



TEMASEK JUNIOR COLLEGE
Preliminary Examination 2016
General Certificate of Education Advanced Level
Higher 2

ECONOMICS

9732/01

Paper 1

Wednesday 31 August 2016

2 hours 15 minutes

Additional Materials: Answer Paper and Cover Page

READ THESE INSTRUCTIONS FIRST

Do NOT turn over this page until you are told to do so.

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

Write in dark blue or black pen.

You may use an HB pencil for any diagrams or graphs.

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

Hand in your answer scripts to each question separately.

Answer **all** questions.

Begin each question on a fresh sheet of paper.

At the end of the examination, fasten your work for each case study separately.

Attach the cover page to your work for Question 1.

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

This document consists of 7 printed pages and 1 blank page.



Temasek Junior College
Economics

[Turn over

Answer **all** questions.

Question 1 Go Green D...decade

**Table 1: Installed Capacity of Photovoltaic Systems (Solar Panels)
(in Megawatt Peak*)**

	2009	2010	2011	2012	2013	2014
Total	1.9	3.8	5.9	33.3	53.8	99.2
Households	0.1	0.1	0.3	2.2	4.4	7.8
Industrial and Commercial	0.3	1.9	3.7	31.1	49.4	91.4

*Megawatt peak which is typically used as a measure of installed capacity

Source: Energy Market Authority (EMA) of Singapore, 2015

Extract 1: Renewable Energy Policy in Singapore

Renewable energy ("renewables") is energy generated from natural resources that can be replenished. These include solar, wind, geothermal and hydro. There are many factors that contribute to the quest for cleaner energy. Singapore's population is predicted to rise to 6.9million and the city-state wants to make a contribution to global efforts to reduce the impact of human activities on the climate. The high price of oil, over \$100 per barrel in recent years, has also provided an incentive to seek viable alternatives. The government has adopted a consistent set of policies to reduce the carbon footprint of industry and households, firstly by creating greater competition in electricity generation and now through carefully calibrated interventions in the market for renewable sources.

In Singapore, there are limited renewable energy options. There are no hydro resources, wind speeds and mean tidal range are low, and geothermal energy is not economically viable. Solar energy remains the most viable renewable energy option for Singapore. It is clean, generates no emissions and requires no fuel imports. Solar generation takes place during the day, which coincides with peak demand. Being in the tropical sun belt, Singapore enjoys an average annual solar irradiance of 1,150 kWh/m²/year¹.

In anticipation of the deployment of more renewables in the grid as technology improves and prices fall, the government has provided funding for research and development efforts in this area. These include efforts to aid the industry's capability development on potentially promising renewable technologies in Singapore. Energy Market Authority (EMA), Singapore's energy market regulator, is charged with the responsibility to enhance Singapore's market and regulatory framework so as to facilitate the deployment of such renewable energy sources.

Adapted from: *Development of Intermittent Generation Sources*, July 2014

Extract 2: The Electricity Market in Singapore

As Singapore's economy and population grow, so does its energy use. Whether in terms of natural gas or electricity, the country has been using more energy over the years. In 2014, consumption of electricity came up to 46,403.0 GWh². Being a small country, Singapore

¹ Kilowatt hours per square metre per year.

² Gigawatt hours

imports most of the fuel needed to generate electricity to power up the city. Today, about 95 percent of the electricity is produced by burning natural gas, the cleanest fossil fuel. Industrial and commercial users account for 80% of energy use.

Singapore's electricity market was liberalised in 2001 to foster competition and bring about greater efficiency and innovation. Prior to this, the industry was vertically integrated and government owned. The industry is regulated by the Energy Market Authority (EMA). As the regulator, EMA issues licences to companies who are involved in the generation, retail and transmission of electricity and other activities. These companies each play a different role to ensure that homes, offices and industries have a competitive, secure and reliable supply of electricity.

The electricity market is complex but basically consists of two sectors, a contestable sector and a monopoly sector. The former comprises electricity generating companies (gencos), which are privately owned profit makers. Competition has motivated the gencos to switch from oil powered steam generation to cheaper gas-fired plant. The EMA notes that this switch has reduced electricity prices by around 15%.

Gencos are free to invest in new generation capacity but are required to sell electricity to the Singapore Power Assets (SPPA). SP Power Grid Ltd holds a licence from SPPA to transmit electricity to commercial and domestic consumers. Currently there are fifteen generating companies who compete to supply electricity to the natural monopoly, SP Power Grid Ltd, that is responsible for electricity transmission.

The demand for energy is subjected to peak loads. To meet daytime peaks, enough generating capacity is needed and electricity cannot be stored. Conventional generating methods result in surplus capacity and firms have looked at different methods of selling this excess. SP Power Grid Ltd has explored whether different tariffs could be charged for domestic and industrial customers.

Source: adapted from <https://www.ema.gov.sg/Electricity>, accessed on 17 July 2016

Extract 3: Developments in Global Oil and Gas Production

Upstream price reductions have characterised the oil and gas industries since mid-2014. The sharp fall in crude over the past three months has produced an unusual amount of concern that, with inflation already dangerously low across much of the developed world, cheaper oil will worsen the problem.

Such fears are misplaced. To think that lower oil prices are a net negative for the world economy, and particularly for the advanced economies, is to misunderstand the problem with deflation and the cures for it. A falling overall price level, by and of itself, is not necessarily a bad thing.

Yet, while lower oil prices will have a one-off effect on the price level and hence reduce inflation, that should boost growth rather than retarding it. Lower oil prices may hurt capital-intensive extractive industries in the medium term, but they benefit households almost immediately through cheaper petrol and other fuels. An unexpected fall in the general price level raises real incomes.

Whatever is behind the falling cost of crude, the policy message is the same. At the current conjuncture, cheaper oil and loose monetary policy are complements, not substitutes. Central banks, particularly in the eurozone and Japan, have been struggling with preventing

a sustained slide into deflation and economic stagnation. The fall in the oil price has given them a helping hand.

Adapted from: *Financial Times*, July 2015

Questions

- (a) (i) Summarise the change in the installation of solar panels shown in Table 1. [2]
- (ii) Identify **two** reasons that could account for the change in the pattern of solar panel installations. [2]
- (b) (i) Explain a possible reason why the transmission of electricity has been left to a single supplier. [4]
- (ii) Explain why the government of Singapore has introduced competition in the market for electricity generation. [4]
- (c) Assuming that SP Power Grid Ltd. is a profit maximiser, discuss whether SP Power Grid Ltd. can use price discrimination to sell electricity to different households and firms. [8]
- (d) "Cheaper oil prices and loose monetary policy are complements, not substitutes". To what extent do you agree with this assertion? [10]

[Total: 30]

Question 2 Emerging From Crisis – Sluggishly

Table 2: Russia's Terms of Trade, 2010 – 2014

Year	2010	2011	2012	2013	2014
Terms of Trade	100.0	120.8	123.6	116.8	112.1

Source: OECD, 2015

Table 3: Selected Macroeconomic Indicators for Russia, 2010 – 2014

	2010	2011	2012	2013	2014
GDP Growth Rate (%)	4.5	4.3	3.4	1.3	0.6
Trade Balance (US\$ millions)	120,875	163,398	145,076	123,679	134,497
Net Direct Investment (US\$ millions)	-9,448	-11,767	1,765	-17,288	-35,480

Source: OECD, Central Bank of Russia

Extract 4: Winners and losers of oil price plunge

Suddenly the world is awash with oil. The scale of the current oil shock is difficult to exaggerate. As late as October, a “key concern” of the International Monetary Fund (IMF) was the risk of an oil price spike caused by geopolitical tensions. Instead, rising production and weaker demand growth have left suppliers competing to find willing customers. The plunge in oil prices now threatens oil-exporting Russia's living standards and public finances to the point where it will start 2015 as a devalued and hostile nation.

In normal times, the effects of the oil price drop should act as an international stimulus that will nevertheless redistribute income heavily from oil-exporting countries to oil-importing countries. A further boon for many economies is that the fall in fuel prices enables countries to cut fuel subsidies, removing significant pressure from the public finances. But this time, economists are actively debating whether the world has changed and other moving parts — such as falling inflation levels — will throw sand into the works of the usual economic relationships.

So far, so normal. But this time there are more voices than usual suggesting expectations of a global boost are deceptive. Stephen King, chief economist of HSBC, believes lacklustre demand in China, Japan and Europe over the summer may cause households in these countries to save any windfalls they receive. Another reason this time is that a spectre of low inflation stalks many advanced economies. Households and companies prefer to “wait and see” before spending their money.

Source: *Financial Times*, 15 December 2014

Extract 5: Slowdown in the BRIC Economies

China – China has recorded extraordinary rates of economic growth for a very long time – an average of 10% a year for three decades. But it is based on very high rates of investment. When it is so high there's always a danger that many projects will turn out to be wasteful or unprofitable, undermining the finances of the investors themselves and anybody who has

lent them money. The other element in China's rapid growth is exports. That is not so reliable these days as the rest of the world struggles to recover convincingly from the financial crisis. The slowdown is happening. Already this decade, the average growth rate has slipped by more than two percentage points.

Russia – The sanctions imposed by the west, and the anxiety among investors that there might be more, have aggravated a slowdown that was coming anyway. Some US\$85 billion has been pulled out of Russia this year, according to Central Bank figures. Russia is often criticised for having a difficult business environment - red tape and uncertainty about the legal system. The IMF has made the point before that Russia needs a credible rule of business law. Russia's problems have already had an economic impact beyond its borders, notably in Germany. Exports to Russia have fallen sharply, which is one important factor behind Germany's close shave with recession.

Brazil – Another one of the BRIC with clear problems is Brazil, though it poses less of an international danger. Like Russia, it is an economy where commodities exports have played an important role in the successes of the 2000s. In Russia it was oil and gas. Brazil has iron ore and agricultural commodities such as soya, coffee and sugar. Commentators say that both need to take steps to make themselves less dependent on the commodities business. They need to improve their labour competitiveness, he says, and to make themselves more attractive for private investment in other industries.

India – Looking forward, India's economic performance seems to be causing rather less anxiety. Growth has picked up some momentum this year although it is well short of the highs of the previous decade. Many investors have welcomed the new government of Prime Minister Narendra Modi, which took office in May.

Source: BBC, 27 November 2014

Extract 6: India's Economic Revival

India's economy grew 5.7 per cent in the three months that ended in June from the same period a year ago, signalling a gradual revival in Asia's third-largest economy. The higher-than-expected growth figure suggests an improved outlook for an economy that has languished at less than 5 per cent growth for nearly two years. Helping to make macroeconomic conditions better, India's fiscal deficit in the four months ended July had reduced. Also, India's current account deficit was brought down to 1.7 per cent of gross domestic product in the fiscal year ended March, a sharp decrease from the 4.6 per cent in the previous year.

One of the main constraints to economic growth is the considerable backlog of infrastructure projects stalled by a sluggish bureaucracy. Economists also cite the hawkish stance of India's central bank as it has tried in recent months to control inflation.

Since taking office, the new government has moved to allow higher foreign investment in the insurance, military and railroad sectors, and Prime Minister Modi has declared his intent to speed up regulatory approvals for large infrastructure projects. But after three months in power without any radical changes announced, expectations have been tempered with the realisation that the process may be gradual.

Source: New York Times, 29 August 2014

Extract 7: 2014 World Competitiveness Report Ranking

IMD, a top-ranked global business school based in Switzerland, today announced its annual world competitiveness ranking. As part of its ranking of 60 economies for 2014, the IMD World Competitiveness Centre also looks at perceptions of each country as a place to do business. "The overall competitiveness story for 2014 is one of continued success in the US, partial recovery in Europe, and struggles for some large emerging markets," said Professor Arturo Bris, Director of the IMD World Competitiveness Centre. "There is no single recipe for a country to climb the competitiveness rankings, and much depends on the local context."

The US retains the No. 1 spot in 2014, reflecting the resilience of its economy, better employment numbers, and its dominance in technology and infrastructure. There are no big changes among the top ten. Small economies such as Switzerland (2), Singapore (3) and Hong Kong (4) continue to prosper thanks to exports, business efficiency and innovation. Most big emerging markets slide in the rankings as economic growth and foreign investment slow and infrastructure remains inadequate. China (23) falls, partly owing to concerns about its business environment, while India (44) and Brazil (54) suffer from inefficient labour markets and ineffective business management.

Source: IMD, 22 May 2014

Table 4: Singapore Trade Volume, January – June 2014 (S\$ millions)

	Import	Exports
Total	237,985.9	261,342.6
<i>China</i>	27,771.8	31,364.6
<i>India</i>	5,880.9	6,623.8
<i>Russia</i>	4,308.5	381.8
<i>Brazil</i>	1,395.4	778.9

Source: International Enterprise Singapore, 2015

Questions

- (a) (i) Describe the change in Russia's terms of trade from 2012 to 2014. [1]
- (ii) Suggest a possible reason for your observation in (i). [2]
- (b) Account for the claim that the fall in oil prices would "redistribute income heavily from oil-exporting countries to oil-importing countries" (Extract 4). [3]
- (c) Comment on whether there is sufficient data to conclude that "looking forward, India's economic performance seems to be causing rather less anxiety". [6]
- (d) In view of the developments in 2014, assess the likely change in the external value of the Singapore dollar. [8]
- (e) Discuss the alternative policies Russia might adopt to improve its balance of payments position, in view of the internal and external challenges it faces. [10]

[Total: 30]

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