



SERANGOON JUNIOR COLLEGE

JC2 Preliminary Examination

ECONOMICS

9757/01

Higher 2

PAPER 1

11 September 2017

2 hours 15 minutes

Additional Materials: Answer Paper

READ THESE INSTRUCTIONS FIRST

Write your name and civics group on all the work you hand in.
Write in dark blue or black pen on both sides of the paper.
You may use an HB pencil for any diagrams, graphs or rough working.
Do not use staples, paper clips, highlighters, glue or correction fluid.

Answer **all** questions.

Start your answer to each case study question on a new sheet of writing paper.

Fasten your answers to each question separately.

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

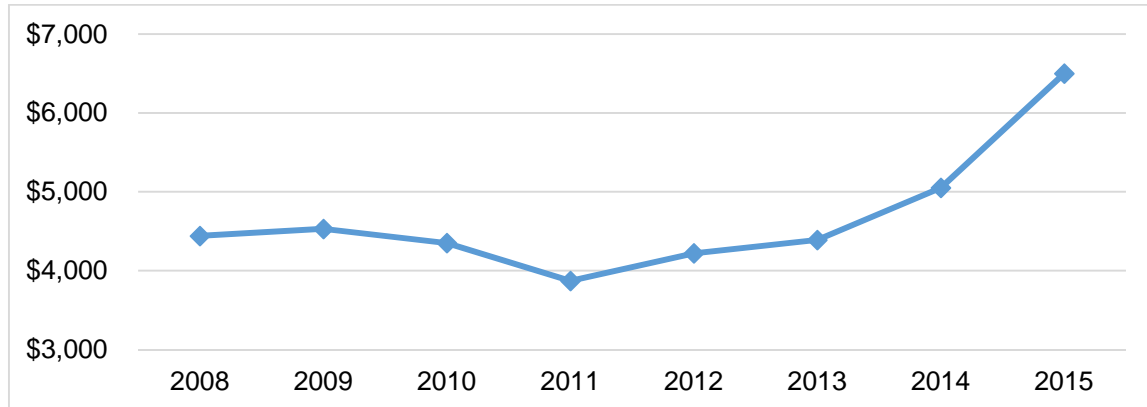
This document consists of **7** printed pages and **1** blank page.

Answer **all** questions.

Question 1

The automobile and energy industries

Figure 1: The world price of lithium (US\$)



Source: Metalary, accessed Aug 2017

Extract 1: The electric car revolution is accelerating

Electric cars will outsell fossil-fuel powered vehicles within two decades as battery prices plunge, turning the global automobile industry upside down and signalling economic turmoil for oil-exporting countries.

The Bloomberg New Energy Finance (BNEF) forecast says adoption of emission-free vehicles will happen more quickly than previously estimated because the cost of building cars is falling so fast. The seismic shift will see electric cars account for a third of the global automobile fleet by 2040 and displace about 8 million barrels a day of oil production - more than the 7 million barrels Saudi Arabia exports today.

China, the US and Europe will drive demand for battery powered cars over the next 25 years, according to BNEF. These governments which have already been the most advanced in providing subsidies and installing charging points, will reap the benefits sooner than other emerging economies like India.

"Electric cars are intrinsically cheaper than gas or oil fuelled cars because they're simpler and their maintenance is a lot easier," said Francesco Starac, Chief Executive Officer of Enel SpA, in an interview in Rome.

While traditional car suppliers may be hurt by electric vehicle growth, some commodities will get a lift. Demand for lithium will rise significantly when electric vehicles become mainstream as the commodity is a vital component for lithium-ion batteries. Extraction of lithium from brine requires a lengthy evaporation process that lasts between 8 months to three years.

Source: Bloomberg, July 2017

Extract 2: Should Tesla be worried about competition?

Tesla Superchargers are a network of 480-volt fast-charging stations built by Tesla Inc. to allow longer journeys for their all-electric manufactured vehicles through quick charging of the vehicle's battery packs. Such convenient charging options to its car users has given Tesla a competitive edge, given that no other player has been able to replicate this kind of network so far. While other car makers are working on fast charging alternatives, competing with Tesla on the charging network might be tough for other automakers, given its first mover's advantage. Tesla is the only automaker exclusively developing electric cars on a significant scale and this gives it an edge over other automakers that also need to focus on their traditional models.

Source: Forbes, 4 Jan 2016

Extract 3: Intense competition leads to low profit margins for automakers

Japanese automakers Toyota and Honda have among the highest profit margins in the business at 13.8% and 13.1%, respectively. In contrast, General Motors (GM) has a relatively lower margin of 8.5% and Ford the lowest with a margin of 8.2%. The biggest reason for the difference between Japanese and American manufacturers' profit margins is the weak Japanese yen. The yen depreciated by 29.2% against the US dollar over the past two years. Toyota exports about 56% of the vehicles it manufactures in Japan—more than both Nissan and Honda. This helps it to achieve higher margins.

Japanese automakers are also known for using common components across different models. This results in significant cost savings for the manufacturer. However, in the US, labour problems and significant healthcare costs contribute to their lower profit margins.

The automobile industry in general has lower profit margins primarily because of intense competition and compliance to stringent fuel emission standards and fuel efficiency requirements.

Source: Market Realist, 5 Feb 2015

Extract 4: Car industry: What Australia could learn from state support around the world

Car manufacturing is a proud pillar of the western world's industrial history, but the industry was facing serious problems which afflicted automotive superpowers such as the US, the UK, France and now Australia, where Toyota will close all of its factories by 2017. But in recent years some of those countries have at least stopped the decline of the industry. Government intervention has been key in rebuffing the global pressures such as cheaper labour elsewhere, deteriorating consumer confidence and excess factory capacity that have seen car plants shut all over the world since the credit crunch exposed an over-expanded and over-leveraged industry.

The US was the most successful example of intervention with the managed bankruptcies of GM and Chrysler which were supported financially by the government. "Despite being seen as a free market, the US had an industrial policy to rescue those car manufacturers and get them to shift to new low-carbon vehicles," said Professor David Bailey of Aston University. Without government intervention, the US car industry would not have survived on its current scale, he said.

If it were a free market, two of Detroit's biggest companies would have gone bankrupt as they were not fleet-footed enough for a global car market that had seen the likes of Toyota enter GM and Chrysler's backyard. But the Bush and Obama administrations took the view that the collapse of two-thirds of the US automobile industry would have ramifications that stretched far beyond the industry, with hundreds of thousands of jobs at risk in the supply chain.

Source: The Guardian, 10 Feb 2014

Extract 5: Big six energy firms braced for government price crackdown

UK Prime Minister, Theresa May, said the energy market was not working after a flurry of price rises by the big six companies – British Gas, E.ON, EDF Energy, npower, ScottishPower, and SSE – and dozens of smaller suppliers. A government crackdown is expected, most likely in the form of a price cap on the standard variable tariffs affecting nearly two-thirds of households.

Steep hikes in fuel bills by the big six, who control more than 80% of the market, have prompted calls for action by consumer groups. The suppliers have blamed a series of factors, from smart meter installation costs and green energy policies to, most frequently, rising wholesale energy costs. But the energy regulator Ofgem said in January that while wholesale costs had gone up, they were not large enough to warrant passing on to consumers.

Source: The Guardian, 17 Apr 2017

Questions

- (a) Describe the trend in the world price of lithium from 2008 to 2015. [2]
- (b) With reference to Extract 1, what can you conclude about the price elasticity of supply of lithium? Explain your answer. [2]
- (c) Analyse the likely impact of falling prices of electric cars on the market for crude oil. [4]
- (d) Explain the barriers to entry created by Tesla in the market for electric cars. [4]
- (e) To what extent does a weak yen help to boost the profits of a Japanese automaker such as Toyota? [8]
- (f) Discuss the reasons for a government's decision to either regulate or subsidise big firms such as those in the automobile and energy industries. [10]

[Total: 30]

(ai)	<p>Describe the trend in world lithium prices from 2008 to 2015.</p> <p>Overall trend: world lithium prices rose from 2008 to 2015.</p> <p>Refinement: World lithium price fell between 2009 to 2011.</p> <p>Sharp increase from 2014-2015 of about 37%.</p>	[2]
(aii)	<p>What can you conclude about the price elasticity of supply for lithium?</p> <p>Supply of lithium is likely to be price inelastic. Extract 1 mentioned that lithium extraction requires a lengthy process that lasts between 8 months to 3 years which means that it takes a long time for firms to increase output. As a result, in the short run, when prices rise, quantity supplied can only rise by less than proportionately.</p> <p>Marking scheme:</p> <ul style="list-style-type: none"> • State price inelastic of supply [0.5] • Case evidence [0.5] • Explanation [1] 	[2]
(b)	<p>Analyse the likely impact of falling prices of electric car on the market for crude oil.</p> <p>Fuel powered car and electric car are substitutes → Falling prices of electric car → fuel powered cars relatively more expensive → fall in its demand as consumers switch to the cheaper electric cars, ceteris paribus. [1m] → fuel powered cars and petrol are complements → fall in demand for petrol as well as crude oil since petrol is made from crude oil [1] → surplus of crude oil → downward pressure on prices [1] → thus equilibrium quantity and price of crude oil will fall. [1]</p> <p>Marking Scheme:</p> <ul style="list-style-type: none"> • Explain the effect on fuel powered car (Identify determinant as change in price of substitutes): 1m • Explain the effect on crude oil (identify factor as complements): 1m • Surplus, downward pressure on price: 1m • Effect on P and Q: 1m <p>Note: diagram is not required, if students are able to explain the impact clearly, can go up to 4m.</p>	[4]
(c)	<p>Explain the barriers to entry created by Tesla in the market for electric cars.</p> <ol style="list-style-type: none"> 1. Explain briefly what BTE is <ul style="list-style-type: none"> ➤ Barriers to entry are obstacles that prevent new competitors from easily entering an industry or area of business. 2. Barriers to entry created by Tesla 	[4]

	<p>1. Economies of scale</p> <ul style="list-style-type: none"> ➤ Case material: “Tesla is the only automaker exclusively developing electric cars on a significant scale” in contrast to other auto makers who have to produce traditional cars as well. This suggests that Tesla is able to enjoy greater economies of scale which gives it an edge over its competitors. ➤ When Tesla develops electric cars on a large scale → workers able to specialise their task (e.g. designing, manufacturing, assembly etc) → overall productivity rises → unit COP falls ➤ Produce on a large scale → able to buy parts (e.g. batteries) in bulk at a discounted rate, in fact Tesla makes most of the parts in house → total cost spread over a larger output → cost savings → AC falls. ➤ When AC falls → able to <u>price the car competitively</u> → deters potential firms from entering as they could make <u>subnormal profits if they were to set such a low level of price.</u> <p>2. Tesla’s Superchargers network serves as a BTE for other firms to enter the market</p> <ul style="list-style-type: none"> ➤ Extract 2 mentioned that Tesla Superchargers are a fast charging network which allows longer journey for their all-electric manufactured vehicles through quick charging of the vehicle’s battery packs, this serves as a form of barrier to entry. ➤ This is because Tesla’s Superchargers network is only compatible to Tesla’s electric cars. New firms who want to enter this market must be able to develop their own charging network so as to run their electric cars. Such efficient superchargers like those of Tesla take time to develop and if rivals’ chargers are not as efficient then their electric cars cannot function well → i.e they are poor substitute of Tesla’s electric cars → low demand for their cars → low revenue which cannot offset the high costs of developing electric cars. Therefore, the exclusive ownership of a resource (supercharger network) prevents new firms from entering the industry. ➤ <i>(Another eg of exclusive ownership of an important resource can be the extensive network of superchargers that Tesla has. As the network is extensive there would not be any prime area available for competitors to locate their charging stations. Without the convenience of charging their cars, demand will be very low)</i> <p>OR</p> <ul style="list-style-type: none"> ➤ Given that currently no other player has been able to replicate Tesla’s Supercharger network → this could suggest that other firms may not have accessed to the technology adopted by Tesla → thus not able to develop its charger network so as to compete with Tesla → suffers from low demand as they are unable to gain market share as consumers unwilling to switch 	
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	<p>due to poor network of chargers → not profitable → thus firms are deterred from entering.</p> <p>Marking Scheme:</p> <ul style="list-style-type: none"> ➤ Any well elaborated point on EOS: 2m ➤ Any well explained point on other relevant type of BTE: 2m 	
(d)	<p>To what extent does a weak yen help to boost the profits of a Japanese automaker such as Toyota?</p> <p>Meaning of weak yen → yen has depreciated or the foreign currency such as USD has appreciated. One USD can buy more yen.</p> <p>Profits = TR – TC</p> <p>How much profits increased depends on both revenue and cost factors but the weak yen may play a bigger role in boosting Toyota's profits.</p> <p><u>A weak yen can boost Japanese automakers' (eg Toyota) total revenue</u></p> <p>Price of Toyota cars lower in USD → demand is price elastic as there are many close substitutes such as Ford, GM and Chrysler cars which are now relatively more expensive → US consumers switch to cheaper Toyota cars → qty demanded increases by more than proportionately → total export revenue increases.</p> <p>In addition, the TR which is in US dollar, when converted back to yen, would increase TR even further given that the value of the USD dollar has appreciated against the yen.</p> <p>The weak yen also boosted Japanese carmakers' TR in Japan itself as it makes the price of imported cars more expensive in yen. Japanese cars become relatively cheaper. This increases the demand for Japanese cars in Japan and with more cars sold at a given price, TR increases.</p> <p>Therefore, a weak yen increases TR of Japanese carmakers both externally and internally.</p> <p>Evaluation</p> <p>However, the weak yen also increases the price of imported inputs of Japanese automakers. As Japan is a country that has limited resources, it needs to import a lot of raw materials. This increases cost of production and therefore offset the increase in TR which may reduce profits.</p> <p><u>Comment: The effect of weak yen on cost may not be very great due to the Japanese method of production that can offset this increase.</u> Extract 3 says that the Japanese automaker use common components for different car models. As a result they can buy these components in bulk and thus benefit from marketing economies of scale → lower unit cost of production. Given</p>	[8]

that Japanese automakers have higher profits than their American counterparts, these cost savings may be greater than the rise in input costs due to a weaker yen, and so overall, costs are lower.

Synthesis: Overall, weak yen is a more important reason to account for Toyota's higher profits and not falling costs

A weak yen will only have a large impact on a firm's TR if its sales are mainly in the foreign market rather than the domestic market. Given that Toyota exports more than 50% of its cars overseas compared to Nissan and Honda and that all of them use common components and therefore similar costs benefits, Toyota's higher profit margins compared to other Japanese automakers, is more likely due to a weak yen which increases its total revenue by much more.

Other evaluative points

However, the assumption is that US car makers are not changing their prices in response to a weaker yen. This is quite unlikely as the auto industry in the US is an oligopoly dominated by GM, Ford and Chrysler. As such, with the entry of Toyota cars, the major automakers may engage in a price war to maintain its market share. Based on Extract 3, it is mentioned that there is intense competition in the auto industry. If the major automakers were to reduce their prices, the quantity demanded for Toyota cars will increase by less than proportionately and therefore TR will fall.

That said, the ability of US car makers to lower price to compete with Toyota may be limited due to their higher cost of production as a result of labour problems and health care costs. Thus, the weak yen would benefit Toyota.

The higher profits of Toyota could be due to other demand factors. Toyota may have successfully marketed its cars in the US market, changing US consumers' tastes and preferences for Toyota's brand of cars. For example, Toyota could be the first Japanese automaker to sell electric cars in the US. With demand increasing, total revenue increases.

Conclusion

A weak yen benefits a Japanese company the most if it has a bigger proportion of its sales in the external market assuming all other things constant. The higher profit margins of Toyota cars compared to other Japanese automakers is evidence of this although there could be other demand factors that have boosted Toyota's TR in the overseas market.

L1(1-3 m)

Superficial explanation of how a weak yen increase TR

Limited explanation of how profits are increased.

	<p><u>L2(4-6m)</u></p> <p>(i) Revenue + any 1 other factor can go 6/6 ***Links to profits must be evident</p> <p>(ii) Detailed explanation of how weak yen boosts Toyota's TR: 3 m</p> <p>(iii) Explain how EOS helps to lower costs and therefore profits: 2 m</p> <p>(iv) Explain why it has to be a weak yen that boosted Toyota's profits and not the result of lower costs (2m)</p>	
(e)	<p>Discuss the reasons for a government's decision to either regulate or subsidise big firms such as those in the energy and automobile industries.</p> <p>Introduction</p> <p>Government intervenes in the free market to achieve both micro and macro objectives. Given that firms in the auto and energy industries are oligopolies, there is market failure due to market dominance and based on efficiency reasons, governments should regulate them. However, based on the extracts, the response of the government in the UK and US are totally opposite to each other. This is because government intervention is dependent on the state of the economy and the time period as governments would have different priorities.</p> <p><u>Reasons for govt intervening in the automobile industry</u></p> <p>i) Govt prioritise low unemployment over micro economic goal of efficiency and equity during a recession</p> <p><i>Case material : collapse of two-thirds of the US automobile industry would have ramifications that stretched far beyond the industry, with hundreds of thousands of jobs at risk in the supply chain.</i></p> <p>US car industry has lost their CA to Japanese auto makers due to their inefficiencies → American cars relatively more expensive → quote case evidence → consumers switch to cheaper Japanese cars → fall in dd for US made cars → fall in TR → fall in profits → retrenchment of workers → rise in unemployment → spread to other related industries such as those that supply parts and other raw materials to the auto industry → consumers and investors suffer <u>loss of confidence</u> due to falling sales and rising unemployment → fall in C and I → fall in AD → fall in NY → therefore collapse of auto industry has consequences that go beyond the industry. Thus the severity and extensiveness of the problems created by a possible collapse of the auto industry necessitates government intervention to support the auto industry</p> <p><u>How government intervention in the form of subsidies prevents job losses/reduce unemployment</u></p> <p><u>Subsidies</u> → <u>Reduce auto firms cost of production</u> → even though TR falls, with the subsidies → <u>TR can cover TVC</u> → can carry on production →</p>	[10]

reduce the risk of firms' closure and therefore preventing large scale unemployment.

Evaluation:

- Firms in auto industry have not been operating efficiently.

Case material: *"credit crunch exposed an over-expanded and over-leveraged industry"* and that they were not *'fleet footed enough'*.

→ Overexpansion is an indication that firms do not produce at $P=MC$ due to complacency → little attempt to minimize costs of production and produce at the profit maximizing output → Result: protecting them will lead to welfare loss

- However, it is necessary to offer some protection in the short run as the falling demand is not due mainly to the loss of competitiveness but also due to falling income as a result of the recession brought on by the financial crisis. Faced with twin problems of falling demand due to the recession as well as the competition from cheap imports it is necessary for the govt to intervene, otherwise, the recession will deepen and the welfare loss will not be confined to just the auto industry as the multiplier effect of the collapse of the industry will have ramifications on other industries as well. In times of recession, the macro goals would have priority over the micro econ goal as the magnitude of the welfare loss to society cause by unemployment takes is much greater than the welfare loss arising from inefficiency in an industry.
- Moreover, temporary protection with stringent terms and conditions for eligibility to financial support can help the industry to get back on its feet. Extract 4 shows that the intervention was successful and the industry was able to regain its profitability.

- ii) Govt regulate energy companies to reduce their monopoly power so that there is less exploitation of consumers

Case material: *Steep hikes in fuel bills by the big six, who control more than 80% of the market,*

Market structure of energy industry → oligopoly → Six large firms controlling 80% of market → possible that they are colluding and behaving like a monopoly as all of them were increasing prices at the same time ('flurry of price hikes'). Demand for electricity is very price inelastic → no close substitutes → firms therefore have a great deal of market power. Produce at $P > MC$ (Illustrate and explain with diagram) → include concepts like allocative inefficiency, deadweight loss etc

Problem of equity: Lower income consumers spend bigger proportion of income on electricity.

How govt intervention in the form of rules and regulations help to curb monopoly power and protect consumers welfare.

<p>To protect welfare of consumers → introduction of price cap → eg $P=AC$ or $P=MC$ → <u>lower price</u> → reduce monopoly exploitation → increase consumer surplus and welfare.</p> <p><u>Evaluation</u></p> <ul style="list-style-type: none"> • If price is capped at $P=AC$, no incentive for firms to reduce cost or innovate as firms will only make normal profits. • If price is capped at $P=MC$, firm will make losses and if revenue cannot cover variable costs, firms will have to close down. There will be greater welfare loss. <p>Conclusion</p> <p>Both the energy and auto industry are dominated by big firms and inevitably there will be exertion of monopoly power and therefore exploitation of consumers. Therefore government regulation is necessary. But in the US, the auto industry is given support in contrast to regulation of the energy industry in the UK. This is because of the difference in the state of the economy in the US and the UK. With a recession still going on, the risk of excessive exploitation of consumers may be lesser whereas in the case of the energy market, the expanding UK economy could have cause energy firms to be more brazen by raising price excessively. With less macro problems to deal with, the UK would then prioritise micro economic goals more than macro-economic problems which are just the opposite of that of the US. <u>So in short, government regulation is necessary in the case of big firms but whether it should be a priority or not would depend on what other economic problems the economy is facing.</u></p> <p><u>L1 (1-4m)</u></p> <p>Answers confined to just why the govt support the auto industry OR superficial explanation of why govt supports auto industry and regulate the energy industry.</p> <p>Superficial: lack of economic analysis</p> <p><u>L2 (5-7m)</u></p> <p>Thorough and clear explanation, using relevant economic concepts and theoretical framework, in analysing why there is a need for govt intervention and how govt intervention helps to solve the problem</p> <p><u>Evaluative comment (1-3m)</u></p> <p>Evaluation of intervention : 1 m</p> <p>Synthesis of why different approaches: 2-3 m</p> <p>*Idea of priority of goals should be evident to move to (2-3m)</p>

Question 2**The benefits and costs of globalisation****Extract 6: Love imported goods, but hate losing American jobs?**

The United States (US) imported \$2.69 trillion in 2016. That includes \$2.2 trillion in goods and \$502 billion in services. America is the world's second-largest importer. The European Union imports more, at \$2.24 trillion. China is third, importing \$1.4 trillion. Combined, these countries import \$5.8 trillion, or one-third of the world's total imports of \$15.34 trillion.

The largest US import category is capital goods at \$590 billion. Businesses import telecommunication, semiconductors, computers and related equipment. Consumer goods is almost as large, at \$584 billion. Most of this is cell phones, televisions, apparel and footwear. Services is a large and growing category. In 2016, US service imports totalled \$502 billion. More than half of US imports come from five countries: China, Canada, Mexico, Japan and Germany.

US imports more than it exports. That is despite being the third-largest exporter in the world. That creates a US trade deficit of \$502 billion. Even though America exports billions in oil, consumer goods and automotive products, it imports even more of those same categories.

Everything that is imported is obviously not made in the US. For that reason, it creates US unemployment. The biggest change occurred with the growth of imports from China. In 2007, 28 percent of all imports were from China and other low-income countries. This was a dramatic rise from 2000, when this value was only 15 percent. At the same time, the US was losing manufacturing jobs. A study found that in 2000, more than 10 percent of the labour force worked in manufacturing but by 2007, it had dropped to 8.7 percent. Imports create US jobs in transportation, distribution and marketing. However, it is unlikely that these job gains offset the job losses in manufacturing.

Although America can produce all it needs, China, Mexico and other emerging market countries can produce it for less. Their cost of living is lower, which allows them to pay their workers less. That makes them better than American companies at producing what US consumers want. For example, Indian technology companies can pay their workers just \$7,000 a year, much lower than the US minimum wage. In other words, there is a trade-off between plentiful US jobs and low-cost products.

Many people say we should only buy items that are "made in America." That would solve the problem only if everyone were willing to pay higher prices.

Source: The Balance, accessed 19 Apr, 2017

Extract 7: The cost of Brazil's closed economy

Brazil is an unusually closed economy as measured by trade penetration, with exports plus imports equal to just 27.6 per cent of GDP in 2013. Notably, Brazil's trade openness lags far behind its peers among the BRICS (Brazil, Russia, India, China and South Africa) countries, all of which reached trade-to-GDP ratios of at least 50 percent in recent years.

Very few Brazilian firms export and of all Brazilian exporters, a much smaller number of firms make up the overwhelming share of exports. The top one percent of exporting firms generates 59 percent of total exports, while the top 25 percent of firms account for 98 percent of export revenue.

Brazilian exporters also lack dynamism. Brazil has a very low entry rate – very few companies become new exporters. On the flipside, established exporters have a very high survival rate.

Brazil's extraordinary lack of openness and its small number of exporters are closely related to the fact that Brazilian companies are poorly integrated into transnational value chains. This can be observed in the very high share of domestic value added in Brazilian exports, which implies that such exports incorporate few components and intermediate goods imported from other countries. The reasons behind this include precarious logistics and high transaction costs related to international trade, as well as deliberate policy decisions to favour local content over international integration.

Over the past decade, Brazilian companies have also faced serious challenges to competitiveness, such as exchange rate appreciation and defensive trade policies. Brazilian exports have remained mostly "made in Brazil," while many emerging economies today boast an export base that is largely "made in the world."

Brazil's first priority should be to remove local content requirements that keep foreign investment away and hurt local firms in the process. Opening up and moving toward integration into global value chains could produce efficiency gains and help Brazil address its productivity and competitiveness challenges.

Source: World Bank Group, 15 Feb 2015

Extract 8: What is driving Brazil's economic downturn?

Brazil's economic situation has deteriorated significantly in recent years. The economy entered into recession in 2014 and the situation worsened in 2015, with real GDP likely to have declined by 3%, while inflation has remained close to 10%. The downturn of the non-energy commodity price cycle revealed the underlying structural weaknesses in the Brazilian economy.

In the first decade of the century, Brazil benefited from strong demand, particularly from China for some of its key export commodities such as iron ore, soybeans and raw sugar. Supported by positive terms of trade effects, Brazil's annual GDP growth rate averaged 3.1% over this period.

Since the fall in world commodity prices in 2011, these terms of trade effects have reversed. As a result, GDP growth has been consistently lower than predicted, while structural weaknesses underlying the economy have resurfaced. These weaknesses include a burdensome tax system, poor infrastructure, limited competition, the high costs of starting a business and high tariff rates.

Source: ECB Economic Bulletin, Jan 2016

Table 1: Total merchandise trade for selected economies (US\$ million)

		2010	2011	2012	2013	2014	2015
Brazil	Exports	201 915	256 040	242 578	242 034	225 101	191 134
	Imports	191 537	236 964	233 398	250 556	239 152	178 798
China	Exports	1 577 754	1 898 381	2 048 714	2 209 005	2 342 293	2 274 949
	Imports	1 396 247	1 743 484	1 818 405	1 949 990	1 959 233	1 681 951
United States	Exports	1 278 495	1 482 508	1 545 703	1 579 593	1 620 532	1 504 914
	Imports	1 969 184	2 266 024	2 336 524	2 329 060	2 412 547	2 307 946

Source: WTO, World Trade Statistical Review 2016

Table 2: Exchange rates: Units of national currency per US dollar

	2010	2011	2012	2013	2014	2015
Brazilian Real	1.759	1.673	1.953	2.156	2.353	3.327
Chinese Yuan	6.77	6.461	6.312	6.196	6.143	6.227

Source: OECD, accessed Aug 2017

Questions

- (a) Using Table 1, compare the change in China's balance of trade in goods with that of the US between 2010 and 2015. [2]
- (b) Explain how the theory of comparative advantage can be applied to account for the pattern of trade between the US and her trade partners. [3]
- (c) With reference to Extract 6, explain the 'trade-off between plentiful jobs and low-cost products'. [3]
- (d) (i) With reference to Table 2, how does the value of the Brazilian Real in 2015 compare to its value in 2010? [1]
- (ii) How could the difference in the value of the Brazilian Real observed in (d)(i) be explained by the fall in world commodity prices? Explain with the help of a diagram. [3]
- (e) Discuss whether Brazil's defensive trade policies is the key reason for its lack of export competitiveness. [8]
- (f) Assess whether opening up its economy is the best option for the Brazilian government to achieve sustainable economic growth. [10]

[Total: 30]**[End of paper]**

Suggested Answers
Questions

- (a) Using Table 1, compare the change in China's balance of trade in goods with that of the US between 2010 and 2015. [2]

Both China's trade surplus and US' trade deficit rose.

However, China experienced an improvement in her trade surplus but US experienced worsening trade deficit.

or

China's trade surplus increased more significantly (by 226.7%) than the rise in US' trade deficit (by 16.3%)

- (b) Explain how the theory of comparative advantage can be applied to account for the pattern of trade between the US and her trade partners. [3]

The theory of comparative advantage states that even if one country has absolute advantage in the production of both goods in a 2-commodity-2-country model, it will still be mutually beneficial for both countries to specialize in the goods that they can produce at a lower opportunity cost and exchange.

US has natural factor endowment of oil reserves → able to produce one unit of oil at a lower opportunity cost than China → US gives up less of alternative goods such as television → more cost-efficient for US to specialize in production of oil since she can produce cheaper oil compared to China → US exports oil to China

China has factor endowment of large labour supply → able to produce low-end labour-intensive manufactured such as footwear or television at a lower opportunity cost compared to US → since China can produce such goods cheaper, China exports the goods to US → US imports those good she lack comparative advantage in.

- (c) With reference to Extract 6, explain the 'trade-off between plentiful jobs and low-cost products'. [3]

Opening up → specialize based on CA and remove trade barriers such as tariffs → cheaper M and imported inputs → lower cop → lower price of final goods (low-cost products) → reduce dd for local substitutes → less production → fall in derived demand for local workers → rise in unemployment → cheaper goods obtained at the expense of plentiful jobs

Or

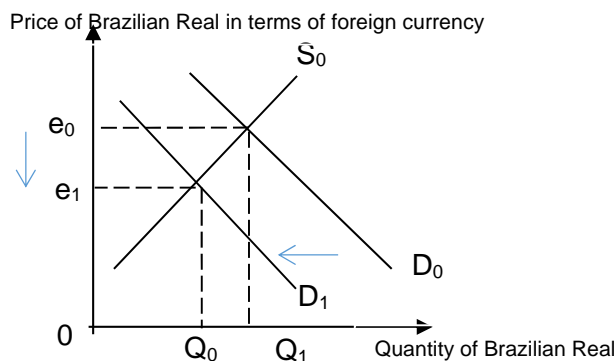
To protect domestic employment → e.g. tariffs on imports → reduce Qdd of imported goods because more expensive → increase demand for local substitutes → greater production in local firms → rise in derived demand for labour → more local job opportunities → fall in unemployment → plentiful jobs locally but imported goods more expensive → higher cop → higher price of final goods (high-cost products) → plentiful jobs obtained at the expense of cheaper goods.

- (d) (i) With reference to Table 2, how does the value of the Brazilian Real in 2015 compare to its value in 2010? [1]

The Real has depreciated.

(ii) How could the difference in the value of the Brazilian Real observed in (d)(i) be explained by the fall in world commodity prices? Explain with the help of a diagram. [3]

- Brazil export commodities such as soybeans, iron ore and raw sugar which are price inelastic in demand due to the nature of the good being a necessity.
- Fall in world commodity prices means fall in prices of soybeans, iron ore and raw sugar exports → given $PED_x < 1$ → Q_{dd} will rise less than proportionately, ceteris paribus → Brazil's X revenue will fall.
- Since X revenue fall, there would have been a fall in demand for Brazilian Real → surplus of Brazilian Real in foreign exchange market exerts downward pressure on exchange rate → depreciation.
- Diagram



(e) Discuss whether Brazil's defensive trade policies is the key reason for its lack of export competitiveness. [8]

Answer outline

Export competitiveness can be in terms of price and quality of exports.

When the country's share of the exports to the rest of the world falls, this could be a sign of declining export competitiveness.

Lack of export competitiveness could be driven by the country's own supply-side capacity, its government policies and external factors. The question is whether Brazilian govt's own trade policies is the key reason for the country's lack of export competitiveness. To determine whether it is the key reason, need to discuss the relative importance of the different reasons for Brazil's lack of competitiveness.

Introduction:

Brazil has remained a relatively closed economy. Brazil's lack of export competitiveness is driven by the country's own supply-side capacity, government policies as well as external factors. One of the government policies mentioned was its defensive trade policies. These refer to trade policies that support or protect domestic firms from foreign competition through various means such as tariffs, quotas, subsidies to domestic firms and rules and regulation. She imposed tariffs and favoured local content as it is stated that 'Brazilian companies have also faced serious challenges to competitiveness' due to defensive trade policies.

Direction: To explain how tariffs cause exports to lose competitiveness and other factors contributing to the country's inability to keep export prices competitive.

Body:

P1: Tariffs imposed by Brazilian government and rules and regulations that favour local content can cause exports to lose competitiveness.

E1: Tariffs → raises cost of production for foreign producers exporting their goods to Brazil → increases the price of Brazil's imports → local firms depending on foreign imported inputs such as steel to produce final goods will face a rise in their cost of production, assuming revenue remains unchanged → lower profits will reduce the supply of the goods → shortage of final goods such as steel-related products will exert upward pressure of price of these goods → higher price of final goods including those exported out → X loses price competitiveness.

P2: Defensive trade policies also reduce competition for local firms which may result in exports losing price competitiveness.

E2:

- Defensive trade policies such as tariffs will raise the price of imported goods → Quantity demanded for imports will fall and consumers will switch over to buy domestic substitutes → local firms are assured of rise in demand to generate revenue and profits → lack of competition in the industry due to protectionist measures → complacency of local firms due to lack of competitive pressure on profits → 'Brazilian exporters also lack dynamism' → does not engage in cost-cutting measures to keep prices low → fall in productivity → higher average cost → higher price of exports → X lacks price competitiveness

P3: However, there are other factors such as poor infrastructural facilities and appreciation of Brazilian Real which contributed to X losing price competitiveness.

E3:

- Poor infrastructural facilities such as absence of efficient transportation system → local firms may face higher cost of production due to greater costs incurred in delivering goods → lower profits will reduce supply of goods → shortage drives up price of X → X lose competitiveness for reasons other than defensive trade policies
- The appreciation of Brazilian Real means that more foreign currency is needed to purchase 1 unit of Brazilian Real → making Brazil's X more expensive in foreign currency → worsening the problem of higher X prices.

Evaluation:

The lack of export competitiveness could have taken place internally due to 'high costs of starting a business' as well as poor infrastructural facilities. The high barriers to trade in some industry may internally have caused complacency to arise which caused prices of goods to be higher than they should be.

Given that Brazil is a developing country, it is highly likely that it may lack the funds to develop the economy sufficiently to support firms to produce efficiently. This could also lead to higher price of exports.

Although it seems like defensive trade policies such as tariffs or quotas may limit supply of goods and cause price of exports to be higher for firms dependent on imported inputs, given that Brazil is not a very open economy to begin with, this means that a large number of local firms depend on local inputs to produce their final goods which are exported out. Hence, the defensive trade policies may not be the main reason for exports losing competitiveness but may worsen the problem of export losing competitiveness due to internal problems.

Mark scheme

	Understanding, Analysis & Application
L2	Answer will provide clear accurate explanation how both defensive trade policies and other factors cause export to lose price competitiveness. Reference must be made to tariffs/quotas

L1	Answers in this level will be descriptive or will contain errors in the explanation of how tariffs or other factors cause X to lose price competitiveness.
	Evaluation
1-2	Assess the extent to which defensive trade policies play a role in causing X to lose price competitiveness

- (f) Assess whether opening up its economy is the best option for the Brazilian government to achieve sustainable economic growth. [10]

Introduction:

Brazil's economy is in a recession with inflation. Its weak economic performance is due to both falling prices of its exports as well as supply side factors such as inefficiency in production. One of the reasons for its economic problems is its closed economy and thus some recommended opening up its economy.

Direction: Aims to explain and evaluate how opening up of economy and other policies can help the country to achieve both actual and potential economic growth to ensure economic growth is achieved without depleting resources for future generation.

Thesis:

Policy 1: Signing FTA

- Opening up via signing FTA → boosts external demand due to specialisation based on CA → rise in (X-M) → rise in income in one sector triggers further rise in induced spending in other sectors → multiple rise in AD → boost EG in SR.
- Opening up e.g. lower trade barriers → increase competition in domestic markets → spurs domestic firms to become more efficient → can increase productivity due to contestable market → can boost X competitiveness → boost economic growth.
- Through FTAs Brazil can have greater access to foreign markets. This means that domestic firms can grow in size and benefit from large scale production further enhancing export competitiveness → rise in (X-M) → boost economic growth in SR.
- Opening up its economy also means that it would allow more foreign investments into the country. Foreign investments not only provide the needed funds for capital formation. It also benefits Brazil when there is transfer of technology and expertise. There could also be a rise in exports when these foreign firms produce goods and services in world markets. Hence there is a rise in AD and so real GDP rises. Furthermore, rise in I can help to increase country's productive capacity of economy → rise in LRAS → rise in potential economic growth → allowing for sustainable economic growth.
- Greater ability to import cheaper resources also means that Brazil will be able to slow down the rate of utilizing her fixed resources → rate of depletion of resources slowed down → allowing for more sustainable growth

Evaluation:

1. Even with signing more FTA → FDI may not increase large extent → poor infrastructure → cop may be high → domestic firms may not be able to penetrate foreign

markets → export earnings may not increase significantly and so economic growth may not be significant.

- The increased competition could be a threat especially for the less efficient firms. As consumers switch demand towards relatively cheaper foreign goods, the demand for Brazil's goods and services fall. This will reduce the revenue and profit of domestic firms. Some will be forced to shut down.
 - Need to improve on infrastructure (structural reform) → build better infrastructure → rise in G and I → AD and LRAS increase → boost actual and potential EG
2. Brazil is dependent on export of primary commodities such as soybeans whose terms of trade is declining due to falling export prices. With such an area of specialisation, the benefits of international trade for Brazil may not be significant unlike other countries that specialise in high value-added industries such as high end manufacturing.
3. However, opening up may tackle the root cause of complacency problem amongst domestic firms which lack 'dynamism' → increased competition will ensure they become more cost-efficient → produce at lower cost to produce more competitive exports so as to sustain market demand → boost export competitiveness further aiding in economic growth.

Policy 2: Supply-side policies such as investment in skills training and increase competition in domestic industries

- Need training of workers policy and reduce power of market dominance to ensure they do not limit competition and subsidising smaller firms to ensure they can match the low price of big firms in the midst of competition → enhances productivity of firms → boost FDI and X → rise in AD and LRAS → boost actual and potential EG

Evaluation:

1. Need funds to invest in human capital. Brazil's government may not have sufficient funds to do so. Furthermore, there may be little incentive for workers or the unemployed to go for training especially when the employment prospects is low or when they do not perceive high returns to re-skilling or re-training.
2. Time lag – longer time for supply-side policies to take effect.
3. Long term effect is positive.

Synthesis and Conclusion

Opening up its economy is certainly one of the ways to spur domestic firms to become more efficient with the increased competition. The increased flow of FDIs also increases the country's productive capacity as well as generate export earnings for the country. In addition, through FTAs, Brazilian firms are able to gain access to international markets, thereby generating export earnings for Brazil to enjoy economic growth. These gains can be realised if Brazilian firms are competitive globally. The extract mentioned that only a few Brazilian firms are able to penetrate the global market because of their lack of competitiveness. As such, I think that whilst opening up its economy is good, more fundamentally, Brazil needs to work at improving its infrastructure, tax system, and its labour force – in order that the country is able to penetrate foreign markets successfully in new export industries. Thus, supply-side policy, though take a long time, is the best option to achieve sustained economic growth.

Mark Scheme

	Understanding, Analysis & Application
L2	Answer will provide a good range of suitable policies and will explain how Brazil can achieve sustainable growth through their application.

	Use of AD/AS analysis to explain how economic growth can occur.
L1	Answers in this level will provide only superficial explanation of policies and will have only limited link to increases in economic growth
	Evaluation
1-3	Examine the analysis and consider whether the policies can achieve both actual and potential growth. Candidates may indicate that effectiveness of policies might differ in extent and possibility of protectionist measures to protect infant industry in order to boost economic growth in future. A conclusion will be provided.