



ANDERSON JUNIOR COLLEGE

JC2 PRELIMINARY EXAMINATION 2014 Higher 1

ECONOMICS

8819/01

Paper 1

16 September 2014

Additional Materials: Answer paper

3 hours

READ THESE INSTRUCTIONS FIRST

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

Write in dark blue or black ink.

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

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

Section A

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

Section B

Answer **one** question. Begin your answer to **Section B** on a fresh sheet of writing paper.

At the end of the examination, **fasten your answers to each question separately**.

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

Indicate in the table below the **question number** of the question in **Section B** you have attempted.

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

Name _____ ()

PDG ____/13

Section A	Marks Awarded
1	/ 30
2	/ 30
Section B 3 / 4*	/ 25
* Delete accordingly	
Total Marks	/ 85

This document consists of **8** printed pages and **2** blank pages.

[Turn over]

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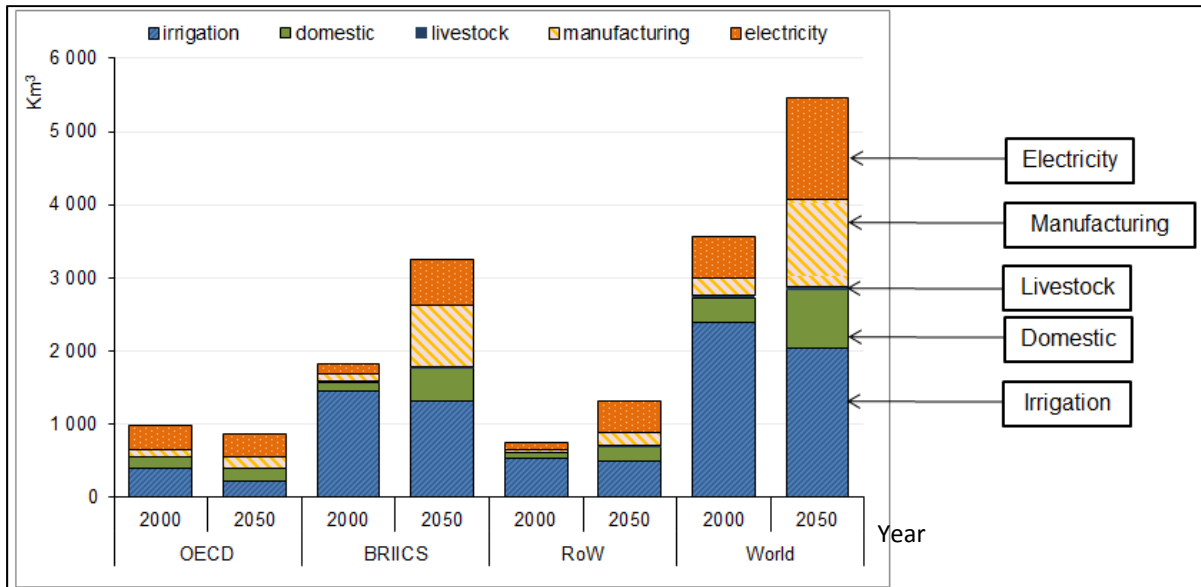
Section A

Answer **all** questions in this section.

Question 1

Water Scarcity

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

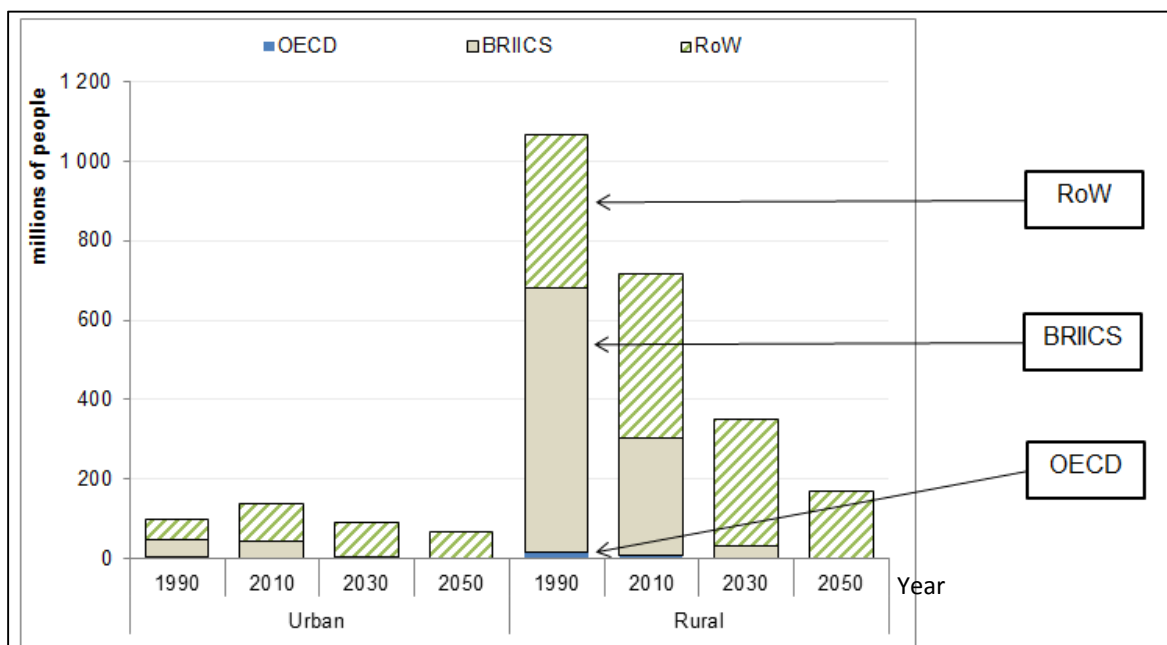


*BRIICS: Brazil, Russia, India, Indonesia, China, South Africa

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) explain two main components which account for the difference stated above. [4]
- (b) Explain the likely impact of a tax on groundwater on the market for potable water. [2]
- (c)
 - (i) With reference to the data, explain what is meant by water is 'underpriced'. [1]
 - (ii) Using a diagram, explain why the Dutch government intervened in the market for the extraction of groundwater. [4]
 - (iii) Explain how the tax on extraction of groundwater corrects the problem stated in (c)(ii). [2]
 - (iv) Explain how the tax on consumption of potable water in Extract 4 corrects the problem of imperfect information. [2]
- (d) With reference to the data, to what extent is the trading of water rights effective in achieving an efficient allocation of resources? [6]
- (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. [8]

[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 licences. 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.

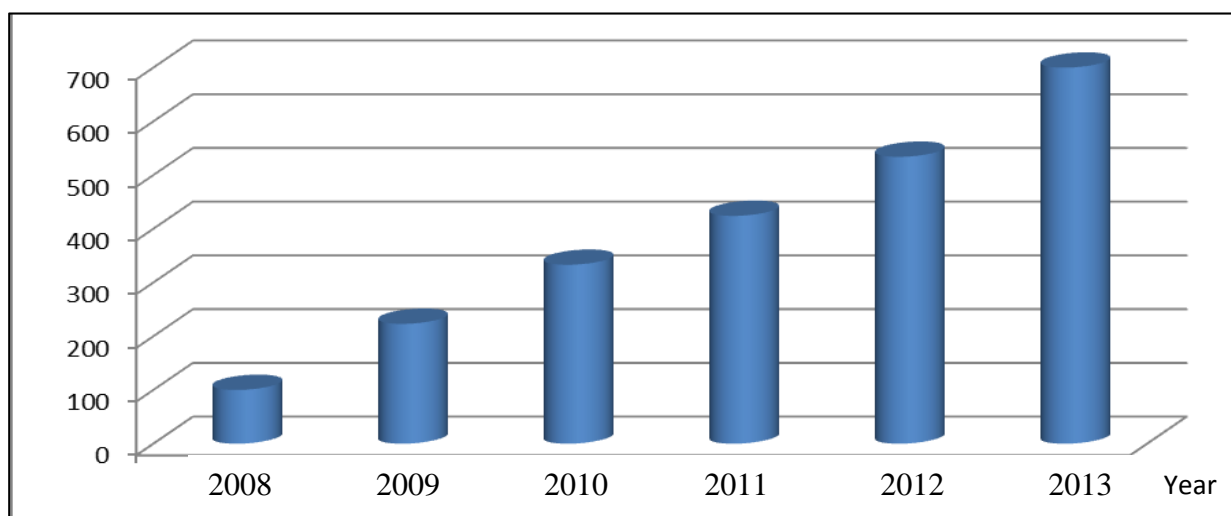
Adapted from: Prime Minister's Office, 19 November 2012;
and *The Straits Times*, 2 August 2014

**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? [6]
- (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 in Singapore. [8]

[Total 30]

Section B

Answer **one** question from this section.

- 3** **(a)** Explain, with the help of examples, the concepts of price elasticity of demand and price elasticity of supply. **[10]**
- (b)** Examine the relevance of elasticity concepts for the Singapore government's policies to correct market failure. **[15]**
- 4** Some economists have argued that inflation in many advanced and emerging economies has remained remarkably subdued despite soaring globalisation.
- (a)** Explain the domestic and external effects of inflation. **[10]**
- (b)** Globalisation is inflationary. Discuss. **[15]**

End of Paper

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