1.

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

Name _____ ()

PDG _____/13

Case Study Question No.	Marks
1	/ 30
2	/ 30
Sub-total	/ 60

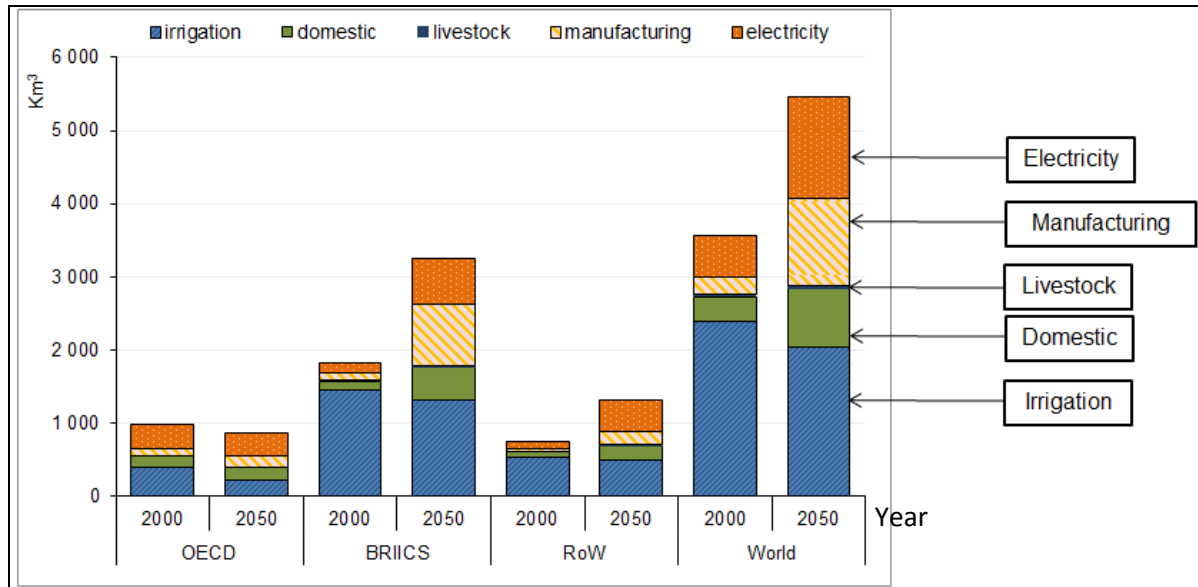
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Answer **all** questions.

Question 1

Water Scarcity

Figure 1: Global water consumption, year 2000 to 2050 by components

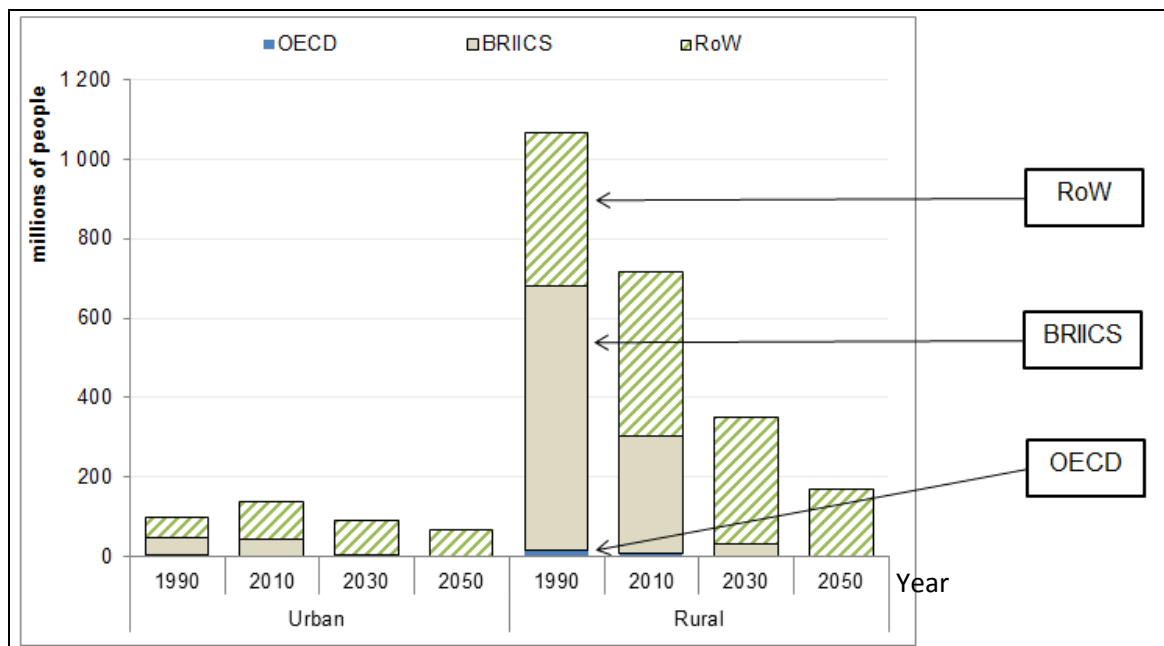


*BRIICS: Brazil, Russia, India, Indonesia, China, South Africa

RoW: Rest of World (excludes OECD and BRIICS)

Source: *The Environmental Outlook Baseline*, accessed 25 August 2014

Figure 2: People living in areas of water scarcity, by level of scarcity, year 2005 to 2050



Source: *OECD Environmental Outlook to 2050*, accessed 25 August 2014

Extract 1: Water scarcity and possible consequences

Water scarcity is an increasing threat in many countries and regions, as water pollution and overuse reduce available sources, while populations grow and competition between different uses increases. Global water withdrawals from the environment doubled between 1960 and 2000. In particular, groundwater extraction has risen from 100-150 km³ to 950-1000 km³ per annum since the 1950s. Groundwater is water located beneath the earth's surface. Extracted groundwater undergoes processing and becomes what is known as potable water, which is water that is safe enough to be consumed by humans. Water use is projected to increase at a much higher pace in developing countries, where agriculture is by far the main user, resulting in a global share of agriculture water use of about 70%.

Adapted from: OECD, *Managing Water for All*, 2009

Extract 2: Water is underpriced – the idea that we are not paying the true cost for water

In the water business, there are frequent complaints that “water is too cheap”. That is, the consumer does not pay enough for water. In the developed world we have access to clean safe drinking water and sanitation.

With respect to water, there is a case to be made to adjust water pricing. If the over-extraction of groundwater leads to an impact on fisheries, habitats or tourism downstream, should the price reflect this? Who pays for this? The Polluter Pays Principle is often applied in environmental policy and economics. If an upstream city takes water out of a river, affecting cities downstream, there is a case to be made for adjusting the price of extraction to act as a disincentive to over-extraction or to reflect the real costs.

Adapted from: Paul O’Callaghan, *Water pricing is not the roadblock to innovation*,
23 August 2013

Extract 3: The Dutch groundwater tax

The Dutch groundwater tax applies to the extraction of groundwater by water works or by other entities (industry, agriculture) and aims to protect the scarce groundwater resource in the Netherlands. The policy is also aimed at raising revenue for fiscal reform. However, there were some complaints about the tax during the decision-making process, in particular from water-intensive industries such as beer and soft-drink producers and dairies. This is despite the fact that groundwater tax remains a minor element of the total water bill for these firms.

Adapted from: ECOTEC, *Study on the economic and environmental implications of the use of environmental taxes and charges in the EU and its member states*, April 2001

Extract 4: Water conservation tax in Singapore

To encourage water conservation and price water based on its scarcity value, the Water Conservation Tax (WCT) was introduced in 1991. The WCT is imposed as a percentage of the total water consumption to reinforce the message that potable water is precious from the very first drop, something which the consumers are unaware of. The WCT is pegged to a rate such that the total price of potable water would be equivalent to the cost of producing the next drop of potable water from the next available sources which are more expensive (i.e., from desalination and NEWater).

Adapted from: Singapore Public Utility Board, accessed 26 August 2014

Extract 5: Water rights trading

Water rights trading are where rights to extract groundwater are traded from one person to another. The transferred rights are usually set out in a new extraction licence. We are encouraging trading because it allows us to allocate our water resources in a way that meets demand and supports the environment without the extraction of additional water.

Adapted from: Environment Agency, *Managing water abstraction*, May 2013

Extract 6: The concept of virtual water

Virtual water describes the water used to produce products that are traded in international markets. The virtual water concept supports the argument that water-scarce countries can save their scarce water resources by relying more on import of food. As these countries are water-scarce, the opportunity cost of producing agricultural products, which require a lot of water, is high. On the other hand, the opportunity cost of producing manufactured goods, which require less water, is low.

However, the idea is not perfect. The concept implicitly assumes that the potable water which is released by reducing a high water use activity would necessarily be available for use in a less water-intensive activity.

Adapted from: *Wikipedia*, accessed 5 July 2014

Questions

- (a) Using Figure 1,
 - (i) compare the global water consumption in 2000 with the projected trend in 2050 for OECD and BRIICS countries. [1]
 - (ii) identify two main components which account for the difference stated above. [2]
- (b) Explain the likely impact of a tax on groundwater on the market for potable water. [2]
- (c) With the aid of diagrams,
 - (i) explain why the Dutch government intervened in the market for extraction of groundwater. [4]
 - (ii) explain why the Singapore government imposed a water conservation tax. [3]
- (d) With reference to the data, to what extent is the trading of water rights effective in achieving an efficient allocation of resources? [8]
- (e) Extract 6 suggests that water-scarce countries should rely more on import of agricultural products. Assess if moving to a world pattern of trade that is based upon this concept can reduce the problem of scarcity. [10]

[Total: 30]

Question 2**Creeping Protectionism****Extract 7: The protectionism that wasn't**

"When it comes to international trade, actually it's not the Great Depression, it's worse." So said Paul Krugman in 2009. Global markets were certainly rattled by the financial crisis. Trade plummeted, credit seized up, investors became nervous and consumers tightened their belts.

Economists like Mr Krugman were worried that the world was repeating the mistakes of the 1930s. As the world entered the Great Depression of the 30s, countries stopped trading. Import barriers were imposed by the dozens. Governments were under the impression that protectionist measures would save domestic jobs. But the doom-mongers might be proved wrong. The fear of the return was not realised, at least in part because the world has learnt from that dreadful decade the lesson that protectionism makes a bad situation worse.

Adapted from: *The Economist*, 10 September 2013

Extract 8: Beyond tariffs and quotas

Perhaps the biggest surprise is that the world has not hurtled into tit-for-tat protectionism after the financial crisis. New protectionist measures have appeared but they are remarkably mild. New protectionism is concentrated in sectors that have long been protected: textiles, clothing, footwear, iron, steel, consumer electronics and agriculture.

There is also something else at work. Global market integration has imposed spontaneous disciplines on governments and businesses. They realise that up-front protectionism raises business costs, invites retaliation, and excludes them from the benefits of globalisation and damages wealth and welfare at home. This applies particularly to global supply chains. Production of manufactured goods is increasingly organised through global chains, with goods processed in multiple countries.

However there is one caveat. The World Trade Organisation (WTO) focuses on established and commonly understood trade instruments covered by WTO disciplines, especially import and export tariffs, quotas and licenses. There is now a range of non-traditional protectionist instruments creeping in: industrial policies such as subsidies to domestic firms in the guise of short term remedies for particular problems, public-procurement or "buy-national" restrictions and standards protectionism such as health and safety requirements. Hidden protectionism and industrial policy may boost specific industries or exports, but that does a country no good if other policies stifle private enterprise and cause underinvestment in human and physical capital. Brazil and India have been held back because their governments funnelled state resources to preferred sectors and constituencies instead of boosting their economies' underlying potential, slowing down their growth.

Adapted from: ECIPE, *Trade, globalisation and emerging protectionism since the crisis*, 2010; ECIPE, *The crisis and the global economy*, 2011; and *The Economist*, 12 October 2013

Extract 9: Singapore productivity and innovation drive

The restructuring drive began in earnest in 2010, acting on the recommendations of the Economic Strategies Committee. It said Singapore must raise productivity and reduce the foreign worker inflow – moves aimed at fundamentally changing the way the economy grows, to prepare for the future challenges of an ageing population, an environment that may be more protectionist and to ensure its growth is more sustainable and inclusive.

The measures taken by the government includes: Productivity and Innovation Credit (PIC), funds for research and development (R&D), collaborative industry projects, workforce and training support and technology adoption programme.

R&D is an important activity in a knowledge-based economy like Singapore because through R&D, new knowledge and new economic opportunities are developed. New growth sectors are being developed in areas such as water technology, biomedical sciences and clean technologies. Singapore has an advantage in promoting science and technology and R&D given that there is a strong intellectual property rights framework.

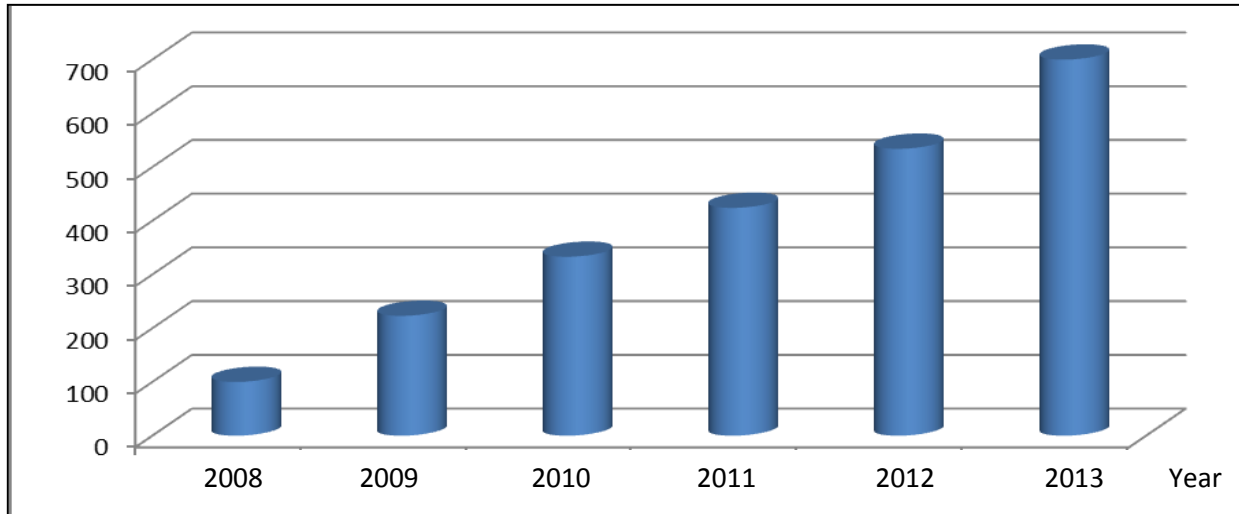
Adapted from: Prime Minister's Office, 19 November 2012;
and *The Straits Times*, 2 August 2014

**Figure 3: World Gross Domestic Product (GDP)
(2007 – 3rd Quarter 2013)**



Source: *The Economist*, accessed 8 August 2014

Figure 4: Increase in number of potentially trade-restrictive measures for the period 2008 to 2013



Adapted from: European Commission, *Tenth report on potentially trade-restrictive measures*, September 2013

Questions

- (a) (i) With reference to Figure 3, summarise the trend in world GDP for the period 2007 to 2013. [2]
- (ii) To what extent does the data in Figure 3 account for the change in potentially-trade restrictive measures in Figure 4? [4]
- (b) Explain how the shift from traditional protectionist measures to subsidies, as suggested in Extract 8, can impact businesses and governments in the globalised economy. [6]
- (c) Discuss whether “protectionism makes a bad situation worse” (Extract 7). [8]
- (d) In the light of creeping protectionism, discuss the extent to which supply-side policies on productivity and innovation can maintain high employment and growth in Singapore. [10]

[Total: 30]

End of Paper

Case Study Q1

(a) Using Figure 1,

- (i) compare the global water consumption in 2000 with the projected trend in 2050 for OECD and BRIICS countries. [1]

Total water consumption for OECD countries is projected to decrease while total water consumption for BRIICS countries is projected to increase.

- (ii) identify two main components which account for the difference stated above. [2]

There is a fall in irrigation activities for OECD countries.

Water consumption in manufacturing sector is projected to increase for BRIICS countries.

- (b) Explain the likely impact of a tax on groundwater on the market for potable water. [2]

From Extract 1, "extracted groundwater undergoes processing and becomes what is known as potable water". Therefore, a tax on groundwater would increase the cost of production of potable water. This causes supply curve of potable water to fall and shift left. Therefore, equilibrium price increases while equilibrium quantity falls.

(c) With the aid of diagrams,

- (i) explain why the Dutch government intervened in the market for extraction of groundwater. [4]

There are negative externalities generated in the market for extraction of groundwater, which is the market for production of groundwater. There is a divergence between PMC & SMC, where the difference is EMC represented by the distance AB in Diagram 1, because producers are only concerned about their own private costs and benefits.

From Extract 2, "the over-extraction of groundwater leads to an impact on fisheries". In this case, the external cost is the loss of income due to insufficient water in the fisheries downstream, by the fishermen who are the third parties.

Therefore, there is overproduction of groundwater where Q_e is higher than Q_s and this causes the Dutch government to intervene in the market.

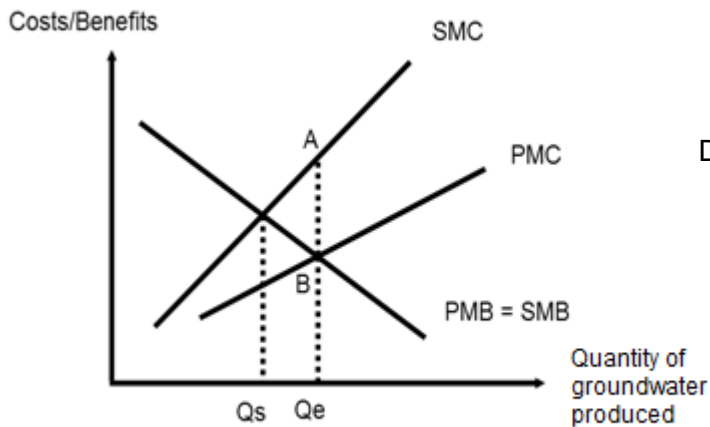


Diagram 1

Negative externalities generated as a result of consumption \rightarrow max 3m

- (ii) explain why the Singapore government imposed a water conservation tax. [3]

From Extract 4, "the water conservation tax (WCT) is imposed as a percentage of the total water consumption to reinforce the message that potable water is precious from the very first drop, something which consumers are unaware of". Consumers are ignorant of the costs incurred due to the depletion of water resources in the future, represented by the distance AB as shown in Diagram 2.

Therefore, there is a divergence between actual and perceived private costs at Q_e , where producers take into account only their perceived private costs.

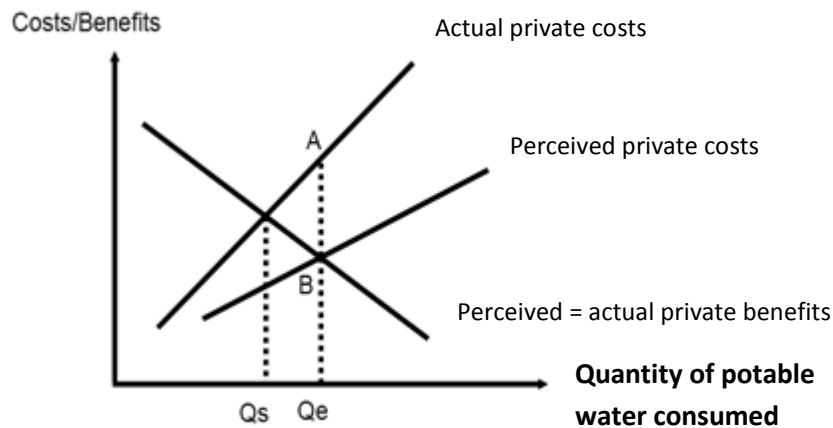


Diagram 2

- (d) With reference to the data, to what extent is the trading of water rights [8] effective in achieving an efficient allocation of resources?

From Extract 5, “water rights trading are where rights to extract groundwater are traded from one person to another. The transferred rights are usually set out in a new extraction licence.” A water rights licence gives the firm the right to extract groundwater. Assuming that the government has perfect information, the government will first calculate the socially optimal level of groundwater to be extracted (where $SMC = SMB$) and then issue the corresponding number of licences such that the production can be at Q_s . Firms who need to extract more groundwater than permitted by the number of licences they are issued will need to purchase additional permits from firms who extract less groundwater than their permits allow.

The trading of water rights may be effective as it is administratively simple. This is because the government can set the total level of permitted groundwater extraction at Q_s , the socially optimal level of output, without the need to consider the extent of negative externalities generated by specific groundwater extraction firms. The trading of water rights is also effective as it incentivises firms to develop more efficient methods of extraction of groundwater, in order to reduce the number of permits required and sell the additional permits for extra revenue.

However, the trading of water rights does not address the problem of overconsumption of potable water caused by imperfect information as mentioned in Extract 4, “potable water is precious from the very first drop, something which the consumers are unaware of”. In OECD countries, the problem is likely to be overconsumption rather than overproduction as there is “access to clean safe drinking water and sanitation” as stated in Extract 2. Consumers are less likely to save water due to this easy access as well as their relatively high purchasing power compared to those in the BRIICS countries. Therefore, since the root cause of the water scarcity is due to overconsumption rather than overproduction, then a tax on consumption, like the water conservation tax stated in Extract 4 would be more effective.

OR

However, the lack of perfect information may cause the trading of water rights to be ineffective. It is difficult for a government to determine the proportion of permits to be issued to rural and urban areas since the figures in 2030 and 2050 given in Figure 2 are merely projected and may not be accurate.

Conclusion/Evaluation

Overall, the trading of water rights is likely to be effective. This is because the limitation of this policy is likely to be minimal as long as the government adjusts the number of permits issued accordingly whenever new and more accurate information becomes available.

Knowledge, Application, Understanding and Analysis		
L3	Well-developed analysis of the trading of water rights with good application to context.	5-6
L2	For a balanced but under-developed answer.	3-4
L1	For a general and superficial description of the trading of water rights that shows limited understanding.	1-2
Allow up to 2 additional marks for Evaluation		
E2	Evaluative comments with justification.	2
E1	Evaluative comments, unexplained.	1

- (e) Extract 6 suggests that water-scarce countries should rely more on import of agricultural products. Assess if moving to a world pattern of trade that is based upon this concept can reduce the problem of scarcity. [10]

Thesis: Virtual water can mitigate the problem of scarcity

- Figure 2 shows that more people are living in areas of water scarcity in BRIICs as compared to OECD. Hence, it is inferred that BRIICs are water scarce countries while OECD countries are endowed with more water resources relatively. In the context of water shortage, the concept implies that water-scarce countries such as BRIICs have higher opportunity costs in the production of agricultural products which require large amount of water.
- Hence, they do not have a comparative cost advantage in producing agricultural products and should therefore produce manufactured goods, which require the use of relatively less water, and import agricultural food instead [Extract 6].
- Water-rich countries such as OECD have lower opportunity costs in the production agricultural products and should then produce agricultural products as they have a comparative advantage in producing these food items.
- This would help allocate scarce water resources more efficiently and reduces scarcity. Also, through the trading of virtual water content of goods, both countries are able to consume beyond PPC and hence alleviate the problem of scarcity.

Anti-Thesis: Virtual water worsens the problem of scarcity

Perspective 1: Virtual water trading may lead to structural unemployment

- Figure 1 shows that water consumption in BRIICS is mainly from irrigation and hence they are currently likely to be specialising in the production of agricultural products. As advocated by the virtual water theory, to shift economic activities from primary sector to manufacturing would require economic structuring for the BRIICs economies.
- Structural unemployment arises due to occupational immobility as these low-skilled workers are not able to find jobs in the sunrise manufacturing industries due to lack of relevant skills and knowledge. There is over allocation of resources in the declining industries and under allocation of resources in the sunrise industries.
- Increase in unemployment implies that the economy is producing within the PPC which means that the combination of output produced is less than the maximum combination possible with available resources.

Perspective 2: Virtual water trading leads to allocative inefficiency due to over extraction of groundwater (production) and over consumption of water

- As specialisation in the production of agricultural products requires more water as resources, there could be a possibility of over extraction of groundwater to meet the increasing demand for water consumption [Extract 2]. This might lead to depletion of water resources in future as global water withdrawals from the environment has doubled.
- While virtual water may better reallocate scarce water resources leading to increase in world output, it does not solve the problem negative externalities such as adverse impact on the fisheries and tourism arising due to the over-extraction of groundwater.
- The equilibrium level of water produced (Q_e) is still greater than the socially optimal level of water produced (Q_s). The resulting deadweight loss to society means that there is allocative inefficiency, hence worsening the problem of scarcity.
- In addition, according to Extract 4, there is likely to be wastage of potable water due to consumer ignorance.
- Virtual water trading is not able to address the root cause of the problem which is overconsumption of water due to unlimited wants as competition between users increases. Again, as actual cost is greater than perceived costs, there is overallocation of resources in the consumption of water, worsening the problem of scarcity.

Perspective 3: Virtual water trading leads to productive inefficiency

- Water is used as a factor of production for agricultural products. According to Extract 2, water is underpriced which means that cost of production is kept lower. Since producers are generally profit motivated, in their pursue of self-interest, they are unlikely to be cost efficient and continue to over consume water as raw material in their production. Under this virtual water trading system, this will result in productive inefficiency as firms are not looking for efficient methods of production to further lower their cost of production.
- Therefore, while the underpricing of water has resulted in its over-use as a raw material in production, the virtual water trade further aggravates

the prevailing situation of water scarcity due to productive inefficiency.

Possible Synthesis

Cost-benefit analysis → high costs of resource re-allocation in economic restructuring → fundamentally not feasible

OR

Limitations of theory of CA or virtual water theory

- *Factor mobility*
- *No trade barriers*
- *Zero transport costs*
- *Difficult to calculate exact virtual water content in all goods and services*

Knowledge, Application, Understanding and Analysis		
L3	A balanced answer that is well-developed explanation and discussion including other limitations to the virtual water concept and theory of CA with good reference to case study data	7-8
L2	For a balanced but under-developed answer that is limited in explanation of how the concept of relative opportunity costs in water resources can help reduce scarcity and how it might worsen the problem of scarcity	4-6
L1	For a general and superficial description of theory of CA not contextualized to the theme on water	1-3
Allow up to 2 additional marks for Evaluation		
E2	Evaluative comments with justification.	2
E1	Evaluative comments, unexplained.	1

Case Study Q2

- (ai) **With reference to Figure 3, summarise the trend in world GDP for the period 2007 to 2013** [2]

For the period 2007 to 2013, world GDP generally increased except for last qtr 2008 – 3rd qtr 2009) which experienced a fall.

- (aii) **To what extent does the data in Figure 3 account for the change in trade restrictive measures in Figure 4.** [4]

- *Evidence: Figure 3: global output fell for the period of 2008 -2009. Figure 4: there is a greater increase in the number of trade-restrictive measures.*
- *During recession, households' income fall and their purchasing power fall. Demand for goods and service fall and GDP falls. In order to protect home employment, government attempts to impose trade restrictive measures.*
- *However, this pattern does not hold throughout the period 2008 to 2013.*
- *Evidence : Figure 3 - In the years where the GDP is increasing, there is still an increase in the number of trade restrictive measures (2010 - 2013)*
- *There are other factors that can account for the increase in trade restrictive measures.*

- (b) **Explain how the shift from traditional protectionist measures to subsidies, as suggested in Extract 8, can impact businesses and governments in the globalised economy.** [6]

Impact on firms [up to 3 marks]

- *With a shift from traditional protectionist measures to subsidies, prices of goods of protected firms will fall due to the effects of removal of tariffs on finished goods, lower cost of production from the removal of tariffs from imported inputs and government subsidies to protected firms. This is unlike traditional protectionist measures such as tariffs which "raise business costs" (Ext 8)" Given that demand such goods are price elastic due to close competition from imports, a fall in price will result in a more than proportionate increase in quantity demanded and hence, an increase in total revenue. Profits will increase because total revenues rise as total costs of production fall thus these protected firms will receive a "boost" (Ext 8).*

Impact on governments [up to 3 marks]

- *Assuming other things remain constant, the shift from traditional protectionistic measures such as tariffs to subsidies is likely to worsen the budget balances of governments because tariff revenues are no longer collected but government spending now rise because of using subsidies to protected industries. Budget balances of governments will worsen, for example, from a large surplus to a*

smaller surplus or from surplus to deficit or from a smaller deficit to a larger deficit. For governments with reserves accumulated from past budget surpluses, their reserves will fall. For others without reserves, government debt will be incurred as borrowing is required to fund the subsidies.

- *[In the long run, the overall impact on governments' budget balances might be less negative than analysed above if subsidies turn out to be less inimical to trade than tariffs. This is because subsidies are less likely to invite retaliation. If trade volumes and values do rise after the shift, the extra income generated from trade activities (exports and imports) could yield enough tax revenues to help the government to finance the subsidies, leaving government budget balances no worse off than before the shift in the mode of protectionism.]*

(c) **Discuss the view that “protectionism makes a bad situation worse.”** [8]
(Extract 7).

Perspective 1 : Protectionism does make a bad situation worse

Evidence: According to Extract 7, economists were worried that ‘the world was repeating the mistakes of the 1930s’. **Theoretical explanation:** When an economy imposes various means of protectionism (say tariff) there is a possibility of the ‘beggar thy neighbour’ effect. An imposition of expenditure switching measure through tariff will reduce the level of exports of her trading partners assuming the demands of these exports are price elastic in the tariff imposing country. With a fall in export revenue the trading partners’ aggregate demand would decrease leading to a fall in their national incomes. This will lead to a fall in demand for imports from the tariff imposing country. Consequently the tariff imposing country will experience a fall in her net-exports and aggregate demand thus further reducing the level of her national income and employment. This will make the bad situation of recession worse.

Evidence: According to Extract 8, non-traditional protectionism such as subsidies, ‘buy-national’ restrictions and ‘standards protectionism’ may not benefit the countries if other policies are not doled out to support the sectors that the countries have a true comparative advantage in. **Theoretical explanation:** Often the identification of the sectors to be protected is not according to any potential comparative advantage. In the case of misidentification, the non-traditional protectionism will thus result in only higher cost being incurred without the possibility of enjoying economies of scale in the long run. Hence, in the long run, after the protectionism is lifted, the previously protected industries will no longer be internationally competitive in terms of price. This will lead to a fall in exports from these sectors, decreasing the rate of increase in aggregate demand of the economy and eventually leading to a slower increase in her national income, rendering the bad situation worse.

Evidence: According to Extract 8, Brazil and India have been held back because ‘the governments funneled state resources to preferred sectors....

slowing down their growth' **Theoretical explanation:** Protectionist measures could reduce economic growth as resources have to be funneled to protect these industries. There is a high opportunity cost of these scarce resources especially in emerging economies like Brazil and India. The allocation of resources to these measures would mean fewer resources are available for the development of infrastructure that are necessary to expand the productive capacities of these countries. This has the effect of hindering potential growth and thus prolonging the ongoing slow growth to be even slower in the long run, making the bad situation worse.

Perspective 2: Protectionism may not worsen a bad situation.

Evidence: According to Figure 4, protectionism increased from 2009 to 2010 and according to Figure 3 world GDP also improved during that period. **Theoretical explanation:** Protectionism measures could help to stabilise the domestic economy through protecting home employment. This will maintain consumers' and investors' confidence especially for countries with large domestic markets such as China. Thus, during periods of global recession, such as during 2009, protectionist measures may have benefitted these big economies to garner domestic investments as well as domestic consumption to spur actual economic growth. Thus, protectionism may not necessarily worsen a bad situation.

Conclusion/Possible evaluation:

Protectionism may bring benefits if the protectionist measures are temporary. Global growth rate slowed down after initial period of 2010 despite increases in global protectionism as seen from Figure 3 and Figure 4 respectively. This is so because prolonged protectionism could breed inefficiency and hamper growth in the long run. Thus in the long term protectionism will worsen a bad situation.

Marking scheme:

Level	Descriptors	Marks
L 3	For a well-developed answer with balanced perspective of the possible consequences of imposition of protectionist measures analysed in the context of the case study with good use of evidence.	5 - 6
L 2	For an answer that shows balanced perspective but undeveloped and there are limited references to evidence. Minor conceptual error.	3 - 4
L 1	For an answer that is limited in analysis and no evidence. Severe conceptual error.	1 - 2
E 2	Judgment is based on economic analysis and adequately substantiated.	2
E 1	For an unexplained assessment, or one that is not supported by economic analysis.	1

- (d) **In the light of creeping protectionism, discuss the extent to which supply-side policies on productivity and innovations can maintain high employment in Singapore.**

[10]

Intro: With creeping protectionism, there is the likelihood of a fall in exports of goods and services. As Singapore is highly dependent on export to sustain growth and employment, policies are required to address this issue to maintain growth and employment in Singapore

Supply-side policies: Examples of such policies are seen in Extract 9: productivity and innovation scheme, R& D fund, Intellectual Property Rights framework.

Perspective 1: Yes, supply-side policies on productivity and innovations could counter the trend of increasing protectionism thus maintaining growth and employment

Policies on R&D to encourage innovation and improvement in productivity can be effective:

Extract 8: trade protectionist measures tend to be concentrated in sectors that have long been protected: textiles, clothing, footwear, iron, steel, consumer electronics and agriculture.

Extract 9: Through R&D, new knowledge is created and new economic opportunities developed. Examples of new areas: development in water technology, biomedical sciences and clean technologies

These new developments would create new areas of comparative advantage as Singapore loses existing comparative advantage in other areas with the imposition of trade restrictive measures. Given that these products are new and tend to be unique in the initial period of production, they tend to be less vulnerable to protectionist measures from other countries.

R&D product innovation includes improvement in the quality, reliability of product or increase in the range of function of products. This will improve non-price competitiveness of exports thus exports will be less affected by protectionist measures.

R&D in process innovation includes more efficient method of production developed. An improvement in productivity of labour units or capital goods will reduce costs of production and maintain or improve price competitiveness of exports which will counter the protectionist measures.

Policy on training and retraining

Extract 9: Workforce and training support

New industries will mean a different skill set required. With workforce and training support, workers will be equipped with the new skills to provide an adequate supply of skilled labour for the new industries.

With the success of these measures, there will be higher level of exports which will increase in AD and therefore increase national output (actual

growth). There will also be increase in productive capacity due to the development in R&D which will promote potential growth economic growth. With the increase in output, more factors of production will be utilised leading to increase in employment.

Policy on intellectual property rights framework

Extract 9: Singapore has an advantage in promoting R&D given that there is an strong intellectual property rights framework.

Able to attract many MNCs to locate their R&D facilities in Singapore as the locations of such activities in Singapore will offer high value jobs without the need to consider trade protectionist measures. Limited protectionist measures imposed on intellectual property thus able to avoid the increasing protectionist trend.

Perspective 2: No, these measures may not be effective or may not be sufficient.

- *Structural changes that result from the implementation of these policies may lead to structural unemployment in the immediate period (short run) as workers are not occupationally mobile. Demand management policies such as expansionary fiscal policy are required to allow supply-side policies time to take effect.*
- *Success depends on the rate of innovation relative to other countries as other countries may also be adopting similar measures.*
- *Success varies depending on the type of protectionist measures. Improvements in price and non-price competitiveness will be able to counter measures such as tariffs but may not be effective in countering measures such as 'buy national', public procurement requirements.*
- *To counter the trend in protectionism, there is a greater need to build multi-lateral trade relationships in order to expand the range of markets for Singapore exports – as a member of regional trade bloc, it may help to circumvent protectionism*

Conclusion / Possible evaluation:

- *In the light of increasing protectionism that tends to be concentrated on protecting existing industries, supply-side policies focusing on creation of new areas of comparative advantage and non-price competitiveness of exports should allow Singapore to create new jobs and maintain employment. Thus supply-side policies should play a large role compared to other measures.*

Marking scheme

Level	Descriptors	Marks
L 3	For an answer that is well-developed with a balanced perspective of the effectiveness of supply-side policies in achieving the 2 macro-economic objectives in the context of increasing protectionism and good use of evidence.	7 – 8
L 2	For an answer that has a balanced perspective of the effectiveness of the policies in the given context of increasing protectionism but undeveloped and limited use of evidence.	4 – 6
L 1	For an answer that is limited in analysis or no application of given context.	1 - 3
E 2	Judgement supported with economic analysis	2
E 1	Judgement not substantiated.	1