VICTORIA JUNIOR COLLEGE

2014 JC2 PRELIMINARY EXAM

H2 ECONOMICS – PAPER NO. 9732/01

17 September 2014 8:00 – 10:15 am

Wednesday 2 hours 15 mins

Additional Materials: Answer Paper

READ THESE INSTRUCTIONS FIRST

Write your name and class 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 diagram, graphs or rough working.
Do not use staples, paper clips, highlighters, glue or correction fluid.

Answer **all** questions.

At the end of the examination, fasten your work securely, by question, using the strings provided.

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

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

Answer **all** questions.

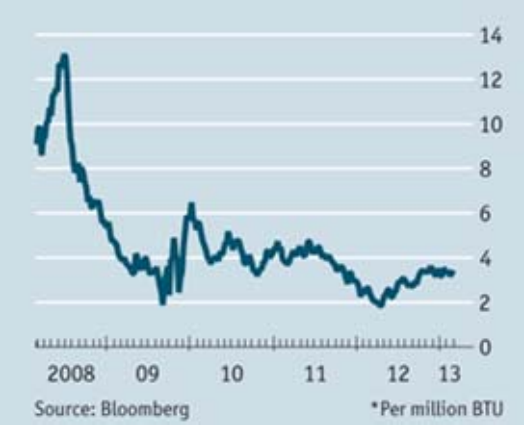
Question 1

US Natural Gas Boom

Extract 1: America's bounty - Gas works

At the turn of the millennium, America's conventional gas fields were in decline. Natural gas from shale rock was known to geologists but had never been worth extracting. Now shale contributes a third of America's gas supplies. By 2035, the country's share of total world supplies could be nearly half. A key reason for this rise is the improvement in hydraulic fracturing (or fracking) to obtain the gas, which caused the cost of producing natural gas to tumble down.

Figure 1: **USA natural gas price, US$***



Source: The Economist, 2 June 2012

Cheap gas is helping various parts of America's economy. The country's industry uses around a third of its gas output. The biggest winner might be the petrochemicals industry. It uses gas as feedstock to make chemicals such as methanol and ammonia, a vital ingredient of fertiliser. These chemicals in turn provide cheaper raw materials for carmakers, agriculture, household goods and builders, or go for export at prices to compete with the world's lowest-cost producers, the state-owned petrochemicals firms in the Middle East.

Dow Chemical and others have announced a raft of new investments in America to take advantage of low gas prices. The United States might export fewer cheap raw materials to countries with low labour costs to be made into goods to export back to America. The country could do the job itself, shortening the supply chain and returning manufacturing jobs to America in industries where petrochemicals are a large part of the cost base.

There are non-industrial benefits too. Low gas prices have meant saving the average American household US$926 a year and lowering the cost of heating schools and other government buildings.

Source: Adapted from, The Economist, 14 July 2012

Extract 2: America's cheap gas: Bonanza or bane

The shale gas billowing out of American soil is a source of concern as well as cheap energy. Instead of banking handsome profits, many of the oil and gas firms that drill for shale gas are suffering from the boom. Abundant supplies and slow growth in demand have sent gas prices crashing. After falling to below US$2 per mBTU (British thermal units) in early 2012, prices have now nudged back to US$3.40. But for many drillers this is still not enough. Most gas wells require US$4 or more to cover costs. However, energy giants such as ExxonMobil, Shell and Chevron are able to put up with low prices.

To cork the flow, firms have shut down some existing wells and stopped investment in new ones. Exporting liquefied natural gas (LNG) would be another way to deal with the gas glut. Outside America, prices are typically much higher. But gas-consuming American businesses object. In the hope of keeping domestic gas prices ultra-low, they are lobbying the government to block exports.

Source: Adapted from, The Economist, 2 March 2013

Extract 3: Thanks to LNG, spare gas can now be sold the world over

Some 90 per cent of gas trade in the world is regional, where gas is supplied through pipelines; liquefied natural gas (LNG) connects the bits where the pipelines do not reach. The technology for LNG allows "stranded" gas, too far from its markets to travel down pipelines, to get to customers. Some gas-market analysts reckon that the growth in LNG and its ability to link regional markets will cause a more global and competitive market to emerge.

However, building a liquefaction facility is highly capital-intensive. Big LNG projects need customers in order to secure finance for building the liquefaction and re-gas terminals and the specialist tankers that shuttle between them. And costs have been increasing steeply, making it ever harder for the export of natural gas to be profitable. Currently, only 19 countries export LNG, with the 10 biggest companies in the LNG market supplying more than two-thirds of the world's demand.

Source: Adapted from, The Economist, 14 July 2012

Extract 4: **Can natural gas help tackle global warming?**

The United States has reached a striking milestone. Carbon-dioxide emissions from the energy sector have sank to their lowest levels in 20 years. Many analysts give credit to the recent flood of cheap natural gas, which is shoving aside coal as America's top source of electricity. The burning of natural gas to produce a certain amount of energy creates only about half as much carbon-dioxide as from burning coal, with carbon-dioxide being the main gas warming the planet.

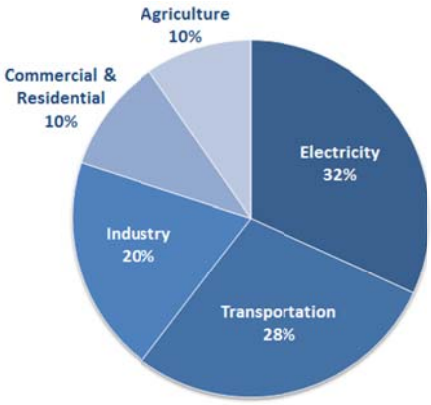
Yet some environmentalists have argued that the accolades for natural gas are premature. While the shale gas boom has led to lower carbon pollution from U.S. power plants, the process to extract natural gas from shale rock can release plenty of methane into the atmosphere, which is a potent greenhouse gas. Officially, the Environmental Protection Agency (EPA) estimates that those methane leakage rates are about 3 percent only. But the EPA number is only an estimate, and it's based on industry data that is hard to verify. However, it is possible for gas producers to employ a range of technologies, from better pipeline maintenance to dry seals on compressors that can reduce the amount of methane escaping into the air.

The view that natural gas has a modest role in a clean energy future is supported by the fact that natural gas is still a fossil fuel, which even if it produces less carbon than coal, still produces a fair amount of carbon. Studies have shown that replacing all of the world's coal plants with natural gas would do little to slow global warming as compared to having a climate policy that explicitly reduces emissions.

There is also the worry that the flood of cheap shale gas in the United States has undermined the advance of lower-carbon sources such as wind, solar, and nuclear power which could prove counterproductive in the long run. However, given the "constraints of money and politics", natural gas may still have an important role as a "bridge fuel" en route to the cleaner and renewable energy sources.

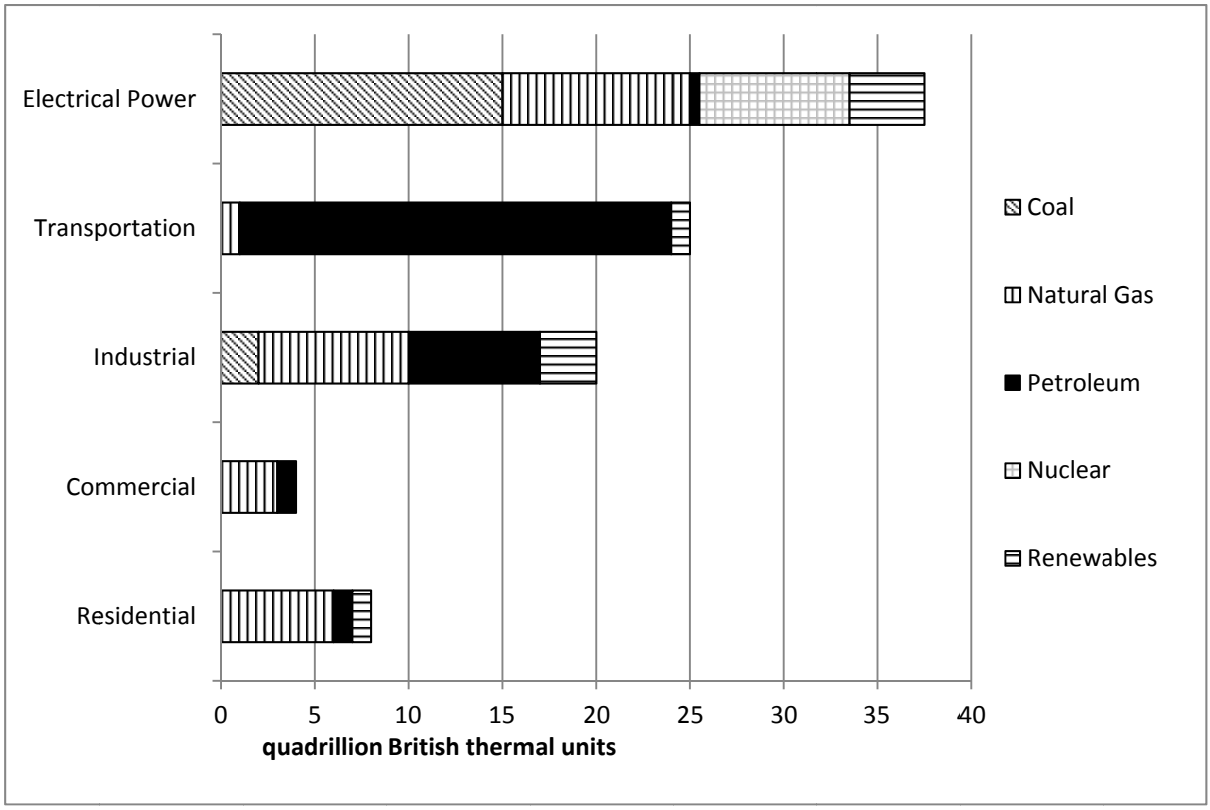
Source: Adapted from, Washington Post, 20 August 2012

Figure 2: Sources of greenhouse gas emissions in USA, 2012



Source: US Environmental Protection Agency

Figure 3: USA Energy Consumption by Fuel and Sector, 2012



Source: Bipartisan Policy Centre

Questions

(a) i) Describe the trend of the price of natural gas in USA between 2008 and 2012. [1]

ii) Using the data and a diagram, account for the trend observed. [4]

(b) i) With reference to the data, explain the type of market structure in which the US natural gas industry operates in. [2]

ii) Explain why big natural gas producers may be better able to withstand low prices of their output. [2]

(c) The price of natural gas is typically much higher outside of USA.

Explain how you would expect this price differential to change over time. [3]

(d) Assess how the export of natural gas will impact producers and households in USA. [8]

(e) Assuming that you are an economist, discuss the extent to which the increased availability of natural gas can address the problem of global warming. [10]

[Total: 30]

Question 2

A look at Germany and Spain

Table 1: Selected Economic indicators

Germany	**2010**	**2011**	**2012**
Real GDP growth (annual %)	4.0	3.0	0.7
Inflation (annual % change)	1.1	2.1	2.0
Unemployment rate (%)	7.1	5.9	5.4
Current account balance (in billions, US$)	207	273	240
Spain	**2010**	**2011**	**2012**
Real GDP growth (annual %)	-0.2	0.1	-1.6
Inflation (annual % change)	1.8	3.2	2.4
Unemployment rate (%)	20.2	21.8	25.2
Current account balance (in billions, US$)	-62.5	- 55.1	-15.6

Source: data.worldbank.org

Table 2: Euro/US$

	2009	2010	2011	2012
Euro/US$	0.72	0.75	0.72	0.78

Source: European Central Bank

Extract 5: European recession deepens, unemployment climbs

Four years after the most serious economic crisis in Europe since the Second World War, the continent is once again sliding deeply into recession. The new data on economic decline follow the release last month of figures revealing that unemployment in the Eurozone had reached a record level of 11.2 percent.

Based on its large export industry, Germany has been able to maintain economic growth in recent months. However, as austerity measures take effect across Europe and major markets in Asia recede, it is only a question of time before the current crisis hits Germany full force. These European economies are forced to cut spending even further especially to public sector wages and pensions, and raise taxes to retain access to the capital market, even though they had no growth to speak of. In Spain, its government has announced its aim to slash the budget deficit to the European Union's 3 percent (of GDP) target by 2016. One of the measures is the €6.5 billion cut in public services including the elimination of 57 public organisations and 90 other state and regional bodies.

Adapted from Bloomberg, Aug 2012

Extract 6: Spanish Crisis

During the 1990s and early 2000s, Spain enjoyed rapid economic growth. However, in 2008, Spain was badly affected by the global credit crisis, where households were burdened by huge mortgage debt, leading to a deep recession that they are still struggling to recover from. Spain has seen a relative decline in competitiveness compared to the Eurozone average. This has made Spanish exports more expensive. Being part of the Eurozone, they can't devalue, meaning there is no quick fix to their uncompetitive exports. Unemployment remains stubbornly high in Spain, especially youth unemployment. Nearly a third of Spain's workforce is on temporary contracts, a large percentage that makes the jobless rate tremendously volatile and has reduced the incentive to train workers. Commentators have also pointed to an inflexible labour market where wage rigidity in Spain is high.

Adapted by Telegraph, UK April 2012

Extract 7: Germany's recovery

German Chancellor Angela Merkel must be in a mood to celebrate. Not only has the German economy bounced back from the 2009 financial crisis -- with revitalized export industries and record-low unemployment -- it has done so while most other European economies are still reeling. Job market has been helped as firms developed a series of flexible instruments that allowed them to tweak working hours and pay to their economic needs by temporarily cutting wages and hours, for instance -- rather than shedding workers when production declined.

These measures reduced costs, gave firms room to manoeuvre during the recent crisis, and in general, reinvigorated German industries, which are once again admired around the globe. Germany's education and training system is also more job-friendly than its Euro counterparts.

Germany is well known for its export sector, and is still outperforming compared to other parts of Eurozone. The main driver of German growth in the first quarter was exports, according to the country's statistical office. That reflected German companies' success in selling top-of-the-range manufactured goods and services outside the Eurozone – especially to China and Russia. German products are in demand not because they are the cheapest but because they are the best.

There is clearly much to learn from the German model, but blind replication may not be the answer.

Adapted from BBC news, July 2013

Extract 8: EU warned against trade protectionism

The complaints the EU plans to file with the World Trade Organization (WTO) against Chinese duties on seamless steel tubes are connected to the recent accusation of China dumping solar panel into EU. This has created disputes between the two sides, but mounting trade protectionism will cause serious damage to the EU amid its economic slump, an expert said Wednesday.

"The EU has seen a sharp decline in its industrial core competitiveness. Facing China's low priced products, increasingly advanced technology and huge amount of investment, the EU can do nothing but resort to protectionism," Zhao Yongsheng, a visiting scholar with the Institute of European Studies of the Chinese Academy of Social Sciences, told the Global Times. "The EU is willing to engage in tit-for-tat duties. Even though it always advertises itself as a paragon of openness and democracy, the EU is now practicing a 'closed-door' policy. China is the EU's biggest source of imports by far, and has also become one of the EU's fastest growing export markets thus the effects of such a practice will be seriously damaging to the EU at a time of economic slump," Zhao said.

Adapted from *FT.com,* June 2012

Questions:

(a) i) Describe the trend in the current account balance of Spain between 2010 and 2012. [2]

ii) Explain a possible reason for the changes in Spain's current account balance from 2010 to 2012. [2]

(b) Using the data, explain whether there was an improvement in the average standard of living of the residents of Germany in 2012. [4]

(c) Using the AD-AS model, explain how austerity measures may have deepen the recession in the EU. [4]

(d) Using the data, discuss whether the EU should implement protectionism against China. [8]

(e) Discuss whether Spain should adopt similar measures as Germany to address her macroeconomic problems. [10]

[Total: 30]

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