HWA CHONG INSTITUTION
C2 Preliminary Examination
Higher 1

CANDIDATE NAME		**CT GROUP**	14
CENTRE NUMBER		**INDEX NUMBER**	

ECONOMICS **8819/01**
Paper 1 **28 August 2015**
3 hours

Additional Materials: Answer Paper

READ THESE INSTRUCTIONS FIRST

Write your **Name, CT group, Centre number and Index number** clearly in the spaces at the top of this page and on every page 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 and tape.

Section A
Answer **all** questions.

Section B
Answer **one** question.

Begin each question on a fresh sheet of writing paper.

At the end of the examination, fasten the answer scripts to Section A Question 1, Section A Question 2 and Section B **separately** with the 3 cover pages provided.

The number of marks is given in brackets [ ] at the end of each question or part question.
You are advised to spend several minutes reading through the questions before you begin writing your answers.
You are reminded of the need for good English and clear presentation in your answers.

This document consists of **8** printed pages.

[Turn over

Section A

Answer **all** questions**.**

Question 1

The Market for Liquefied Natural Gas

Extract 1: LNG Production

Natural gas accounts for approximately 1/4 of global energy consumption. One source of natural gas, liquefied natural gas (LNG) involves squeezing and cooling gas until it becomes a liquid, and then shipping it by tanker. While this method is inherently costlier than sending it down a pipeline, 50 years since the first shipment left Algeria, LNG is no longer exotic, complicated or marginal. It has been the fastest growing source of natural gas supply and is set to play a greater role in its contribution to natural gas supply when existing LNG projects under construction in Australia come to fruition.

Existing exporters such as Russia, which supplies just under 5% of the world LNG market, aim to raise production to 20% by 2030. Following Russia's decision last year to liberalise LNG exports, Total, a French energy company, and its Russian partner Novatek agreed in 2013 to invest in the Yamal project in the Arctic to extract LNG from Russia's vast natural gas reserves and ship it via a new maritime route to Europe and Asia. It requires high performance technologies to manage production in extremely cold temperatures.

Capacity in LNG shipping is rising too, with 16 new giant tankers entering the global fleet in 2013, and another 31 due for delivery this year. The International Gas Union (IGU) forecasts a "deep softening" of the cost of shipping LNG.

Source: *The Economist*, 31 May 2014 and International Gas Union, 2014

Extract 2: Evolving Market Dynamics of Global LNG

Japan, South Korea, and Taiwan have been and are expected to remain the backbone of the global LNG market. They are characterized as heavily industrialized with limited domestic energy options. Countries where LNG consumption is new and growing such as China and Europe tend to have more available competitive options, including coal and crude oil.

The principal risks for LNG market growth come from uncertainties around the global and regional economies and from increasing gas-on-gas competition. Global economic growth has been decelerating, with the recovery from the global financial crisis of 2008/2009 being relatively slow and uneven. More importantly, relatively new, "unconventional" sources of natural gas, including shale gas and coal bed methane, could transform the world's energy markets. While global gas reserves have been growing steadily for decades, over the last decade the so-called unconventional gas revolution has roughly tripled the resource base that can be economically recovered. Adding to the pressures from unconventional gas development are the planned or proposed new/expanded gas pipelines from Russia, the Caspian and/or Central Asia into Europe or Asia that could also threaten potential LNG markets.

Source: *Oil and Gas Financial Journal*, 1 May 2013

Table 1: Crude Oil and LNG Prices 2010 – 2014

	2010	2011	2012	2013	2014
Crude Oil ($ per barrel)	79.0	104.0	105.0	104.1	96.2
LNG ($/mmbtu*#)	10.9	14.7	16.6	16.0	15.8

*million British thermal units – a measurement of energy content in fuel
LNG prices primarily reflects the Japanese market for LNG

Source: World Bank

Extract 3: Oil dive set to transform LNG market

The downward spiral in oil prices is poised to shake up the LNG market, a critical source of energy in East Asia and an alternative to Russian gas supplies in Europe. Given that many Asian customers are locked into LNG contracts which fix quantities traded, crude oil's price slide should be reflected in LNG prices by early next year. The coming decline in LNG prices would benefit consumers.

Source: Adapted from *The Financial Times*, 13 November 2014

Figure 1: Japanese Yen to U.S. Dollar Exchange Rate (2005 – 2013)

Source: Bank of Japan

Extract 4: U.S. agrees to export LNG to Japan

The United States has decided to allow exports of its LNG to countries with which it has not concluded free trade agreements, such as Japan. The U.S. decision has a potentially huge favourable impact on Japan's economy, promising lower LNG prices and assured supply. Even if Japan does not buy U.S. gas, its availability will give Japan leverage in negotiations with other suppliers. In 2012, Japanese LNG imports totalled ¥6 trillion, up from ¥3.5 trillion in 2010, worsening its trade account. Japan suffered the first annual trade deficit in 31 years in 2011.

Given the many unknowns surrounding Japan's energy policies in the wake of the nuclear accident at Tokyo Electric Power Co.'s Fukushima No. 1 nuclear power station, the one thing that is certain is that Japan will need every option to ensure that its economy is not crushed by high energy prices. No wonder then that Japanese trade minister Mr. Toshimitsu Motegi said he welcomed the U.S. decision "from the bottom of my heart."

Source: Adapted from *The Japan Times*, 3 June 2013

Extract 5: The Gas Is Greener

One factor which drives the adoption of natural gas as a fast-growing fuel is its sustainability as clean burning gas produces significantly fewer emissions than oil and coal. It produces 25 per cent less carbon when used in the power sector compared with fuel oil and 50 per cent less carbon compared with coal, 99 per cent fewer particulates, 99 per cent less sulphur oxide (SOx), and 85 per cent less nitrogen oxide (NOx) than traditional fossil fuels.

"Gas is safe, clean, and inexpensive – representing a rare win-win opportunity, in which operational expense and emissions are reduced," says John Hatley, Vice President, Americas, Wärtsilä Ship Power. Hatley explains that nowhere in the world is the LNG shift more apparent than in North America. The "shale gas revolution" has made gas abundant and affordable.

Increasingly stringent emission standards are also behind the shift, as they are enforced both on land and at sea. When the North American Emission Control Area (ECA) was introduced in 2012 it brought stricter controls, rigourously limiting emissions in Canadian and U.S. coastal areas. “LNG contains no sulphur, far fewer particulates and less carbon, making it one of the fuels that complies with the limits enforced by the ECA,” Hatley says.

Europe, meanwhile, finds itself in a different situation, where the price of natural gas is lower than in Asia, but higher than the price of coal. The transition from coal to natural gas is being driven by governmental programmes that promote the use of renewable gas through subsidies. However, Torstein Indrebø, secretary general of the International Gas Union notes that, to date, European policy has led to an increase in the use of coal while gas demand has declined.

“It is economically more attractive to produce power from coal as the penalty for polluting the environment is far too low,” he says. “It is currently one of the International Gas Union’s key objectives to encourage the European Commission to put policies in place to make cleaner fuels, such as gas, more competitive in Europe.

“Natural gas is key to supporting and facilitating the use of renewables,” continues Indrebø. “In Europe, wind power typically only works about 30 per cent of the time, while solar power can only be generated 15 per cent of the time. However, people need energy 24/7. Gas is very reliable and flexible; it can easily be switched on and off, making it an excellent back-up system for the less predictable energy sources.”

Source: article in Twentyfour7.com, 2014

Questions

(a) With reference to Extracts 1 & 2, identify and explain **one** demand and **one** supply factor which could account for a slight fall in the world price of LNG. [6]

(b) **(i)** Using Table 1 and Extract 4, explain how you would deduce the price elasticity of demand for imports for LNG in Japan between 2010 and 2012. [3]

(ii) Explain whether the change in the Japanese yen between 2011 and 2013 (Figure 1) can correct Japan’s worsening trade account (Extract 4). [4]

(c) Compare the change in price of crude oil and LNG in Table 1 from 2010 – 2014. [2]

(d) Explain and comment on the view that ‘the U.S. decision has a potentially huge favourable impact on Japan’s economy’ (Extract 4). [5]

(e) **(i)** Explain the negative externality that arises with the use of oil and coal as fuel. [2]

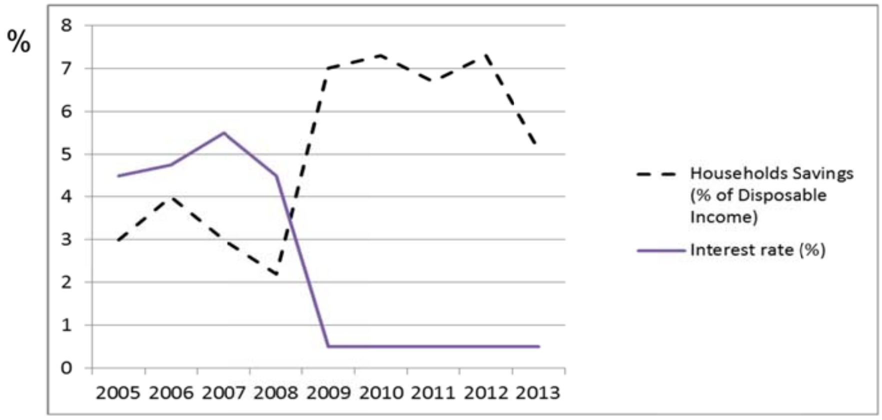
(ii) Discuss the effectiveness of U.S. and European government policies to respond to the negative externalities from the use of coal. [8]

[Total: 30]

Question 2

Financial Crisis, Austerity Measures and Cost of living Issues

Figure 2: Bank of England Interest Rates and UK Household Savings (% of Disposable Income)



Source: OECD & Bank of England

Extract 6: Austerity plan in UK is failing

The International Monetary Fund (IMF) has never been wildly enthusiastic about the UK Finance Minister George Osborne's tough austerity plan to shrink growing budget deficits by cutting back on government spending and raising taxes. It has been saying for at least a year that there should be a reassessment of fiscal policy if the recovery falters.

The IMF, while supporting the need for budget deficits to be reduced, believes action should not be so aggressive as to derail growth. It has done some recent work on fiscal multipliers which affect national income – the multipliers are much higher during nasty downturns than at other times. Research suggests that when interest rates are near zero, the multiplier could be quite high. Besides, the knock-on effects of tax and government spending on households and firms are more powerful than was previously thought.

However, Osborne's advisers have pointed out that the fiscal multipliers are weaker in open economies such as Britain than they are in more closed economies such as the US or Germany.

But austerity is still having a dampening effect on the economy, and is making it harder for the Finance Minister to hit his deficit reduction targets. The IMF is right. It is time to take stock. It would be a risk for Osborne to announce tax cuts and a slower pace of spending cuts in the budget. But it will be a risk – and probably a bigger one – if he does nothing.

Source: *The Guardian*, 24 January 2013

Extract 7: 'Recessions can hurt, but austerity kills'

Mass of data reveals that more than 10,000 additional suicides and up to a million extra cases of depression have been recorded across the two continents since governments started introducing austerity programmes in the aftermath of the crisis. In the US, more than five million people have lost access to health care. In Greece, there's a 200% increase in HIV cases. And in some of the worst-hit countries, both suicide and crime rates are up. David Stuckler, author of an explosive new book, says the facts speak for themselves.

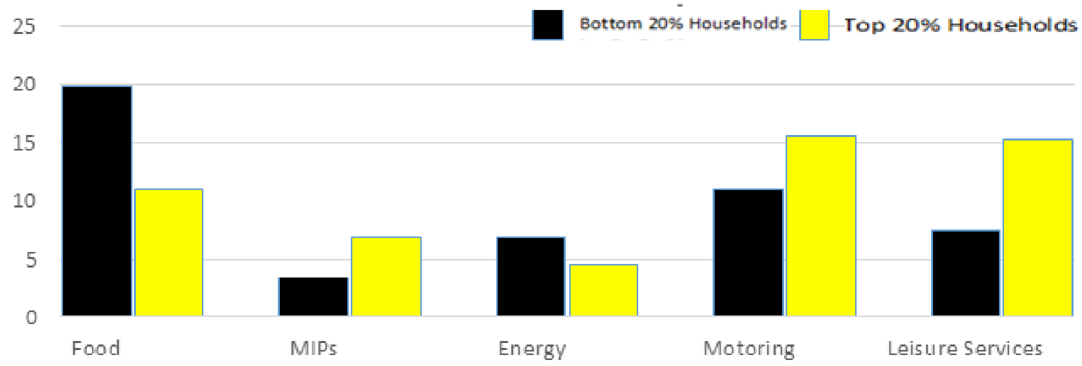
"Recessions," Stuckler says bluntly, "can hurt. But austerity kills."

Source: BBC News, 15 May 2013

Extract 8: Post-Crisis Living Standards and Rising Cost of living in the UK

Average UK living standards have fallen "dramatically" since the recession. The Institute for Fiscal Studies (IFS) calculated that a mid-range household's income between 2013 and 2014 was 6% below its pre-crisis peak. Rising childcare, food and energy costs, coupled with stagnating wages and cuts to benefits and tax credits, have widened the poverty gap. For the first time since the 1930s, benefits for pensioners are being cut in real terms by not being linked to inflation.

Figure 3: UK Households Budget shares (%) for key goods and services, 2011 – 2012



Note: 'MIPs' are mortgage interest payments and 'Other housing' refer to mainly rented apartments.

Source: Office for National Statistics, UK

Everyone is hit by the higher cost of living, but those with low incomes could feel the squeeze more. The report said that inflation between 2008 and 2013 was 20%, while energy prices rose by 60% and food prices were up by 30%. This had a disproportionate impact on poorer households. It also found that the pensioners had been hit hardest with 4.2% increases in their costs compared with the 2.4% rise as indicated by the CPI.

And when mortgage interest payments dropped by 40% since January 2008, those with relatively high incomes benefited from it. The report also found people with lower incomes are less likely to switch suppliers and shop around than those with a higher income. This is partly due to the rich having bank accounts for direct payments, or access to buy online or compare prices across a range of suppliers.

The government has already taken action to help families with the cost of living, including: increasing the tax-free personal allowance to £10,000; freezing council tax for five years; and freezing fuel duty.

Source: Various

Extract 9: Singapore's High Cost of Living May Come at a Cost

In the Economist Intelligence Unit's Cost of Living Survey, Singapore catapulted five places to become the most expensive city in the world.

Singapore, one of Asia's largest financial centres, has seen a big inflow of expatriates in recent years. Foreigners make up about 38 per cent of Singapore's population, up from about 25 per cent in 2000. More than 7,000 multinational companies operate in the city and expat workers are seen as key to developing Singapore, not just as a regional hub in finance but also in other sectors such as oil and gas. While low taxes, good air quality and less crime lure workers to Singapore from across the world, the recent push up in housing, schooling and transport costs could discourage expats from moving or staying in the city long-term, analysts said.

Rising costs and a growing population, which the government expects could increase to almost 7 million by 2030 from the current 5.3 million, has also led to discontent among locals who feel the influx of foreign workers has led to overcrowding on trains and buses, higher property prices and contributed to the overall rise in living costs.

Singapore is one of the most expensive places in the world to buy a car, with permits to buy new vehicles called a certificate of entitlement (COE) adding to the cost of buying a car in Singapore. High property prices, pushed up by increased demand from a growing population, have been one of the major contributors to the rising cost of living. For instance, Singapore property prices surged 50 percent between 2007 and 2011, driven partly by foreign buying.

For economists the implications of rising costs in Singapore could not be clearer: wage pressures could build up, they warn. Singapore could lose some of its competitive edge to fast-developing neighbors in Southeast Asia, if costs continue to rise, said regional experts. Despite the high expense of living in Singapore, some expats are willing to pay a premium for the quality of life offered by this island state.

Source: *Wall Street Journal*, 4 Mar 2014 and CNBC, 30 Jan 2013

Questions

(a) **(i)** Use the concept of opportunity cost to explain the theoretical relationship between interest rates and level of savings. [3]

(ii) Comment on whether the relationship is shown in Figure 2 from 2009 onwards. [2]

(b) Using the data provided in Extract 6, explain whether the call by IMF for a reassessment of the UK austerity policy is justified. [4]

(c) Using AD/AS analysis, explain the statement in Extract 6, 'austerity is still having a dampening effect on the economy, and is making it harder for the Finance Minister to hit his deficit reduction targets'. [4]

(d) Based on Extract 7, explain how austerity measures have adversely impacted the standard of living in some countries. [3]

(e) Extract 9 mentions the impact of rising cost of living on Singapore. Comment on the view that Singapore's economic growth will suffer due to inflation caused by rising cost of living. [6]

(f) Assess to what extent has living standards in UK been eroded by the austerity measures and rising cost of living. [8]

[Total 30]

Section B

Answer **one** question from this section.

3 Self-interested consumers and producers are only concerned with their own benefits and costs.

(a) Explain how the pursuit of self-interest addresses the central problem of economics. [10]

(b) Discuss the view that the use of subsidies is better than direct provision to correct the problem arising from positive consumption externalities, even as consumers and producers pursue self-interest. [15]

4 **(a)** Explain how international trade can lead to improved standards of living in a country. [10]

(b) One cost of globalisation is structural unemployment. Discuss the extent to which it is of most concern for different governments. [15]