

**ANGLO-CHINESE JUNIOR COLLEGE**  
**2017 JC2 PRELIMINARY EXAMINATIONS**



**ECONOMICS**

**9757/01**

**Higher 2**

14 August 2017

Paper 1: Case Studies

2 hours 15 minutes

Additional materials: Writing paper

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**READ THESE INSTRUCTIONS FIRST**

Write your index number and name 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 diagrams, graphs or rough working.

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

Begin each question on a **fresh** sheet of paper.

Answer **all** questions.

At the end of the examination, fasten your answers for Question 1 and Question 2 **separately** using the cover sheets provided.

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

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This document consists of **7** printed pages.  
Please check that your question paper is complete.

**Question 1****The Market for Higher Education****Table 1: Singapore government's expenditure per student (Singapore dollars)**

	2012	2013	2014	2015
Primary	7396	8549	9123	10,160
University	20,777	21,870	22,181	22,058

Source: Education Statistics Digest 2016, Ministry of Education

**Extract 1: Reduction in subsidies for university education in the UK**

A generation ago, students paid nothing for university education. In 2006, the fee cap for university education was £3,000. In 2012, the fee cap was raised further to £9,000. However, the vice-chancellor of Oxford University had recently expressed that the fee cap of £9,000 is insufficient to reflect the cost of an Oxford degree at £16,000. Even with the raised fee cap, Oxford still faced an annual funding gap of £70 million. Moreover, Sir Christopher Snowden, president of Universities UK, says a £9,000 fee cap is still "not sustainable" for universities.

Universities UK will publish a report on the future of university financing. It will examine how universities will respond to rising birth rates, which means that the number of university places required will grow from 368,000 to 460,000. The cut in the level of government subsidies for universities will lead to students paying higher tuition fees but also eases the large government debt.

However, the government said these changes would put the higher education sector on a more sustainable footing. They believe the £9,000 fee allows universities to deliver high-quality teaching, with many institutions now planning to invest more in improved teaching facilities for students.

Source: BBC, 1 Nov 2013

**Extract 2: Hiring in the digital age: what's next for recruitment?**

Ask any business about its top challenges for 2016 — the odds are good that recruiting and retaining talent are somewhere on that list. Smart companies know that they are only as good as their best workers, and will prioritise seeking out the best candidates for their organisations.

In today's economy, hiring the best candidate is more critical than ever. Companies worry about bad hiring choices because the cost of finding, interviewing, engaging and training a new employee is high. Hence, a new employee is often viewed as an investment and anticipated to be an excellent financial return over time.

As technology continues to evolve, it plays an increasingly important role in the way companies approach the talent search and the hiring process. Candidate information will increasingly get the "big data treatment", where relevant data may be collected from both social media platforms and professional profiling sites such as LinkedIn. All these information will be analysed computationally to reveal candidates' social behavior and professional interactions. Such data will enable recruiters to easily identify the best person for the job. Meanwhile, to find the candidate with the best skills, experiences and ability to match a job,

companies would have to rely on interviews, the references provided by the job candidate and the judgement of the recruiters.

Government intervention in the labour market can also affect the efficiency of recruitment in the labour market. Governments could encourage firms by introducing more stringent screening process such as applicant's employment history, criminal records and loan records. Loan history is a credible signal; it is hard to fake, and presumably, those with good loan records are more likely to make good employees than those who default on their debts.

Source: Business News Daily, Forbes, 11 Jan 2016

### **Extract 3: Singapore government's spending on higher education**

There are compelling reasons to heavily subsidise higher education.

Firstly, there are substantial private returns such as higher employability and wages, as well as positive social returns to higher education in terms of lowering poverty and crime rates. Societies that have better educated populations tend to have lower crime rates, enjoy greater social cohesion and a well-educated labour force that is needed for long-term economic development.

Secondly, there is a case for the government to intervene to ensure that there are equal opportunities. While it is generally feasible for most individuals to fund their own tertiary education through loan schemes, the lower-income group may face credit constraints. Others may have heavy financial responsibilities that compel them to enter the labour market as soon as possible, rather than contemplate further education. Evidence also suggests that the lower-income group tend to underestimate the returns to education, due to a lack of information and poor community role models. To encourage this group to take up higher education, the government provides financial assistance for higher education. There are also student and tuition fee loan schemes provided for the middle-income group at low interest rates.

The Singapore government has always invested heavily in education and will continue to do so in future, with greater emphasis on developing higher education. This requires a careful balancing between strategic considerations, equity, and efficiency. For example, the government has to consider its budget and expenditures in other sectors of the economy. Additionally, the influx of new graduates will make it more difficult for people to get hired in a career field that they desire.

Source: Singapore Budget, 2010

### **Extract 4: UniSIM to be Singapore's sixth autonomous university by next year**

SIM University (UniSIM) will officially become the Republic's sixth autonomous university by next year as the government aims to drive efforts to increase the number of publicly funded university places.

Acting Education Minister (Higher Education and Skills) Ong Ye Kung, said the move would see UniSIM "stand shoulder-to-shoulder" with the other autonomous universities. It will be a university with a strong social sciences bent, preparing students for "socially related careers" in areas such as social work, psychology and early childhood education.

UniSIM is currently a private university but will now be restructured as an autonomous university under the ownership of the Singapore government. Autonomous universities receive

government funding and are subject to government supervision, but still have the flexibility to set their own direction and differentiate their educational offerings.

Singapore now has six autonomous universities, such as National University of Singapore (NUS), Nanyang Technological University (NTU) and UniSIM, allowing students a diverse range of degrees to choose from. However, this could possibly lead to a fall in student enrolment in private universities such as James Cook University, which currently offer similar courses as UniSIM like psychology.

To attract the best students, the universities are striving to be different - in their programmes, tuition fees, student and faculty mix, accommodation options, financial help and overseas opportunities. For instance, NUS and NTU offers more than 50 degrees, with NUS offering exclusive ones such as dentistry and music, while NTU offers niche programmes such as sport science and management.

Source: Today Online, 12 Oct 2016 and The Straits Times, 3 March 2015

### Questions

- (a) With reference to Table 1, compare the government expenditure per student for primary and university education from 2012 to 2015. [2]
- (b) Using demand and supply analysis, explain two reasons for the expected increase in UK's university tuition fees. [3]
- (c) (i) Explain how recruitment in the labour market may not lead to an efficient outcome. [3]
- (ii) Explain how governments and firms can reduce the inefficiencies identified in (c)(i). [4]
- (d) Discuss the view that the Singapore government monopolising the market for higher education is undesirable for consumers. [8]
- (e) Discuss whether the Singapore government should follow the UK in cutting subsidies for university education. [10]

[Total: 30]

**Question 2:****Imbalances in the United Kingdom and China economies****Table 2: Government debt (percentage of GDP)**

Year	China	UK
2010	33.7	76
2011	33.6	81.6
2012	34.3	85.1
2013	37	86.2
2014	39.9	88.1
2015	42.6	89

Source: IMF

**Table 3: GDP Composition breakdown by percentage in 2015**

	China	UK
Consumption Expenditure	37%	65%
Government Expenditure	14%	19%
Gross Capital Formation	45%	17%
Export Revenue	22%	28%
Import Expenditure	18%	29%

Source: World Bank

**Extract 5: Is the game up for China's much emulated growth model?**

From the early 1990s, China adopted an export-led strategy that delivered continuously increasing shares of the world market, fed by relatively low wages and very high rates of investment, enabling massive increases in infrastructure. It led to big increases in inequality and even bigger environmental problems, but the strategy seemed to work – until 2008-09, when exports were hit by the global financial crisis.

Yet even then, China, India and other large emerging markets continued to grow. The talk at the time was that they were already dissociated from the west. In reality, China (and much of developing Asia) had simply shifted to a different engine of growth without abandoning the focus on exports. The Chinese authorities could have generated more domestic demand by stimulating consumption through rising wage shares of national income, but this would have threatened their export-driven model. Instead they put their faith in investments to keep growth rates buoyant.

So the “recovery package” in China essentially encouraged more investment, which was already nearly half of GDP. Provincial governments and public sector enterprises were

encouraged to borrow heavily and invest in infrastructure, construction and more production capacity. To utilise the excess capacity, a real estate and construction boom was instigated, fed by lending from public sector banks. Total debt in China increased fourfold between 2007 and 2014, and the private debt-GDP ratio nearly doubled to over 280%.

All this comes in the midst of an overall slowdown in China's economy. Exports fell by around 8% in 2014. Stimulus measures such as interest rate cuts do not seem to be working. As such, the recent devaluation of the yuan is clearly intended to help revive the economy.

However, it will not really help. Demand from the advanced countries – still the driver of Chinese exports and indirectly of exports of other developing countries – will stay sluggish. Meanwhile, China's slowdown infects other emerging markets across the world as its imports fall even faster than its exports.

A weaker yuan is bad news for export-oriented economies like Singapore, Hong Kong, South Korea and Taiwan as their exports will be more expensive to Chinese buyers. Their exports to other countries will also have to compete against Chinese rivals who have the advantage of a weaker currency.

This is not the end of the emerging markets, but is – or should be – the end of this growth model. Relying only on exports or debt-driven bubbles to deliver rapid growth cannot work for long. For developing countries to truly “emerge”, a more inclusive strategy is essential.

Sources: The Guardian, 23 August 2015 and The Straits Times, 7 January 2016

#### **Extract 6: New economic crash fears as British families run £40 billion deficit.**

British families are on course to spend £40 billion more than they earn this year, fuelling fears that the country's economic growth is based on soaring levels of debt and could easily collapse.

The forecast by the independent Office for Budget Responsibility (OBR) led to warnings that the UK could be heading towards a credit crunch similar to that of 2008 because of unsustainable levels of borrowing and household spending.

Five years ago, UK households were comfortably not in debt, running a surplus of £70 billion as Britons tightened their belts in the wake of the financial crash and put money aside to save.

But the new OBR figures show households are now deeply in debt, as growing economic confidence has led to a national spending spree. There is a real risk that millions of families will face serious hardship if interest rates start to rise.

A Bank of England study found that the average mortgage debt in Britain rose from £83,000 in 2014 to £85,000 this year. Unsecured debt, which includes credit card charges, personal loans, student loans and utility bills, stands at around £8,000 per household.

Source: The Independent, 21 December 2015

**Extract 7: UK trade deficit widens to four-year high.**

UK's trade deficit last year was the widest since the alliance of political parties came to power, dealing a blow to the government's drive to rebalance the economy away from consumer spending.

Forecasting the outlook for this year, economists said exports would come under pressure from a stronger pound and a slowdown in important markets, especially the UK's main trading partner, the Eurozone.

The Eurozone remains unlikely to see much of an acceleration in growth in 2015, particularly given the uncertainty being generated by the prospect of a Greek exit from the single currency area. In addition, economic expansion is expected to continue cooling in China over the medium term, weighing down on export prospects there.

Chris Leslie, the shadow chancellor, said: "Britain needs a serious strategy to help exporters – this means redoubling efforts to boost productivity, tackling infrastructure obstacles, addressing the skills deficit and ensuring innovators can access the funds they need."

Source: The Guardian, 6 February 2015

**Questions**

- (a) Compare the change in government debt levels as a percentage of GDP in China and the UK from 2010 to 2011. [2]
- (b) With reference to Extract 5,
- (i) "A weaker yuan is bad news for export-oriented economies like Singapore"
- Using a supply and demand diagram, explain how the devaluation of the Chinese Yuan may eventually affect the revenue (in SGD) of a Singapore firm that exports to other countries. [4]
- (ii) Explain the possible reasons why neither a cut in interest rates nor a devaluation of currency seem to work for China. [4]
- (c) With reference to Extract 6, explain how households' standard of living in the UK may be affected if UK interest rates were to rise. [2]
- (d) Assess the effectiveness of the UK government's proposed strategy to boost exports. [8]
- (e) Discuss the factors that the UK and China's governments should consider in their macroeconomic decisions to rebalance their economies to achieve sustained economic growth. [10]

[Total: 30]

**ANGLO-CHINESE JUNIOR COLLEGE**  
**2017 JC2 PRELIMINARY EXAMINATIONS**



**ECONOMICS**

**9757/02**

**Higher 2**

18 August 2017

Paper 2: Essay Questions

2 hours 15 minutes

Additional materials: Writing paper

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**READ THESE INSTRUCTIONS FIRST**

Write your index number and name 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 diagrams, graphs or rough working.

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

Begin each question on a **fresh** sheet of paper.

Answer **three** questions in total, of which **one** must be from Section A, **one** from Section B and **one** from **either** Section A or Section B.

At the end of the examination, fasten your answers for **each** question **separately** using the cover sheets provided.

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

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This document consists of **3** printed pages.  
Please check that your question paper is complete.



Answer **three** questions in total.

### Section A

**One or two** of your three chosen questions must be from this section.

- 1 The Philippine government plans to lower income tax rates, slashing it from 32% to the mid-20s.

Source: CNBC, 2017

Explain what is involved in rational decision making for both consumers and producers, and discuss how their decision making in response to the lowered income tax rates will impact different product markets. [25]

- 2 Consumers' demand for a good or service is often distorted by imperfect information. Some examples of such markets are medical services, infant milk powder and home appliances.

(a) Explain how different types of imperfect information can lead to an inefficient allocation of resources. [10]

(b) Discuss whether subsidies should be implemented to achieve an efficient allocation of resources in markets where imperfect information exists. [15]

- 3 In 2001, local banks in Singapore merged to form sizeable banks, in line with the Government's policy of encouraging local banks to merge and consolidate their operations in order to compete internationally. But in 2015, Competition Commission of Singapore (CCS) blocked a healthcare merger in a bid to maintain healthy competition.

Source: The Straits Times, 2014 and 2015

(a) Explain the factors that are likely to influence firms' decision to merge. [10]

(b) Assess the economic justifications for the Competition Commission of Singapore (CCS) to block mergers. [15]

**Section B**

**One or two** of your three chosen questions must be from this section.

- 4** The subcommittee on Energy Resilience and Sustainable Growth proposed that Singapore should price energy to reflect its total cost. This involves exploring various options, including a carbon tax and emissions trading regimes.

Discuss the appropriate policies that the Singapore government can adopt in order to achieve sustainable economic growth. [25]

- 5 (a)** Explain why the Singapore government aims for low rates of inflation. [10]

**(b)** Discuss whether failure to achieve low rates of inflation in Singapore is more likely to be caused by domestic or international factors. [15]

- 6** The “fourth industrial revolution” characterised by artificial intelligence, robotics and Internet of Things (IoT) will see robots manufacture cars and drive them, 3D machines print products and call centres being handled by virtual agents. Singapore’s ageing population is a cause for concern in an increasingly digital and technology-driven economy.

**(a)** Explain the potential benefits and challenges of free trade agreements for an economy. [10]

**(b)** In view of the “fourth industrial revolution”, discuss whether the macroeconomic and trade policies adopted by the Singapore government need to be adjusted to maintain a current account surplus in its balance of payments. [15]



## H2 Economics 9757 Paper 1 Question 1: Suggested Responses

### Question 1: The Market for Higher Education

- (a) With reference to Table 1, compare the government expenditure per student for primary and university education from 2012 to 2015. [2]

- Both government expenditure per student for primary level and university have generally increased from 2012 to 2015. [1]
- Government expenditure per primary school student is always lower than university expenditure per student. [1]

OR

- Both government expenditure per student for primary level and university have generally increased from 2012 to 2014 but for 2015, university expenditure per student has fallen while expenditure per primary school student continued to increase. [1]

- (b) Using demand and supply analysis, explain two reasons for the expected increase in UK's university tuition fees. [3]

*With references to Extract 2,*

- The increase in birth rates in UK → leads to the rise in demand for university education → increase in DD [1]
- Cut in government subsidies for universities leading to higher COP for universities. → Decrease in SS [1]
- A shortage will occur in the market [1] → lead to an increase in price of university education

*1m: DD factor*

*1m: SS factor*

*1m: price mechanism linking to shortage*

*(Diagram is not expected, and no additional marks assigned)*

- (c) (i) Explain how recruitment in the labour market may not lead to an efficient outcome. [3]

- Recruitment in labour market may fail due to imperfect information where asymmetric information occur as one party (potential employer/ candidate) has more information than the other party (potential employer/ recruiter), causing the outcome of adverse selection. [1]
  - It is a situation in which higher-ability candidates are being squeezed out of recruitment because they are unable to effectively demonstrate and contrast themselves from lower-quality candidate. This could be in the form of inability to demonstrate: [1]
    - Candidate's personal traits or characters to potential employers.
    - Candidate's not divulging sufficient and accurate information about their level of competency to take on challenging tasks etc.
- Leading to inefficient outcome in recruitment of labour, such as:
  - Misalignment of the candidate's personal values to companies' values. For instance, the information of a potential candidate who was involved in embezzlement in the previous company may not be accessible to potential employer. The potential employer may thus be unable to accurately assess the integrity and financial management ability of the candidate.
- Thus, resulting in an inefficient outcome where there is over-employing of

unsuitable/ under-qualified candidate (lower-ability) and under-employing of the right 'fit' candidate (higher-ability) for the job by the employers. [1]

2m: Identify and explain the source of mkt failure (imperfect info/ asymmetric info; adverse selection) in relation to recruitment in labour mkt

1m: how recruitment leads to inefficiency in labour mkt

**(ii) Explain how governments and firms can reduce the inefficiencies identified in (c)(i). [4]**

- The use of big data treatment, where firms tap on technology [1] to gather and analyse data/information of candidates so as to gain a more accurate understanding of the candidates (such as having matching values between the potential employee and the firm) → improving the recruitment selection process → reducing the inefficient outcome by ensuring the right 'fit' candidate (higher-ability) are recruited for the job by the firms and reducing the employing of unsuitable/ under-qualified candidate (lower-ability). [1]
- Government could introduce the need for more stringent screening process such as the need for information on applicant's employment history, criminal records and loan records to be taken into account during recruitment process. [1]. This is to enable firms to have a better signal of the candidate's character and commitment → reducing the inefficient outcome by ensuring the right 'fit' candidate (higher-ability) are recruited for the job by the firms and reducing the over-employing of unsuitable/ under-qualified candidate (lower-ability).  
For instance, candidate with good loan records would provide a clearer signal to firms about the candidate's ability to manage funds responsibly in ensuring timely repayment of loans. Information such as loan records can serve as a good signal for firms as they are difficult to fake and candidates of better loan records are thus more likely to be better candidates. [1]

1m for government and 1m for firms - Identify of measure from extracts

1m for government and 1m for firms - explain how the measure can address the inefficiencies; reducing adverse selection.

**(d) Discuss the view that the Singapore government monopolising the market for higher education is undesirable for consumers. [8]**

**Approach:** When the government assumes the sole provider of higher education in Singapore, we could view it as 'monopolization' of the industry. Students are expected to evaluate the desirability of govt monopoly of higher education market based on evidences from extracts (practical and real issues raised).

**Intro:** The Singapore government has always invested heavily in education, and the move to restructure the private UniSIM as an autonomous university owned by the govt (Extract 4) means that the govt now owns six public universities. There is little room left for private universities to thrive, and this can bring undesirable effects for consumers.

**Argument for:** Government monopolizing the higher education market is undesirable for consumers

**1. Criteria of free market entry:**

New private universities may not be able to enter the market. As the govt is

pushing for more places for students in public universities, it would be hard for private universities to enrol more students and be profitable.

- The lack of competition may cause x-inefficiency to develop in the higher education sector where there is a lack of variety and consumers' choice of courses of study are limited to the ones offered by the autonomous universities.
- As a large entity, the government could easily restrict further entry of private universities through restrictions based on size (requirement of security deposits, for example), branding and the range of products (courses) offered.
- While the autonomous universities are free to set their own direction and differentiate their educational offerings, there could be duplication in the market, and result in competition for labour (professors, administrators, etc.) and push the cost of university education up. There is a high possibility that fees for consumers will be raised beyond allocative efficiency level ( $P > MC$ ).

## 2. Opportunity cost criteria:

With the government also subsidizing primary education as well as other levels, it may find itself stretched having to incur high trade-offs and opportunity costs in their use of funds and resources for the various needs in other education levels (Table 1 – the average govt expenditure per primary school student have risen by 27.7% between 2012 & 2015). The rising costs may be passed on to consumers in the form of rising fees or other forms of taxation.

### **Counter-Argument: Government monopolizing the higher education market is desirable for consumers**

**Students would need to highlight some of the objectives of the govt (as a monopoly) in the provision of higher education.**

#### 1. Efficiency criteria: (Outcome of natural monopoly)

- Pricing education closer to  $P=MC$  (allocative efficiency)  
[Students to insert diagram to show MC-pricing]

As a natural monopoly, the cost of offering higher education is lowered due to economies of scale and re-structuring of processes (e.g. joint admissions). → Fees can be kept more affordable for consumers, achieving the govt's goal of having more quality workforce, and offering greater opportunities for the low-income group to participate in higher education. Any cost increases could also be absorbed by the govt without having to charge consumers.

- Producing at an output level closer to allocative efficiency  
Opening of new autonomous university allows government to extend economies of scale to the new university, and be able to accommodate the demand for higher education from low income groups. If left to market forces, it is likely that universities will limit the number of places at profit-maximization output level, where  $MC=MR$  [ref diagram], and charge higher fees which erode consumer surplus.

#### 2. Narrowing the income gap in the long run (Equity criteria)

Enabling the lower income to participate in higher education means that lower income families would have the opportunity to improve their standard of living in the long run

- As mentioned in the Extract 3, this group values higher education lower than what it benefits them, and thus information and encouragement is needed to push them to participate in the market.

**3. Government is able to ensure quality of university education by ensuring standards and evenness of quality**

The wide variety of private university institutions and offerings may result in market saturation and little supervision over the quality of education.

- This could result in several universities duplicating their courses without adding value to the industry.
- Govt monopoly of universities could minimize duplicity of courses across universities. Eg. Extract 4: UniSIM focusing strongly on social services courses while NUS offers dentistry and music.
- Government monopolizing these universities could result in common educational standards across the degrees offered.

**Evaluative Judgement:**

While monopolies often result in deadweight loss to society with their higher prices and lower output, monopolising higher education by the government is desirable based on the evidences in the extracts:

- Education is a merit good, and if left to the market, will be under-produced. Thus, some level of govt intervention, including nationalization of the market may have to be undertaken.
- The lower-income consumers will benefit from the subsidies given to them, achieving a more equitable outcome in society as mentioned in Extract 3 paragraph 2.

<b>Level</b>	<b>Descriptors</b>	<b>Marks</b>
L2	<ul style="list-style-type: none"> <li>• Answer provides a well-developed and balanced view on the desirability of Singapore government monopolizing the higher education market for the consumers.</li> <li>• Answers draw from the data as well as from their knowledge of the Singapore economy.</li> </ul>	4-6
L1	<ul style="list-style-type: none"> <li>• There is a lack of depth of analysis regarding the desirability of Singapore government monopolizing the higher education market for the consumers.</li> <li>• Use of data is sporadic and inconsistent.</li> <li>• Inaccurate use of concepts.</li> </ul>	1-3
E	<ul style="list-style-type: none"> <li>• Judgement is based on analysis that reaches a conclusion based upon consideration of the analysis.</li> </ul>	1-2

**(e) Discuss whether the Singapore government should follow the UK in cutting subsidies for university education. [10]**

**Approach:** Students should consider the reasons for the subsidies made by the Singapore govt. Based on extract 3, subsidies on higher education sector require a careful balancing between strategic considerations, equity, and efficiency. These considerations could differ from what the UK govt based their decision to cut their subsidies on, however. Thus, on evaluation, cutting the subsidies would also entail a review of these considerations in the Singapore context.

**Argument for: Singapore should cut subsidies**

**1 Extent of private returns to higher education, as compared to external benefits:**

Considering that there are private returns of higher employability and wages (Extract 3) to higher education, it may be **possible that current subsidy levels are too high**. If students are to gain from higher education, then they should be

willing to pay a larger proportion of the fees. → **The govt may have overestimated the size of external benefits of higher education.** A cut in subsidies would lower the quantity of places available in universities, and possibly lead to a better allocation of resources.

[Students to insert diagram to illustrate possible over-subsidy of higher education]

- 2 **High subsidies may lead to an overconsumption of higher education places,** which would then lead to an over-supply of graduates. This could mean that the Singapore economy would have to be able to absorb the increase in graduate workers with sufficient capacity and opportunities for graduate-level jobs. If not, it could result in under-employment or, in an economic crisis, high unemployment. Thus to prevent this, a cut in subsidies would reduce the number of university places and reduce the rate of increase in graduates.
- 3 **Improved range of courses by universities:** Reducing subsidies would mean that universities would have to increase their fees for some consumers, or be more strategic in their offering of courses.
  - a. Higher fees are viable as higher income consumers now have better ability to pay and thus do not need to be subsidised at the same level as those with lower income
  - b. Consumers are more knowledgeable about higher education courses, and are more discerning about their choice of university courses to attain their dream career.

Thus, universities can be allocatively more efficient with the reduced subsidies if they offer courses that consumers are willing and able to pay for.
- 4 Similar to the UK economy, the **opportunity cost of subsidizing higher education could be high,** considering that there are other priorities in the economy, for example caring for the aging population, improving public infrastructure on healthcare and transportation, and budgeting for industry transformation programmes.

### **Counter-Argument: Singapore should not cut subsidies**

- 1 **Consideration of efficiency and equity: Extent of market failure caused by positive externalities and the income gap**  
As expressed in extract 3, market failure exists in the market for higher education. Thus, there is a case for government to subsidize.
  - The extent of subsidies so far has generated a large pool of skilled and educated workforce, which has contributed immensely towards the economic progress of the country. This shows that the external benefit are large and continues to be enjoyed by the economy
  - The govt has to also consider the need to support the aspirations of the lower income group through subsidizing their participation in higher education.
- 2 **Strategic consideration of economic progress and competitiveness:**  
Expenditure figures in Table 1 show that the amount spent by the govt per university student is more than double that of expenditure on primary school students.
  - Considering that universities have to deliver high quality education to prepare the people for the future economy, a cut in subsidies could place them in danger of having to cut corners, employ low quality teaching staff and reduce intake of students.
  - There could also be a reduction in the range of courses that students can



choose from. As an education hub, this would make the sector less attractive to investors and potential private institutions.

- Considering the need for labor to continue to be highly skilled for the future economy, subsidizing higher education should continue

### 3 Strategic consideration of fiscal capacity:

From Extract 1, UK govt decided to cut subsidies in order to ease their debt. This might not be the case for the Singapore govt. Unlike the UK govt, the govt of Singapore does not have a large debt and historically have a healthy budget balance through the govt prudent spending. This provides them with a strong ability to continue subsidizing higher education, even at its present level to achieve its social and macroeconomic goals.

### Evaluative judgement

Overall, the level of subsidies that the government gives to universities should be high enough to sustain their quality of education. While it can be argued that the private benefits gained by consumers are high and thus should be privately financed, the economic benefits to the economy of a highly educated and skilled workforce far outweigh the economic costs of the subsidies given. The Singapore government does have that fiscal ability to continue subsidizing higher education.

<b>Level</b>	<b>Descriptors</b>	<b>Marks</b>
L2	<ul style="list-style-type: none"> <li>• Reasons for the subsidies are well analyzed, and placed within the context of the Singapore economy.</li> <li>• Answers draw from the data as well as from their knowledge of the Singapore economy.</li> <li>• Answers have a balanced view regarding whether the Singapore govt should reduce subsidies or continue with the current level.</li> </ul>	5-7
L1	<ul style="list-style-type: none"> <li>• There is a lack of depth of analysis regarding the reasons to implement subsidies in education.</li> <li>• Use of data is sporadic and inconsistent.</li> <li>• Inaccurate use of concepts.</li> </ul>	1-4
E	<ul style="list-style-type: none"> <li>• Judgement is based on analysis that reaches a conclusion based upon the analysis offered.</li> </ul>	1-3

## H2 Economics 9757 Paper 1

**Question 2: Imbalances in the United Kingdom and China economies**  
**Suggested Responses**

(a) Compare the change in government debt levels as a percentage of GDP in China and the UK from 2010 to 2011. [2]

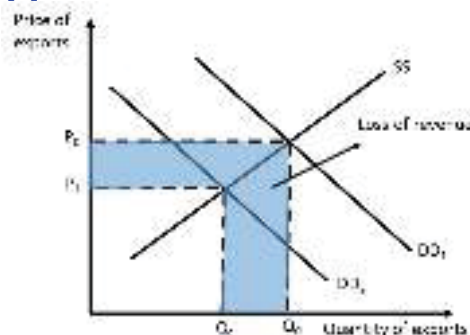
- Direction of change: China's debt levels as % of GDP decreased while UK's increased [1]
- Magnitude of change: UK's change is much larger while China's is an insignificant change. [1]

(b) With reference to Extract 5,

(i) "A weaker yuan is bad news for export-oriented economies like Singapore."

Using a supply and demand diagram, explain how the devaluation of the Chinese Yuan may eventually affect the revenue (in SGD) of a Singapore firm that exports to other countries. [4]

- Singapore goods may be substitute to Chinese goods in other countries [1]
- Devaluation causes Chinese goods to be relatively cheaper in other countries' currency [1]
- Leads to a fall in demand for Singapore's exports. Therefore fall in price, quantity, and total revenue [1]
- Diagram showing shift of demand curve to the left → lower equilibrium price and quantity → lower total revenue [1]



3 marks to explain impact on revenue

1 mark for accurate diagram

(ii) Explain the possible reasons why neither a cut in interest rates nor a devaluation of currency seem to work for China. [4]

Explain why cut in interest rates does not work:

- Interest rate cuts should reduce borrowing costs → stimulate AD
- But ineffective – C was already stimulated through rising wage shares of national income. Further increase in C and I not stimulated by interest rate cuts possibly due to poor confidence in the economy [2]

Explain why devaluation does not work:

- Devaluation of CNY should make Chinese exports cheaper in foreign currency and imports more expensive in CNY → rise in net X → stimulate AD
- But ineffective possibly due to weak demand for China's exports in developed countries as these countries are experiencing slow growth [2]

For answer that explains only how interest rate cuts and devaluation works [1m]  
2 marks each for explaining why the policy does not work

**(c) With reference to Extract 6, explain how households' standard of living in the UK may be affected if UK interest rates were to rise. [2]**

- Rise in interest rate → debt burden rise [1]
- Increase in amount spent to service debt → Purchasing power fall, less ability to consume goods → SOL fall [1]

**(d) Assess the effectiveness of the UK government's proposed strategy to boost exports. [8]**

Analysis of how UK proposed strategy boost exports.

- (Evidence: boosting productivity, addressing skills deficit, tackling infrastructure obstacles)  
→ raise labour productivity (reducing unit labour cost) → improve price competitiveness of UK exports
- (Evidence: innovators access to capital)  
→ financial support for innovation → product innovation → niche marketing / branding / non-pricing strategy → reduce PED of UK exports
- Therefore export revenue will increase

Counterargument:

Possible constraints that could cause UK proposed strategy to be ineffective

- Stronger pound (appreciation) will make UK exports more expensive in foreign currency → price competitiveness due to the lower unit labour production cost may be eroded
- Skills training to raise labour productivity may encounter resistance from both employees and employers. Impact on labour productivity can also be seen only in the LT
- Financial support for Innovation requires long incubation period → unpredictable outcome even in LT
- Given UK's debt increasing to almost 90% of GDP, government may not be able to provide adequate financial support for innovation (sustainability of this strategy is questionable)

Possible Judgement

- Proposed strategy seems to be ineffective in the ST as intended outcomes can only be seen in the LT
- Unintended consequences likely to arise → rendering it ineffective
  - Lack of public support  
Skills training to upgrade labour productivity would only be politically acceptable provided government provides subsidy for such training to both workers (cost of training + loss of income during training) and employers (loss of labour service) → requires heavy government funding.
  - Increased Government debt  
Current high UK government debt made strategy (support for innovation and skills training) difficult to sustain in LT (evidence from Table 3)
  - Retaliatory Trade policies of trading partners  
UK trading partners likely to undertake protectionistic measures or exchange rate policies (depreciation) → erode competitiveness of UK exports
- Possible complementary measures to increase effectiveness of proposed measures: Expenditure reducing measures or depreciation of currency.

<b>L2</b>	<ul style="list-style-type: none"> <li>Well-developed analysis of how UK's proposed strategy could boost exports <u>AND</u> the constraints that will limit its effectiveness. A balanced answer with supporting evidence e.g. govt debt, strength of pound</li> </ul>	<b>4-6</b>
<b>L1</b>	<ul style="list-style-type: none"> <li>Balanced answer but superficial analysis of how strategy works to boost exports and constraints.</li> <li>No / Inadequate evidences cited incidentally.</li> <li>One-sided answer.</li> </ul>	<b>1-3</b>
<b>E</b>	<ul style="list-style-type: none"> <li>Make a reasoned judgement on whether UK strategy to boost exports, is likely to be effective</li> </ul>	<b>1-2</b>

- (e) **Discuss the factors that the UK and China's governments should consider in their macroeconomic decisions to rebalance their economies to achieve sustained economic growth.** [10]

Meaning of sustained economic growth

- refers to actual and potential economic growth
- continued rise in real GDP and productive capacity

Meaning of rebalancing economy

- China switching to reduce reliance on the export sector as engine for growth and instead to focus on strategies to generate investment-led growth.
- UK switching from reliance on domestic consumption to exports to boost growth

Factors that governments should consider in making macroec decision in rebalancing economy for **sustained** economic growth

(1) Constraints:

- Govt financial position  
UK –high govt debt position –difficult to sustain policies to boost exports; policies feasible in SR not LR  
China – lower govt debt – redistributive policies to boost C + subsidy for investment - feasible
- Stage of development  
UK – developed country subject to higher tariffs for her exports to other countries → reduce her export competitiveness
- Size of economy  
China having a large domestic economy (large market and factor endowments) would be able to sustain ec growth with reliance on domestic C
- Information  
Both countries – to identify what, who, how much, how long to subsidise e.g. which UK sector with comparative advantage

(2) Benefits & Costs of UK and China's rebalancing policy

**China**

Benefit:

- rise in C (domestic C) → improve SOL and also rise in AD, GDP
- Firms leveraging on domestic C → less vulnerable to external shocks → more stable revenue and wage income → sustained economic growth, SOL

Costs

- SR – rebalancing – suffer slower ec growth with reduced export growth – opportunity cost – fall in SOL
- Higher C → HH debt...cause the rise in C to be unsustainable → slow down growth in LT.

**UK****Benefit**

- (i) HH debt would be reduced → higher SOL
- (ii) Expansion of markets for UK firms → incentivise UK firms to be more innovative and compete in the global market → improve Trade balance → sustained ec growth
- (iii) Attract FDI – capital inflow / technology → LRAS productive capacity rise → potential ec growth

**Costs**

- (i) govt policies are targeted at reducing C → overall fall in present SOL in SR (although LR SOL may rise) → slow down growth in SR
- (ii) Govt expenditure on export promotion rise → opportunity cost in other sectors of economy → unintended adverse outcome may result
- (iii) reliance on export sector for growth → increase country's vulnerability to external shocks.

*Possible Judgement*

- There will be costs incurred in any rebalancing policies and govt should implement policies to mitigate short term costs of any such policies  
e.g. UK in rebalancing to reduce reliance on C and increased reliance on X, would need to implement measures to reduce her vulnerability to external shocks.
- UK having a large domestic market, could still rely on her domestic market for economic growth. But given the high British household debt, the intended outcome of this strategy may not be seen in the ST..
- In rebalancing economy for sustainable growth, a more feasible strategy is for govt to reduce reliance on **any one** sector of the economy; be it domestic market or export sector.
- Govt should not focus on only one sector for sustainable economic growth. Imbalances in any economy are usually not sustainable in LT although small open economies like Singapore, are inevitably more reliant on export sector to stimulate growth. But measures must be put in place for such open economies, especially those with small domestic markets, to reduce their vulnerability to external shocks

<b>L2</b>	<ul style="list-style-type: none"> <li>• Well-developed analysis of factors that influences governments in their decision to rebalance their economy, taking into account benefits &amp; costs and constraints faced by UK and China</li> <li>• A balanced answer with supporting evidence from both countries e.g.               <ul style="list-style-type: none"> <li>○ UK household debt, China's debt/GDP ratio</li> <li>○ govt debt position for UK and China.</li> </ul> </li> </ul>	<b>5-7</b>
<b>L1</b>	<ul style="list-style-type: none"> <li>• Balanced answer but superficial analysis of factors that influences governments in their decision to rebalance economy.</li> <li>• No / Inadequate evidences cited incidentally.</li> <li>• One-sided answer.</li> </ul>	<b>1-4</b>
<b>E</b>	<ul style="list-style-type: none"> <li>• Make a reasoned judgment on the significance of the various constraints, extent of benefits &amp; costs, in a government's decision to rebalance economy for sustained economic growth.</li> </ul>	<b>1-3</b>

### **ACJC Preliminary Examinations 2017 Paper 2 Question 1**

- 1 The Philippine government plans to lower income tax rates, slashing it from 32% to the mid-20s.

Source: CNBC, 2017

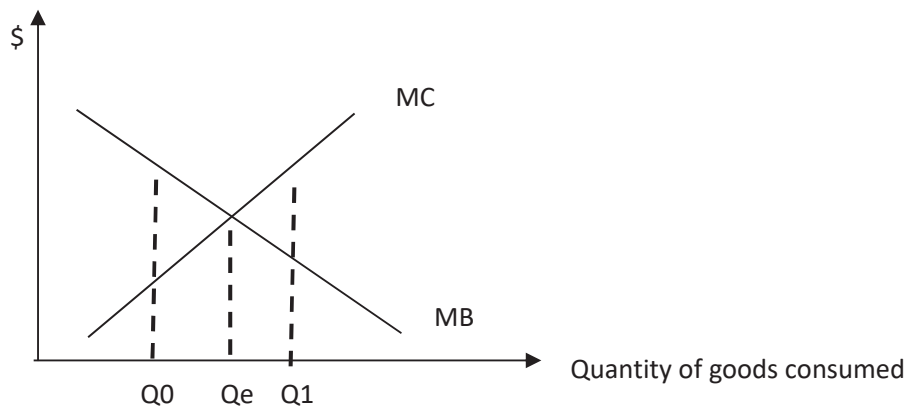
Explain what is involved in rational decision making for both consumers and producers, and discuss how their decision making in response to the lowered income tax rates will impact different product markets. [25]

**Main idea:** explain the process of rational decision making by consumers and producers. Consider how lower income tax rates will affect consumers' (due to less constrained budget) and producers' (due to greater benefits in producing normal goods and less benefits in producing inferior goods) rational decision-making process. Then consider how the changes in consumers' decisions will affect different producers differently, based on YED, supply and PES concepts. Discuss the combined effect on the relevant markets, by looking at the new equilibrium price and quantities.

- Explain what is meant by scarcity - "limited resources and unlimited wants". Limited resources impose constraints to one's decisions. Therefore there is a need to make choices in order to gain the most out of our limited resources.
- Explain process of rational decision making:  $MPB = MPC$ , within constraints. In economics, decision making is based on the marginal unit or additional/ incremental unit. Decision-making on allocation of resources to maximise output is based on marginal cost and marginal benefits. It is worth increasing consumption or production when one more unit consumed/ produced involves an additional benefit exceeding the additional cost because it means there is an increase in net benefit enjoyed.
- Explain consumers and producers' objectives in making rational decisions: to maximize their own utility / profits, in their decisions on what and how much to consume or produce.

#### **Key Point 1: Rational decision making by consumers involves maximising satisfaction, by equating marginal benefit to marginal cost**

- Consumers have limited resources to spend on unlimited goods and services. They are satisfaction/utility maximisers.
- They aim to maximise satisfaction by ensuring that every additional dollar spent on a good or service brings additional benefit (or utility) exceeding additional cost incurred, whereby the cost is the price of the product as well as opportunity cost.
- However, according to the **Law of Diminishing Marginal Utility**, as more and more units of a good or service are consumed, **beyond a certain point of consumption, the additional utility a consumer derives from successive units decreases. As more units of a good are consumed, additional units will provide less additional satisfaction than previous units. Hence, the MB curve is downward sloping.**



- At output  $Q_0$  (or any output below  $Q_e$ ), the MB of increasing consumption is greater than the MC. There will be an increase in net benefits if the consumer increases consumption. Thus, the rational consumer will decide to consume more of such goods.
- Conversely, any consumption beyond  $Q_e$ , (for instance at  $Q_1$ ), the MB of increasing consumption is less than the MC. There will be a decrease in net benefits if the consumer increases consumption. Thus, the rational consumer will decide to reduce his consumption of such goods.
- Consumption thus is at the optimal (equilibrium) level when the additional benefits derived from consumption equals additional cost ( $MC=MB$ ), which occurs at  $Q_e$ .

**Key Point 2: Rational decision making by producers involves maximising profits, by equating marginal benefit (marginal revenue) to marginal cost**

- Producers have limited resources to use in producing unlimited goods and services to consumers
- They aim to maximising profits by ensuring that every additional cost incurred in production is recovered through any additional revenue earned.
- However, the law of diminishing marginal returns states that additional output produced by factors of production will decrease, when variable factors are increasingly added to fixed factors.
- This means the marginal cost of production rises as a firm increases its production.
- Hence, the MC is upward sloping.
- Similar to the rational consumer who equates MB and MC, in order to decide consumption levels, producers equate their MB and MC to decide production levels. Total profit is maximum possible when  $MR=MC$ .
- Producers will increase production as long as MR exceeds MC because there is additional profit to be made from each output produced. But they will decrease production once MR is lower than MC because there are additional losses incurred from each output produced.

**Note: students can draw the MR, MC diagram and make reference to it.**

**Key point 3: consumers and producers must then make these decisions within their constraints.**

This could include the financial constraints that both face when deciding how much to consume or produce or strategies to implement. For the consumer, his income level, wealth and access to funds would limit the number and nature of goods he can afford to consume. For producers, their past profit savings would restrict their ability to conduct R&D or marketing campaigns. Yet, they are also constrained by the

amount and quality of factors of production within the country when trying to hire more factors in order to produce more.

**Transition: ultimately, consumer and producers making rational decisions privately would result in equilibrium in markets. The consumption decisions are represented by a demand curve and production decisions are represented by a supply curve. Changes in certain factors, such as income levels, will lead to consumer and producers reviewing and adjusting decisions. This will result in a new equilibrium achieved in various product markets.**

### **Impact of lowered income tax rates on consumers and producers' decision-making**

**A lowered income tax rate will affect rational decision-making by consumers in terms of how much and what to consume, because they have less constraints on the budget.**

***Note: students can choose to analyse just 1 type of market: normal goods generally, or necessity or luxury goods market (specifically). They should then choose the inferior goods market as the second market, to show a contrast in terms of direction of change in demand (and hence price and quantity)***

#### **NORMAL: necessity and luxury goods**

- 1) The lower income tax will allow consumers to rationally decide to consume more normal goods (rise in demand)**

With the cut in income tax from 32% to mid-20%, consumers' disposable incomes will rise by almost 10%. This will reduce the financial / budget constraints that they face, as they now have a larger amount of incomes to spend on consumer goods. Consumers will thus become more willing and able to consume normal goods, which have a YED value >0. These are goods which experience an increase in demand when incomes rise, and a decrease in demand when incomes fall.

It is calculated by:  $YED = \frac{\% \text{ change in quantity demanded at every price level}}{\% \text{ change in income}}$

In order words,  $YED = \frac{\% \text{ change in demand}}{\% \text{ change in income}}$

In weighing the benefits and costs of consuming a certain good, the consumers' decision is less constrained by his budget and thus will decide to consume more of that good, if its benefits outweigh the costs; or a good that he previously could not afford. This might not be feasible previously, as he was constrained by his lower income.

- (a) Thus, consumers will decide to consume more necessities**, but its increase will be less than proportionate to their 10% increase in disposable incomes. The demand for necessities is positive income inelastic, where the increase in demand due to higher incomes is less than proportionate to the increase in income.

In other words, the demand for necessities will increase, for instance: staple food such as rice, pork and vegetables, which are essential parts of Philippine cuisine, will be consumed. However,



these necessities will experience a less than proportionate increase in demand compared to the rise in the Philippine consumers' disposable incomes, due to the lower income tax rate.

The consumers' decision to increase consumption is especially true for goods and services which are deemed luxurious, which have a positive income elastic demand,  $YED > 1$ .

- (b) **Thus, with the lowered tax rate and less budget constraints, consumers will decide to consume more luxurious goods**, and its increase will be more than proportionate to their 10% increase in disposable incomes. The demand for luxuries is positive income elastic, and so the increase in income will lead to a more than proportionate increase in demand of such goods, i.e. more than 10%.

With this lowered income tax rate, Philippine consumers may decide to purchase more branded handbags like LV or Channel, and also high-end cars such as Rolls Royce and sports car model Ferrari, which have opened outlets in Philippines in recent years.

However, with the higher disposable income, consumers making rational decisions on consumption will be less restrained by their budget. They may decide to consume more high-quality products, switching away from lower quality substitutes that they used to consume.

## INFERIOR GOODS

- 2) **The lower income tax will allow consumers to rationally decide to consume fewer inferior goods (fall in demand)**

Demand for inferior goods has negative income elasticity value, where an increase in income will result in a fall in demand for such products. These are the products which tend to have better quality substitutes exist. When consumers have lower budget constraints, they will have increased ability to consume better quality goods. Hence, rational consumers will decide to switch away from these poorer quality goods and services, hence leading to a fall in demand of inferior goods. In other words, the demand for inferior goods such as imitation handbags, margarine and no-frills in house brand food items will decrease.

### **Impact of lowered income tax rates on producers' decision-making**

***Either 1 explanation – using PES or change in supply is sufficient as part of considering how producers' decision making is impacted in response to the cut in income tax.***

- i) The lower income tax will cause consumers to change their consumption decisions as explained above. These changes in market demand will lead to respective price changes in the market. **This changes the marginal benefit of production, which leads rational producers to review their decision-making in production.** For the producers, when responding to changes in price, they are somewhat constrained by their PES factors and ability to produce. Their current PES value will affect their responsiveness to these price changes in terms of quantity supplied.

- Normal goods: rational producers will decide to increase production  
For producers which produce normal goods, they will experience an upward pressure on price of the goods they produce. Hence, the marginal benefit of producing an additional output increases. Rational producers will thus decide to increase production, and the extent depends on their PES.

If supply is price inelastic, such as rice and other agricultural products, then a rise in price will lead to a less than proportionate increase in quantity supplied. Rational producers will decide to increase production, but to a smaller extent than the rise in price caused by the higher demand.

If supply is price elastic, for manufactured goods such as clothing or electronic devices, then a rise in price will lead to a more than proportionate increase in quantity supplied. Rational producers will decide to increase production of these manufactured goods, to a larger extent than the rise in price, in response to the cut in income tax rates and hence higher demand.

- Inferior goods: rational producers will decide to decrease production  
For producers which produce inferior goods, they will experience a downward pressure on price of the goods they produce. Hence, the marginal benefit of producing an additional output decreases. Rational producers will thus decide to increase production, and the extent depends on their PES.

If supply is price inelastic, then a fall in price will lead to a less than proportionate increase in quantity supplied. Rational producers will decide to decrease production, but to a smaller extent than the fall in price caused by the lower demand.

If supply is price elastic, then a rise in price will lead to a more than proportionate increase in quantity supplied. Rational producers will decide to decrease production of these manufactured goods, to a larger extent than the fall in price, in response to the cut in income tax rates and hence lower demand.

#### Alternatively

ii) The lower income tax could also help producers decide to change their resource allocation, as they may review their decisions on what to produce and how much to produce. This happens as they anticipate consumers' new decisions on what and how much to consume, due to their higher disposable incomes.

- Normal goods: Higher expected profits due to predicted rise in demand after the cut in income tax → increase supply of normal goods
- Inferior goods: Lower expected profits due to predicted fall in demand after the cut in income tax → decrease supply of inferior goods  
In addition, Producers of inferior goods may also possibly divert resources to producing normal goods → further increase in supply of normal goods

**Impact of new / reviewed decisions made by consumers and producers on the market**

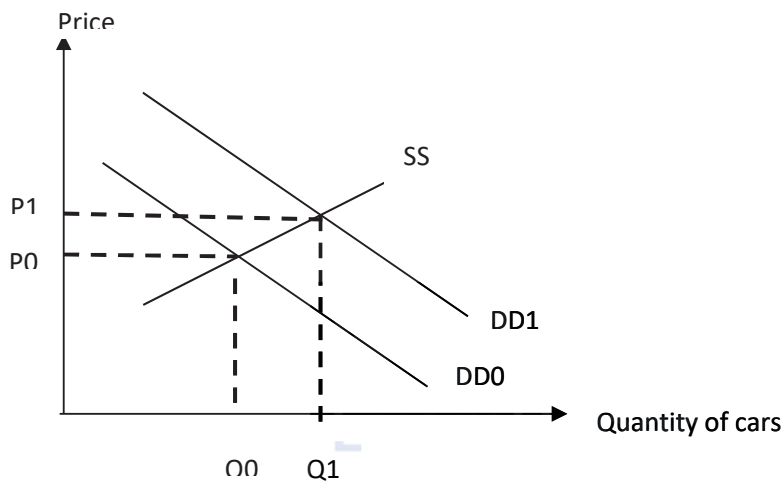
**Note: Students must combine the effects of consumers and producers (whether PES or change in supply) decision-making, analyzing the overall effect on the market price and quantity.**

In markets, rational consumers will make decisions in order to maximize their satisfaction and producers to maximise profits. In perfectly competitive markets, the equilibrium quantity and price will maximize the total consumer and producer surplus. The lowering of the income tax rate in the Philippines changes the consumers' budget constraint, which in turns affects the producers' benefit from production. As a result, there would be new market equilibrium in different markets.

**(A) Markets for Normal goods such as cars**

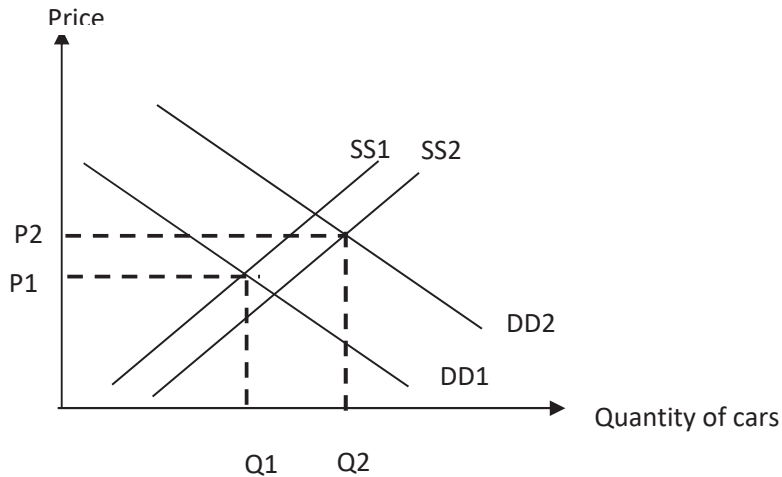
*(Consumers' decision) Rise in demand + PES (producers' decision to increase Qs as response to a rise in price: PES)*

Since cars are a manufactured good which can also be stored in advance, its supply is price elastic. When demand rises from DD0 to DD1, there would be a shortage of cars and hence upward pressure on price in Philippines. Car manufacturers would then decide to increase their production of cars, since the marginal benefit of production has increased. This occurs along the supply curve. As the price of cars increases, quantity demanded decreases along the new demand curve DD1. The market equilibrium then occurs when the shortage is eliminated. The equilibrium price increased from P0 to P1, and output increased from Q0 to Q1. which occurs at price P1 and quantity Q1. Since car producers are able to increase quantity supplied more than proportionate to the increase in price, the car market sees a smaller rise in equilibrium price and a smaller increase in equilibrium quantity, than if supply was price inelastic.



**Alternatively**

*(Consumers' decision) Rise in demand + Rise in supply (Producers' decision in anticipation of higher price and profits): definite increase in Q, indeterminate change in P*



Due to lower budget constraints, demand for cars will increase and is illustrated by the rightward shift of the demand curve from DD1 to DD2. As producers expect higher prices and profits, due to predicted increases in demand, supply will increase from SS1 to SS2. Assuming demand of cars increases more than supply, there is a shortage of cars at original price P1, which thus leads to an upward pressure on price. Consumers will therefore decide to reduce quantity demanded along DD2 and producers increase quantity supplied along SS2. Hence, a new equilibrium in the car market is achieved at higher price P2 and larger quantity Q2.

**(B) Markets for Inferior goods, such as imitation handbags (follow through with same structure as the market for normal goods above)**

*(Consumers' decision) Fall in demand + PES (producers' decision to reduce production as a response to a rise in price: PES)*

If  $PES > 1$ , the rise in demand will be accompanied by a smaller rise in equilibrium price and a larger increase in equilibrium quantity, than if  $PES < 1$ .

**Alternatively**

*(Consumers' decision) Fall in demand + Fall in supply (Producers' decision in anticipation of a rise in incomes and hence fall in demand, which leads to a lower expected price): definite increase in Q, indeterminate change in P*

## Conclusion

- Challenge assumptions involved in rational decision-making:
  1. (Perfect) information. Especially for producers in anticipating how consumers will change their behaviour.
  2. Consumers' Choice: to increase consumption rather than increasing savings or leisure or import (using some ideas of withdrawal), which will limit the extent of change in demand
  3. Rationality: consumers and producers may not make decisions at the margin all the time, or are more swayed by emotions
  
- With higher incomes, consumers may change their definition of "inferior", "necessity" and "luxury" goods. The increased income may cause them to view certain products that were previously "necessity" as "inferior", e.g. public transportation as they are now willing and able to afford private transportation. Furthermore, some consumers may now view certain "luxury" items as "necessity"; as a needed part of their lives. Such examples are gourmet coffee like Starbucks. This has differing effects on the extent of shifts in demand, from what was explained earlier. Hence, price and quantity will change to varying extents.
  
- Challenge assumptions in the market:
  1. Ceteris paribus: government does not change other tax rates (e.g. sales tax to maintain tax revenue), no other factors changed to affect demand/supply (e.g. economic slowdown that led to use of expansionary FP but amidst very poor economic outlook)
  2. Perfect competition market structure: but firms can adopt strategies such as marketing or product differentiation etc. in order to further increase demand for their goods

Level	Knowledge, Analysis, Application	Marks
High L3	<ul style="list-style-type: none"> <li>• Clear and thorough explanation of rational decision-making process by both consumers and producers (use of marginalist principle and rational decision-making framework)</li> <li>• Good and detailed discussion of how the lowered personal income tax rates could affect both consumers and producers' decision-making</li> <li>• Accurate and well-integrated use of YED and PES, as well as supply concepts (considers both consumers and producers)</li> <li>• Answer contains impact on at least 3 different markets (price and quantity)</li> <li>• Arguments and impact on these markets are well-explained and illustrated with diagrams</li> <li>• Answer is well-substantiated by real life examples, especially applied to Philippines</li> </ul>	18-20
Low L3	<ul style="list-style-type: none"> <li>• Clear explanation of rational decision-making process by both consumers and producers (use of marginalist principle and rational decision-making framework), although one of them could be more thorough and well-analyzed</li> <li>• Good and detailed discussion of how the lowered personal income tax rates could affect both consumers and producers, but not applied consistently to idea of decision-making (not addressing question that clearly)</li> <li>• Accurate and well-integrated use of YED and PES <u>OR</u> supply concepts (considers both consumers and producers)</li> <li>• Answer contains impact on at least 2 different markets but done well (indicating the price adjustment process - price and quantity clearly)</li> <li>• Arguments and impact on these markets are explained and illustrated with diagrams, which could have been more analytical</li> <li>• Answer is well-substantiated by real life examples, but may not be the most appropriate ones</li> </ul>	15-17
High L2	<ul style="list-style-type: none"> <li>• Answers both parts of the question but not that well-developed for one of them</li> <li>• Clear explanation of rational decision-making process by both consumers and producers, but both marginalist principle or rational decision-making framework could be better elaborated</li> <li>• Good and detailed discussion of how the lowered personal income tax rates could affect both consumers and producers, but not applied consistently to idea of decision-making (not addressing question very clearly or accurately)</li> <li>• Accurate and appropriate use of YED and PES <u>OR</u> supply concepts (considers both consumers and producers), but could be better incorporated or thought through</li> <li>• Answer contains impact on at least 2 different markets (price and quantity)</li> <li>• Arguments and impact on these markets are explained and illustrated with diagrams, but not so clear or well-analyzed</li> <li>• Answer is substantiated by some real life examples, but not consistently</li> </ul>	12-15
Low L2	<ul style="list-style-type: none"> <li>• Answers both parts of the question but both could have been better developed</li> <li>• Some attempt to explain of rational decision-making process by both consumers and producers, but (a) unclear use of marginalist principle, or (b)</li> </ul>	9-11

	<p>unbalanced – answer focuses on either consumers or producers only, or (c) with some minor conceptual errors</p> <ul style="list-style-type: none"> <li>• Discussion of how the lowered personal income tax rates could affect consumers decision-making but could have been clearer (does not really address the question, but an ordinary demand/supply question)</li> <li>• Some usage of YED (mainly considers consumers only)</li> <li>• Answer contains impact on at least 1 market (price and quantity)</li> <li>• Arguments and impact on these markets are explained and illustrated with diagrams, but not so clear or well-analyzed</li> <li>• Answer is substantiated by few or no examples</li> </ul>	
High L1	<ul style="list-style-type: none"> <li>• Some knowledge of factors in rational decision-making</li> <li>• Some knowledge of how the lowered personal income tax rates could affect consumer demand and thus the different markets</li> <li>• Arguments and impact on markets are explained, perhaps with a diagram which is not well-used</li> <li>• Answer may contain conceptual errors or lack economic analysis and depth</li> <li>• Points made appear incidental and does not address the question on impact of consumers and producers' rational decision-making</li> <li>• Answer is substantiated by few or no examples</li> </ul>	5-8
Low L1	<ul style="list-style-type: none"> <li>• Almost no knowledge of factors in rational decision-making or how the lowered personal income tax rates could affect consumer demand</li> <li>• Mere listing of points without economic analysis and depth</li> <li>• Significant conceptual errors</li> <li>• Points made appear incidental and does not address the question</li> </ul>	1-4

Level	Evaluation	Marks
L3	<ul style="list-style-type: none"> <li>• Candidate is able to challenge assumptions made in the framework or answer</li> <li>• Candidate is able to apply well-explained economic concepts to the question, in order to derive at a balanced conclusion about the different impact on different markets</li> <li>• Candidate is able to think of novel and insightful comments, which are relevant to the question</li> </ul>	4-5
L2	<ul style="list-style-type: none"> <li>• Some attempt to make conclusive judgments about the overall impact on different markets, however not well-substantiated with economic theory or quite generic (not focused to Question)</li> </ul>	2-3
L1	<ul style="list-style-type: none"> <li>• Sweeping comments which are not explained with economic theory</li> </ul>	1

## ACJC Preliminary Examination 2017 Paper 2 Question 2

### Question 2

Consumers' demand for a good or service is often distorted by imperfect information. Some examples of such markets are medical services, infant milk powder and home appliances.

- (a) Explain how different types of imperfect information can lead to an inefficient allocation of resources. [10]
- (b) Discuss whether subsidies should be implemented to achieve an efficient allocation of resources in markets where imperfect information exists. [15]

### Suggested Approach

- (a) **Explain how different types of imperfect information can lead to an inefficient allocation of resources.** [10]

- Students should make use of the examples given in the stem to help them answer the question
  - Students should attempt to classify the types of imperfect information as:
    - Missing or lack of information
    - Inaccurate or persuasive information
    - Asymmetrical information (between doctor and patient, home appliance manufacturer and consumers)
  - With each type of imperfect information, student need to show how consumer's demand will be distorted or under reflected in the market leading to possible under- or over- consumption of some goods or services
- 
- Imperfect information in
    - Medical services
      - Consumers do not have information about the preventive medical services they may need e.g. childhood immunisation, overseas travel vaccinations
      - A doctor have more information than patients in about the number and type of tests and treatments needed for the patient
    - Infant formula milk
      - What basic nutrients and how much of the nutrients are safe for infants
      - Advertisements in infant milk powder market often mislead parents psychologically, into believing that a particular brand is better than another
    - Home appliances
      - Lack of information on energy consumption of home appliance
      - Lack of information on electrical safety level of home appliances
  - Missing or lack of information
    - For preventive childhood immunisations, (eg. Against Tuberculosis, Hep B, measles, mumps and rubella ...) parents do not have access (unable to understand medical literature) to the medical information about the benefits of such immunisation and when best for an infant to have them.
    - Such information may be made available only to those parents who are able and willing to pay for paediatrician fees



- Due to the lack of information, it is likely that the market demand for childhood immunisation is lower than if the information is made available. i.e. DDwithout info will be lower than DDwith info. (draw a simple DD-SS diagram to illustrate)
- Market equilibrium for the consumption of childhood immunisation will be lower than that which will maximise consumers' welfare
- Lack of information in this case has led to an under allocation of resources to the childhood immunisation market
- This argument can also be applied to home appliances in terms of information on energy consumption
  
- Inaccurate or persuasive information
  - Infant milk powder
  - Producers often aggressively advertise their infant milk powder with messages and claims that will appeal to parents, making them believe they are giving the best to their children and these messages and claims are unsubstantiated
  - E.g. 'Premium Formula Milk', 'better immunity'
  - Causes demand for a particular firm's infant milk powder to be higher than it should be i.e. DDperceived to be greater than DDactual hence consumer paying a higher price for infant milk than the benefits the consumer had expected to enjoy (price paid is higher than actual benefits received)
  - Successive persuasive advertisements hence leads to overconsumption of such goods leading to loss of consumers' surplus.
  - Inaccurate persuasive information thus leads to over allocation of resources to the production of those goods
  
- Asymmetric information
  - doctor has more information than patient
    - doctors, to increase their revenues, can prescribe more medication and/or tests than needed for the patient and the patient does not have the expertise to know the better
    - demand for medication and/or tests will be higher than is needed for the patient
    - patients end up consuming more medical services than is necessary for them
    - consumers incurs a loss of consumer welfare as the additional benefit derived from the additional medication / tests will be lower than the additional costs incurred
    - unethical doctors will thus cause an overconsumption of medical services leading to too much resources being allocated to medical services
  - **manufacturers of home appliances knows how safe their products are but consumers do not know**
    - **manufacturers of less safe home appliances will be able to willing to supply their home appliances at a lower price than manufacturers of home appliances that are safer**
    - consumers do not have information about how safe home appliances from the different manufacturers are hence no way to compare to make rational decisions to maximise their satisfaction from their purchase
    - consumers without the information on the level of safety of the product will thus be willing to pay a lower price than they would for home appliances compared to if they had the information

- asymmetric information in this case would lead to the home appliance market adversely selecting less safe home appliances than the safer ones
- the lower price consumers are willing to pay will not attract manufacturers of safer products to enter the market
- in this case, the market would have failed as it would have under allocated resources to the firms producing safer home appliances where consumers would have increased their consumers' surplus by purchasing the safer home appliance

## Mark Scheme

### Question 2a

Level	Description	Mark
3	<ul style="list-style-type: none"> <li>• explain well how imperfect information leads to inefficient allocation of resources</li> <li>• good use of examples for illustration (can use examples beyond what is provided in the stem)</li> <li>• consistent application of economic concepts for analysis of imperfect information</li> <li>• at least 3 types of imperfect information discussed with 2 types well analysed</li> </ul>	8 - 10
2	<ul style="list-style-type: none"> <li>• largely descriptive explanation with some application of economic analysis</li> <li>• weak ability to follow through explanation to explicitly show how resources are inefficiently allocated</li> <li>• at most 2 types of imperfect information are well explained or 3 types with weak explanation</li> <li>• examples may be present but not used effectively</li> </ul>	5 - 7
1	<ul style="list-style-type: none"> <li>• a listing of the different types of imperfect information</li> <li>• examples are stated rather than used for illustration</li> <li>• unexplained statements i.e. lacking in reasoning</li> </ul>	1 - 4

(b) **Discuss whether subsidies should be implemented to achieve an efficient allocation of resources in markets where imperfect information exists.** [15]

- to achieve an efficient allocation of resources in markets where imperfect information exists, government should address the provision and access of accurate information to consumers
- if subsidies is to be provided to consumers, they should be given to lower the cost of obtaining relevant information for them to make rational decision
- in the case of market for medical services where there exists doctor-patient asymmetric information, **government can provide subsidies to basic health screening at government hospitals**
  - the government will provide guidelines about the number of basic tests items that consumers need to take to give them sufficient information about their general health status
  - a subsidy for basic health screening at government hospitals will lower the price and increase the number of consumers taking only the test items that they need and reduce the consumption of unnecessary additional test items (*include a subsidy diagram*)
  - further medical testing may be taken consumers based on their basic health screening reports
  - with subsidies, doctors in the private sector will thus have less power to cause consumers to over consume medical service in this area
  - this will cause less resources to be allocated in the health screening market and more allocated to other areas of medical testing
  - the success of this policy of subsidy is constrained by the integrity of the government and its financial capability
  - the stronger the integrity of the government the more likely consumers will respond to the policy without reservations
- in the case of market for infant milk powder where there is a lack of accurate information, government should subsidise some producers of infant milk powder
  - government can endorse the nutritional value of these producers of infant milk powder to be safe and 'as good as others' for infants
  - subsidies will enable these government endorsed producers to cover their costs of production and costs of advertising (educating the public about optimal nutritional for infants)
  - with a subsidy given to these producers together with government endorsement and public education, the lower price of these infant milk powder will attract some to switch away from the more costly but equally nutritional infant milk powder
  - subsidies in this case, will allow for more resources to be channelled to these government endorsed products where less affluent consumers are able to enjoy increase in consumer's surplus increasing their welfare
  - the government should only subsidise these producers for a short period of time. Once consumers take to these government endorsed infant milk powder and the psychological battle for these products to be as good as the branded ones are won, the subsidy may be removed as these producers will have sufficient consumers to make at least normal profits
- the above examples show how subsidies can achieve efficient allocation of resources in markets with imperfect information, it is also clear that its effectiveness is conditional on government's ability to provide accurate information

- in the case of safety of home appliances where there is a *lack of information*,
  - it may be possible for consumers to pay for safety reports on testing of home appliances by independent firms to enable these consumers to make decisions that will lead to efficient allocation of resources
  - such information may be considered a public good with free ridership problem as the test results of the different home appliances will be spread to many (non-excludable) very quickly and easily
  - there is no incentive for consumers to want to pay for such reports and safety of home appliances is important to all and increases society's welfare
  - providing safety information on home appliances for all is therefore the best policy to achieve efficient allocation of resources in this market
  - instead of subsidising consumers to purchase safety reports, the government should set up a testing and **regulation** body to establish a **minimum safety standard** for home appliances and to provide such information to consumers so consumers may make decisions based on more accurate information
  - in Singapore, all home appliances that passes a minimum safety standard will have a 'SAFETY Mark' indicated on them and those without the indicator (SAFETY Mark) are deemed less safe
  - also applicable for information on energy consumption of home appliances
- in the case of overseas travel vaccinations, government provides **travel vaccination advice** and **public education** to allow consumers to make informed decisions
  - the demand for travel vaccinations will increase with such information being made available thus increasing resources being allocated into this market
  - the increase in demand will also lead to an increase in consumer welfare
- in the case of misleading advertisements, besides setting up stringent **rules and regulations** to prevent misleading advertisements, the government should also step in to provide accurate information through public education (the case of infant milk powder, healthy food)
- with imperfect information in markets, the most appropriate policy should be to ensure accessibility to accurate information hence setting up rules and regulations and public education should be more effective than subsidy in most cases
- decision-making considerations – 'should' or 'should not'
  - financial cost of long term subsidy vs cost of setting up rules, regulation and guidelines and set-up and operating costs of watchdog bodies (monitoring) and institutions to establish and maintain standards
  - relative effectiveness of subsidy vs other measure where subsidy is applicable

## Mark Scheme

### Question 2b

Level	Description	Mark
3	<ul style="list-style-type: none"> <li>well-developed explanation of how measure will achieve efficient allocation of resources (accurate reference to question)</li> <li>good use of examples for illustration (can use examples beyond what is provided in the stem)</li> <li>good economic analysis of policies / measures discussed</li> <li>consistently addressing the question of 'should'</li> <li>well balanced discussion</li> <li>at least 3 well discussed measures including subsidy</li> </ul>	8 - 10
2	<ul style="list-style-type: none"> <li>largely descriptive with some application of economic analysis</li> <li>contrived application of subsidy or textbook explanation of use of subsidy</li> <li>examples may be present but ineffectively applied</li> <li>limited analysis and discussion, mainly explanation of measures</li> <li>discussion may be balanced but lack depth</li> <li>poor reference to question: 'should'</li> <li>at most 2 measures (including subsidy) are well explained or 3 measures but poorly explained</li> </ul>	5 - 7
1	<ul style="list-style-type: none"> <li>a listing of the different measures</li> <li>examples are stated rather than used for illustration</li> <li>largely a display of knowledge without reasoning, mainly unexplained statements</li> </ul>	1 - 4

### Evaluation

Level	Description	Mark
3	<ul style="list-style-type: none"> <li>well considered conclusion that is built upon earlier discussion</li> <li>a well-structured essay that addresses the question</li> <li>judgements made based on economic analysis</li> </ul>	4 - 5
2	<ul style="list-style-type: none"> <li>weak attempt at conclusion to address 'should'</li> <li>some attempt at providing reasons for evaluative statements</li> </ul>	2 - 3
1	<ul style="list-style-type: none"> <li>unsupported statement of judgement</li> </ul>	1

## Question 6

The “fourth industrial revolution” characterised by artificial intelligence, robotics and Internet of Things (IoT) will see robots manufacture cars and drive them, 3D machines print products and call centres being handled by virtual agents. Singapore’s ageing population is a cause for concern in an increasingly digital and technology-driven economy.

- (a) Explain the potential benefits and challenges of free trade agreements for an economy. [10]
- (b) In view of the ‘fourth industrial revolution’, discuss whether the macroeconomic and trade policies adopted by the Singapore government need to be adjusted to maintain a current account surplus in its balance of payments. [15]

### Suggested Approach

- (a) **Explain the potential benefits and challenges of free trade agreements for an economy.** [10]

### Suggested Approach

- As free trade agreements are a double-edged sword, students can explain each potential benefit against its challenge instead of structuring an answer where all benefits are explained first followed by all challenges
- Time is more efficiently used when students adopt a benefit1 – challenge1, benefit2 – challenge2,.. approach
- Students should use countries at different stages of economic development or with different characteristics as examples for illustration

Benefits	Challenges
<p>Consumers enjoy lower prices and more variety of goods</p> <ul style="list-style-type: none"> <li>• Increase consumer surplus and consumer welfare</li> </ul>	<p>Challenge to reduce the potential increase in structural unemployment in industries that produces goods that are substitutes to the cheaper imported goods and prevent market dominance</p> <ul style="list-style-type: none"> <li>• Consumers switch from domestic goods to <b>import substitutes</b></li> <li>• <b>Less efficient firms</b> may make losses and shut down</li> </ul> <p>Potential development of market dominance</p> <ul style="list-style-type: none"> <li>• ‘<b>Dumping</b>’ by trade partners or imports from <b>trade partner with strong comparative advantage</b> may lead to market dominance</li> </ul>
<p>Producers enjoy lower cost of production through cheaper imported of raw materials</p> <ul style="list-style-type: none"> <li>• Increases price competitiveness of exports and domestic substitutes of imported goods</li> <li>• Increase profitability of firms</li> </ul>	

<p>Lower or removal of protectionistic barriers for exports lead to increase in export demand</p> <ul style="list-style-type: none"> <li>• Increase in export demand allows firms to specialise and enjoy economies of scale</li> <li>• Increase the profitability of exporting firms and those firms in the industries that support these firms</li> </ul>	<ul style="list-style-type: none"> <li>• as firms increase their scale of production, there is threat of diseconomies of scale as production exceeds the minimum efficient scale output level</li> <li>• this poses a challenge to firms to overcome the threat or rising unit cost of production to remain price competitive</li> </ul>
<p>economy can specialise and depend on the export of goods with comparative advantage for economic growth, these industries will enjoy higher profits and wages</p>	<p>If an economy has few industries with comparative advantage, they will be vulnerable to the external shocks in these industries</p> <p>Challenge is to be more resilient and less dependent on a few industries for economic growth</p>
<p>Improves the current account balance (increase a current account surplus or decrease a current account deficit) through increase in export revenues</p>	<p>Challenge for an economy is to develop sufficient industries with comparative advantage to ensure its export revenues to be greater than its import expenditure</p>
<p>Lower cost of production arising from FTAs can increase SRAS contributing to lowering or keeping inflation rates low</p>	<p>Depreciation of an economy's currency or inflation in FTA countries can cause increasing import prices</p> <p>Challenge to reduce the effects of rising import costs to raising domestic inflation rates</p>
<p>Increase in export markets with increase in export revenues (such that <math>X - M &gt; 0</math>) increases AD generating increase in employment, economic growth and household incomes which will through the multiplier effect, generate further increase in domestic consumption and national output. Positive economic sentiments will encourage more consumption and investments contributing to further economic growth</p>	<p>As economy expands and operates closer to its productive capacity, the challenge for the economy is to prevent high rates of inflation or keeping inflation rates within their targets (healthy and low inflation rates)</p> <p>Whilst FTAs can bring about economic growth, it can also bring about negative economic shocks for an economy, causing falling AD and eventually recession in the economy</p> <p><b>The challenge for the economy will thus be to ensure it is able to sustain its economic growth.</b></p>

## Mark Scheme

### Question 6a

Level	Description	Mark
3	<ul style="list-style-type: none"><li>• well explained benefits and challenges of FTAs to an economy</li><li>• well-structured answer</li><li>• benefits are well classified: consumers, firms and economy</li><li>• ability to analyse the relationship between benefits and challenges</li><li>• excellent economic analysis</li><li>• well applied to countries at different stages of economic development or with different characteristics</li></ul>	8 - 10
2	<ul style="list-style-type: none"><li>• largely descriptive explanation with some application of economic analysis</li><li>• lacking in organisation of ideas, answer lacks structure</li><li>• may not see relationships between benefits and challenges</li><li>• lacking in application to real world</li></ul>	5 - 7
1	<ul style="list-style-type: none"><li>• a listing of the benefits and challenges</li><li>• poorly or no organisation of ideas</li><li>• unexplained statements i.e. lacking in reasoning</li></ul>	1 - 4



- (b) In view of the ‘fourth industrial revolution’, discuss whether the macroeconomic and trade policies adopted by the Singapore government need to be adjusted to maintain a current account surplus in its balance of payments. [15]

### Suggested Approach

- students need to analyse the question well and take note of the key phrases that defines the question
    - **fourth industrial revolution**: decision of whether to make adjustments to policies should be considered in view of the effects and impact of this revolution
    - policies **adopted** – refers to CURRENT policies
    - **adjusted** – not about implementation of policy but making changes to existing policies hence arguments should be on why CHANGES need to be made or not instead of why the policy should be adopted or not
    - remember the **end point** of your arguments: MAINTAIN a current account surplus
- 
- as an introduction,
    - students may clarify what is the fourth industrial revolution
    - briefly, how this revolution is relevant to (or impact) Singapore
  - effects and impact of fourth revolution on Singapore
    - the fourth industrial revolution basically means more advanced, intelligent and sophisticated technology will be driving the next wave of innovations in both production methods and products
    - impact on production
      - use of robotics in manufacturing and service sectors
        - substituting robots for labour
        - traditional labour intensive manufacturing may now be less labour intensive and more capital intensive with more consistency in productivity in terms of quantity and quality
        - narrows the comparative disadvantage that Singapore has in some light manufacturing industries which Singapore can now develop as an area of comparative advantage or at least is able to support some domestic firms operating in these industries
      - 3D machines print products
        - Eliminates the need for expertise to modify, calibrate and maintain machines to produce precision and customised products for prototyping or for consumption
        - lowers personnel cost of production of such precision and customised products
      - call centres being handled by virtual agents
        - reduction in outsourcing of provision of such services to low wage labour abundant countries
      - Internet of Things (IoT)
        - Eliminates or reduce the need for brick and mortar shop fronts for commerce and retail

- Increases productivity and lowers cost of production for all services that can be conducted online 24/7
  - Allows for just-in-time orders and decreases the need for large inventories hence cutting warehousing costs
  - Efficient logistic solutions lowers cost of production as movements of inputs to finished products are made more efficiently
- Impact on product and service markets
  - Consumer electronic devices with more processing power
  - Robotics and its related markets
  - Data storage and internet related hardware and software
  - Data analysis and software programming services
  - . . .
- Singapore's current account surplus is contributed, to a large extent, by a surplus in the balance of trade in goods
- (Policy targets) To maintain a surplus in the BOP current account, Singapore has to maintain its strong surplus in the balance of trade in goods and improve its balance of trade in services (currently a small deficit) and also to reduce the deficit in the primary balance
- to maintain a strong surplus in the balance of trade in goods
  - Singapore's comparative advantage is determined by the skill level of her labour force and level of technology that the economy can harness and adopt
  - Singapore's comparative advantage lies in its state of technology which means she will lose them as fast as new technologies emerge hence, Singapore needs to be in the forefront of technology for her export goods and services to be relevant and competitive
  - With the fourth industrial revolution, Singapore needs to create new areas of comparative advantage as new products and new production methods have to be adopted for Singapore's exports to remain competitive in the world markets
- Review of trade policies
  - Continue to remain a free port with no protectionistic barriers to trade (except for some areas like the car market) as Singapore is dependent on imports of raw materials and semi-finished goods to value-add to them for re-export
  - If goods from other countries can be imported freely into Singapore, it is likely that our trade partners will reciprocate by allow Singapore's good to have easier access to their markets
  - Continue to sign free trade agreements with countries from different regions to diversify our export markets (from emerging countries to developed countries)
  - As Singapore is small and lacking in resources, she is dependent on imports for consumer goods and inputs for production, hence, it is extremely crucial for her export revenues to be very large to support her import expenditure
  - Ensuring a large external market is therefore a necessity for Singapore with or without the fourth industrial revolution
- Review of macroeconomic policies (should be confined to those that will have an impact on maintaining a BOP current account surplus)
  - To maintain and increase **export competitiveness**
    - Fiscal policy – government expenditure

- Adjustment – divert more or increase expenditures in ICT infrastructure to enable firms to adopt up-to-date technologies to ride the wave of the fourth industrial revolution
  - To lower cost of production and improve price competitiveness of exports
- Fiscal policy – tax concession, subsidies, corporate tax rate
  - Continue to keep corporate tax rate competitively low to encourage foreign direct investments or foreign collaboration and joint ventures with domestic firms to leap frog into the fourth industrial revolution (to benefit from the transfer of knowledge and expertise of successful firms of the ‘new’ industries)
  - Adjustment - Tax concessions to be given to new firms or start-ups in industries that will develop and export products or services that leverage on technologies of the fourth industrial revolution
  - Adjustment – divert more funds for subsidies to encourage
    - adoption of up-to-date technologies
    - innovation to create new or enhance existing products and services (creating new areas of comparative advantage) for the fourth industrial revolution
- monetary policy – continue to be centred on exchange rate as the balance between export prices and import prices in favour of export competitiveness continues to be relevant and necessary to maintain a current account surplus
- create a complementary labour force to **support new export industries**
  - adjustment – increase or higher subsidies for skills training in areas related to the fourth industrial revolution to attract more to move out of current industries to new industries
- to improve **primary income balance** (reduce deficit)
  - Fiscal Policy – government expenditure
    - Adjustment – increase expenditure to set up institutions or departments to provide consultancy and expertise to help local firms go regional i.e set up branches in emerging economies
  - Emerging economics are playing catch-up in the technology race hence it should be profitable for established local technology related firms to venture abroad
  - Target successful local firms in technology related industries or technology based **service industries (banking, accounting . . .)** to venture abroad
  - **Increase in primary income inflow to reduce the deficit** in this account balance
- points of evaluation
  - the speed at which **new technologies and new products** are created makes it difficult for firms and the labour force to catch up, the government will need to put in place aggressive campaigning and adopt moral suasion (soft approach) measures to get firms and individuals to respond, with more urgency, to the government’s policy to realise the intended outcomes of the macroeconomic policies
  - Singapore with her greying population, will find it difficult to increase occupational mobility from the old economy to the new digital and technology-driven economy, more must be done to change the mindset of older workers to want to be reskilled for the fourth industrial revolution

- the fourth industrial revolution should be advantageous to Singapore
  - production will be more capital intensive and Singapore is facing declining growth in her labour force hence increasing labour cost may not be a constrain for firms and export price competitiveness may be enhanced
  - to create comparative advantage in service industries that is digital and technology driven as it requires labour skilled in those areas of which Singapore has control over and has in relative abundance compared to the other resoucrs
- it is difficult for the government to identify which industries should be supported (through subsidies and tax concessions) as it is difficult to predict which new technology or new product will be successful and will remain profitable in the long run to contribute to maintaining a surplus in the trade in goods account

## Mark Scheme

### Question 6b

Level	Description	Mark
<b>3</b>	<ul style="list-style-type: none"> <li>• well-developed explanation of policies and their intended outcomes (policy targets)</li> <li>• good use of examples for illustration</li> <li>• good economic analysis and discussion of policies with judgement</li> <li>• consistently addressing the question: fourth industrial revolution, need for adjustments, BOP current account surplus</li> <li>• well-balanced discussion (with and without need for adjustments)</li> <li>• at least 2 well discussed macroeconomic policies and trade policies</li> </ul>	<b>8 - 10</b>
<b>2</b>	<ul style="list-style-type: none"> <li>• largely descriptive with some application of economic analysis</li> <li>• some discussion of policies but may not follow through with judgement on need for adjustment</li> <li>• discussion may be balanced but lack depth</li> <li>• poor reference to question: fourth industrial revolution and Singapore</li> <li>• at most 2 policies are well explained or 3 policies but poorly explained (a mixture of macro and trade policies or only macro policies)</li> </ul>	<b>5 - 7</b>
<b>1</b>	<ul style="list-style-type: none"> <li>• a listing of the different macro and trade policies</li> <li>• discussion is related to but no reference to question</li> <li>• largely a display of knowledge without reasoning, mainly unexplained statements</li> </ul>	<b>1 - 4</b>

### Evaluation

Level	Description	Mark
<b>3</b>	<ul style="list-style-type: none"> <li>• well considered conclusion that is built upon earlier discussion</li> <li>• a well-structured essay that addresses the question</li> <li>• judgements made based on economic analysis</li> </ul>	<b>4 - 5</b>
<b>2</b>	<ul style="list-style-type: none"> <li>• weak attempt at conclusion to address question</li> <li>• some attempt at providing reasons for evaluative statements</li> </ul>	<b>2 - 3</b>
<b>1</b>	<ul style="list-style-type: none"> <li>• unsupported statement of judgement</li> </ul>	<b>1</b>

### ACJC Preliminary Examination 2017 Paper 2 Question 3

In 2001, local banks in Singapore merged to form sizeable banks, in line with the Government's policy of encouraging local banks to merge and consolidate their operations in order to compete internationally. But in 2015, Competition Commission of Singapore (CCS) blocked a healthcare merger in a bid to maintain healthy competition.

Source: *The Straits Times, 2014 and 2015*

- (a) Explain the factors that are likely to influence firms' decision to merge. [10]
- (b) Assess the economic justifications for the Competition Commission of Singapore (CCS) to block mergers. [15]
- 

#### Question (a)

##### Introduction

- Explain what is merger
- Explain briefly the objective/rationale for merger
- Explain briefly the factors that would influence firms' decision to merge: (1) Benefit – increase TR, (2) Benefit and cost – may increase / decrease average cost of production (due to internal economies of scale & diseconomies of scale), (3) threat of competition and (4) Constraints – receptivity of stakeholders.

##### Body Paragraph 1 – Total Revenue (Benefit)

In deciding whether to merge, firms would consider the **benefits** of merger. The merger could have an **impact on the total revenue** of the firm. If merger increases firms' total revenue, the firms may consider merging.

- Merger allows the firms to acquire existing brand loyalty immediately. Brand loyalty usually takes time to build up and is not immediately available when a firm grows internally.
- Example: merger between POSB and DBS Banks in Singapore (horizontal merger).
- Such merger will increase the market share and market power of the merged bank and the new bank will acquire larger consumer base → increase the DD for banking services → increase the TR of the bank → could increase in profit of the bank.
- Merger could allow the bank to increase TR and hence profit immediately. This could allow the bank to better compete against other international firms.

Therefore the benefits of merger could influence firms' decision to merge. The larger the increase in TR, the more likely for firms to merge.

##### Transition Paragraph

While merger could increase TR and thus profit of firms, firms would also have to take into consideration the impact of merger on their cost. Firms hope that merger could benefit them by increasing their TR and reducing their cost in order to have the highest profit possible. While merger could benefit the firm by reducing the average cost of firms, there is a possibility that such merger may cost the firm by raising their average cost of production too. Thus firms have to weigh the possible benefits and cost of merger in their decision making process.

### Body Paragraph 2 – LRAC (Benefit & Cost)

Besides the benefit of higher total revenue, firms would also be considering other **benefits** of merger as well as possible **cost of merger**. When firms merge and expand production, they could benefit from **lower average cost of production**. However, if the merged firm expands beyond the minimum efficient scale (MES), the merged firm would see a **rise in their average cost of production**, a **cost** firms would have to bear if they choose to merge.

- When firms merge, they could benefit from lower average production cost by better enjoying internal economies of scale.
- Internal Economies of Scale (EOS) refers to cost savings arising from the benefits of increasing the output by expanding the firm's scale of production (size of firm). Internal EOS enables the firm to spread its cost over a larger output, hence lowering its Long Run Average Cost.
- When banks such as DBS and POSB merged → larger consumer base → larger output → the bank could better enjoy **technical EOS**. The merged bank is able to spread the high cost of the latest technology and sophisticated banking systems over large output → reduce the LRAC.
- When firms in the healthcare industry merge → larger consumer base → larger output → the firms can have specialization and division of labour → Workers can do more simple and repetitive jobs in large-scale firms, rather than many different small jobs. There is less time lost in workers switching from one operation to another, if they had to do many different jobs. The increased productivity thus allows the firm to enjoy lower average cost of production.
- While firms could benefit from merger, there is a possibility that merger could lead to higher average cost. When firms merge, they could grow too big beyond the MES → internal diseconomies of scale.
- Merger → the task of coordinating work shared out among several large departments and managing a large staff performing a variety of functions becomes increasingly difficult as the firm expands. As layers of supervision increase, the cost of information and communication grow more than proportionately, hence per average cost of each output starts to increase.

Thus when firms merge, they would have to consider the impact on their average cost. If the merged firm is producing below the MES, the firm would benefit from a lower LRAC. However, if the merged firm expands beyond the MES, the firm would see a higher LRAC, a possible cost the firm may incur.

### Body Paragraph 3 – Weighing current Benefits & Costs

In deciding whether firms should merge, they have to consider the benefits and cost of merger. Firms would consider the relative change in cost and revenue. If the **increase** in TR is more than the **increase** in total cost → it is still profitable to merge and firms are more likely to merge. Otherwise, if the increase in TR is less than the increase in total cost, firms are not likely to merge. Firms would consider the cost and benefit of merger and when there is net benefit to merger, firms would be more likely to merge. At the same time, firms may also need to take into consideration the *time period*. While it may not be profitable to merge in the short term, the merger could be profitable in the long term. Therefore, in their decision making, firms may want to also take into consideration, the time period, in addition to the cost and benefit of merger.

### Body Paragraph 4 – Weighing Future Benefits & Costs

Besides cost and benefit, firms would also consider the threat of competition they might face, especially with increase globalization.

- Growing competition from international banks that are larger and more cost efficient than domestic banks (e.g. DBS and OCBC).
- Example of international banks: Deutsche Bank, Citigroup and HSBC
- Citigroup has an estimated 100 million customers while HSBC has 20 million customers, indicating the substantial revenue these banks are earning.
- Their size enables them to invest billions of dollars in the latest technology and sophisticated systems. As these banks can spread these costs over millions of customers world-wide, they can efficiently deliver a wide-range of customised products at low unit costs, enjoying internal economies of scale.
- Singapore banks on the other hand are smaller and thus may not be able to compete against these global banks.
- Thus mergers between DBS and POSB → larger banks → increase TR and decrease average cost of production → larger profit → carry out innovation to provide better financial services → enable domestic banks to better compete using non-price competition against those large international firms.
- Merger of banks → lower average cost → able to pass on cost saving to consumers → enable domestic banks to better compete using price competition against those large international firms.

Thus when considering merger, firms would also consider the possible threat of competition that might face.

#### Body Paragraph 5 – Possible Constraints

Beside the cost and benefit of merger, firms would also consider the constraints they are facing. Success of the merger may be constrained by the lack of receptivity of the various stakeholders in the company.

- Firms would also consider the receptivity of the various stakeholders in the company. Stakeholders may not be receptive towards merger because some stakeholders fear that a merger would reduce the future value of the firms.
- Example: Merger between Tesco (a supermarket group) and Booker Group (wholesaler) was blocked in the initial stage of discussion because the news of merger was met with strong disapproval from the stakeholders.
- Tesco and Booker Group failed to merge given the lack of receptivity.

Thus firms' decision to merge can be influenced by the constraints they are facing.

#### Body Paragraph 6 – Possible Constraints

There are also other constraints that firms may need to take into account when considering whether to merge. Government regulations could restrict or prevent the firms from merging.

- When two large firms plan to merge, they may be subjected to CCS anti-trust law.
- This is the case where CCS blocked the healthcare merger between Parkway Holdings Ltd and Fortis Healthcare Singapore Pte. Limited. These two firms were under the scrutiny of CCS because the firms are large firms with possibility to become monopoly after merger.

Thus government regulations could be one of the factors that firms might consider when deciding to merge.

#### Conclusion

Firms would have to weigh the possible cost and benefit before making a decision whether to merge. If benefits outweigh the cost, firms will most likely merge to form larger firm. However, while firms may want to merge, they might be restricted by government policy which prohibits some firms from merging.



<b>Knowledge, Understanding, Application &amp; Analysis</b>		
<i>Level</i>	<i>Descriptors</i>	<i>Marks</i>
L3	<ul style="list-style-type: none"> <li>• Develop analysis of the factors that will influence firms' decision to merge.</li> <li>• Answer that address both the benefit and cost of merger.</li> <li>• Answers are well-organized and coherent, with good use of examples.</li> </ul>	8 – 10
L2	<ul style="list-style-type: none"> <li>• Undeveloped explanation of the factors that will influence firms' decision to merge.</li> <li>• Answers are largely supported by economic analysis</li> <li>• Theoretical answer not supported by examples</li> </ul>	5 – 7
L1	<ul style="list-style-type: none"> <li>• Points are largely irrelevant</li> <li>• Descriptive answer lacking economic analysis or contains many conceptual inaccuracies.</li> </ul>	1 – 4

### **Question 3(b)**

**Assess the economic justifications for the Competition Commission of Singapore (CCS) to block mergers.**

**[15]**

#### Introduction

- Competition Commission of Singapore (CCS) is Singapore's competition authority. It is a statutory board under the Ministry of Trade and Industry and is tasked to administer and enforce the Competition Act
- CCS blocked the healthcare merger in a bid to maintain healthy competition in the industry so that firms would be dynamic efficient and less allocative inefficient.
- However, such healthcare merger could also bring about lower price and higher output.

#### Body Paragraph 1

There may be economic justification for CCS to block the merger to increase competition and encourage dynamic efficiency.

- When CCS blocked the merger → more competitive & less likely to be complacent → firms will be incentivised to engage in R&D to find better healthcare services and better treatment procedures for patients. Thus competition could lead to dynamic efficiency.

Thus when CCS block the healthcare merger, firms in the healthcare industry may be dynamic efficient.

#### Transition Paragraph

Producing good quality healthcare services is important for Singapore to remain as one of the top player in the medical tourism. Quality healthcare is one of the key reasons why foreigner consumers are attracted to Singapore for medical treatment. Singapore was ranked the most attractive among seven Asian countries in terms of "patient experience". However, Singapore was also one of the least attractive where costs were concerned. Lower costs and the growing availability of quality care in neighbouring countries such as Malaysia and Indonesia will not only lure medical tourists away from Singapore, but could also

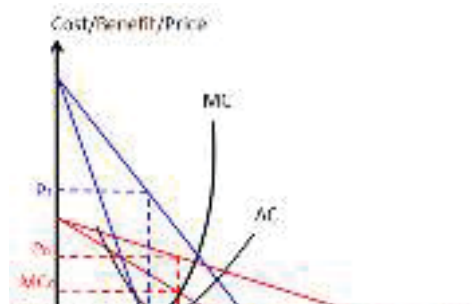
encourage patients to stay home for treatment. And unlike Singapore, the attractiveness of the patient experience in these countries grew, while healthcare costs in these places remained relatively low. Thus there is an urgent need for Singapore to keep the healthcare cost low and that is why CCS blocked the healthcare merger.

### Body Paragraph 2

Competition Commission of Singapore blocked the healthcare merger to ensure higher consumer welfare and to prevent the formation of larger firm that are more allocative inefficient.

- When CCS blocked the merger → at profit maximization  $MC=MR$ , firms would produce at  $Q_0$  and charge a price  $P_0$ .
- However, merger of two healthcare firms → increase market share and reduce the number of competitors in the healthcare industry → as there are fewer competitors who can provide similar healthcare services, the demand for healthcare services become more price inelastic (from  $AR_0$  to  $AR_1$ ) → at profit maximization  $MR=MC$ , the newly merged firm will be able restrict output to  $Q_1$  to charge a higher price,  $P_1$ , for the healthcare services.
- Larger merged firms will produce at a lower output and charge a higher price and → reduce the consumer surplus and hence welfare.
- Thus CCS block the healthcare merger to ensure low price so that healthcare remains affordable for the consumers → more equitable distribution of healthcare services
- At the same time, merged firm would be more allocative inefficient.
- Before merger:  $P_0 > MC_0$  and is allocative inefficient. However, the gap between price and marginal cost is relatively small.
- However, after merger:  $P_1 > MC_1$ . However, the gap between the new price ( $P_1$ ) and new marginal cost ( $MC_1$ ) is even larger → more allocative inefficient.

Thus government blocked the merger to so as to ensure that prices are low, output is higher and firms are less allocative inefficiency.



### Transition Paragraph

Merged firms in the healthcare industry may charge higher price and lower output assuming there is no cost saving. However, there is a possibility that the merged firms may experience substantial EOS and pass on the cost saving to the consumers in the form of lower price and higher output. Thus there may not be any economic justification to block the merger.

### Body Paragraph 3

Merged firms may be able to enjoy EOS and benefit consumers by charging a lower price and producing at a higher output.

- When firms merged → larger consumer base → larger healthcare or banking services → the firm could better enjoy technical EOS. The merged bank is able to spread the high cost of latest technology and sophisticated systems over large output → reduce the AC.
- Hence firms may pass the cost saving to the consumers in the form of lower price.
- Lower price → higher consumer surplus.
- However, should CCS block the merger → smaller output → enjoy a smaller extent of iEOS → higher AC → higher price.

Thus there are benefits to merger and thus there may not be justification for government to block the merger.

### Transition

Merger can be beneficial to the consumers if the merged firm passed on the cost saving to the consumers. And whether the firm would pass on the cost saving to the consumers would depend on the contestability of the healthcare industry. Globalisation has made the market more contestable and if the healthcare merger passed through, the merged firm may pass on the cost saving to the consumers.

### Conclusion

- CCS blocked the healthcare merger in a bid to maintain healthy competition in the industry so that firms would be dynamic efficient and less allocative inefficient.
- However, such healthcare merger could also bring about lower price and higher output for the consumers.
- Whether there is any economic justification for CCS to block the merger, it also depends on the market share of the merged firm. If the market share is large enough so much so that it can be considered a monopoly, then there may be a case for CCS to block the merger.
- While it is argued that globalization could increase the contestability and encourage the merged firms to pass on the cost saving to the consumers, it may take two to three year for a new entrant to be able to enter and compete against the larger merged firms. And during that period, the merged firms may not pass on the cost saving to the consumers.

<b>Knowledge, Understanding, Application and Analysis</b>		
<i>Level</i>	<i>Descriptors</i>	<i>Marks</i>
L3	<ul style="list-style-type: none"><li>• Developed and balanced explanation on whether there is economic justification for CCS to block the healthcare merger. The economic justification is based on allocative efficiency, price and dynamic efficiency.</li><li>• Answer is well supported by economic analysis.</li><li>• Answers are well-organized and coherent, with good use of examples (banking and healthcare).</li><li>• Good use of diagrams to illustrate the answer.</li></ul>	8 – 10
L2	<ul style="list-style-type: none"><li>• Developed but one-sided answer: there is economic justification for CCS to block the merger OR there is no economic justification for CCS to block the merger. Answer is well supported by economic analysis</li><li>• Undeveloped but balanced answer. Answers are supported by</li></ul>	5 – 7

	some economic analysis. <ul style="list-style-type: none"> <li>Limited use of examples.</li> </ul>	
Low L1	<ul style="list-style-type: none"> <li>Points are largely irrelevant</li> <li>Descriptive answer lacking economic analysis or contains many conceptual inaccuracies.</li> </ul>	1 – 4

<b>Evaluation</b>		
<i>Level</i>	<i>Descriptors</i>	<i>Marks</i>
E3	For an answer that arrives at an analytically well- reasoned arguments as to whether CCS should block the merger.	4 – 5
E2	An evaluative assessment based on some analysis. But lacks synthesis to wrap up the arguments.	2 – 3
E1	Arguments evaluated but is superficial & not based on sound evidence and principles	1

**ACJC Preliminary Examination 2017 Paper 2 Question 4**

- 4 The subcommittee on Energy Resilience and Sustainable Growth that Singapore should price energy to reflect its total cost. This involves exploring various options, including a carbon tax and emissions trading regimes.

Economic Strategies Committee, 2011 (Ministry of Finance)

Discuss the appropriate policies that the Singapore government can adopt in order to achieve sustainable economic growth. [25]

**Approach:** Explain the meaning of sustainable economic growth, including how a rapid growth rate might create problems in terms of the environment, inequity and structural unemployment. Discuss appropriate policies for Singapore to achieve sustained economic growth, which can then be sustainable as well through the use of policies that addresses the problems created by rapid growth.

**Sustainable economic growth means a rate of growth which can be maintained without creating other significant economic and environmental problems, especially for future generations.**

- This includes achieving sustained economic growth by increasing the AD alongside the LRAS.
- Given Singapore's nature of a small economy with few natural resources, there is a huge need to pursue sustained growth by relying on the external economy.
- Hence, Singapore pursues demand-management policies that promote our exports; as we are dependent on trade to increase our AD.
- Furthermore, the Singapore government attempts to create a pro-business environment in order to attract Foreign Direct Investments so as to increase our AD and also LRAS.
  
- However, there is a *trade-off* between rapid economic growth today and growth in the future. The rapid growth today may cause certain problems, which might render the high rates of growth unsustainable in the long term.
- Rapid growth today may exhaust resources and create environmental problems for future generations, including the depletion of oil and fish stocks, and global warming.
- **High economic growth would mean an increase in national output and production, which may involve burning of more fossil fuels for energy, or the exhaustion of natural resources (over-mining, deforestation, over-fishing etc.).**
- This can result in greater pollution, and an unsustainable pace of resource depletion.
- Furthermore, a rapid growth rate could result in higher income inequality as well as structural unemployment. These would result in a worsening SOL, material and non-material.
- These undesirable effects arise from the likely uneven growth, as certain sunrise sectors thrive and grow, while other sunset sectors shrink.
- Thus, creating income inequality between workers and entrepreneurs of these sectors.
- This also extends to the skilled and unskilled workers, who will face growing wage differentials.
- Workers from the sunset industries may also find it difficult to find jobs and enter these growing industries due to a mismatch of skills.
- Therefore, achieving sustainable economic growth requires Singapore to enjoy a sustained rate of growth, but also adopt policies to address the significant trade-offs that are created.

**Idea 1: The Singapore government can adopt a range of demand-management policies to achieve a sustained rate of growth in Singapore.**

Demand management policies can be appropriate to maintain a steady rate of actual growth, through increasing the AD. However, it is also very crucial in managing the Singapore economy during certain economic fluctuations or shocks to the economy.

	<b>Exchange rate policy</b>	<b>Fiscal policy</b>	<b>Trade (related)</b>
Longer term (sustaining increase in AD)	<p><u>Modest and gradual appreciation</u></p> <ul style="list-style-type: none"> <li>✓ Price of imported raw materials or secondary products will be lower → reduce COP → increase SRAS → prevents imported-inflation</li> <li>✓ Dampens excessive increase in (X-M) → AD rises at a consistent, moderate rate → Prevents demand-pull inflation that will cause loss of export competitiveness</li> </ul>	<p><u>Prudent and deliberate use of FP</u></p> <ul style="list-style-type: none"> <li>✓ Promote business friendly-environment by: Providing good infrastructure (air, land and sea transport networks, communication networks like Wi-Fi) + Ensuring a skilled and efficient labour force + Stable and reliable government + fiscal policy tools of               <ol style="list-style-type: none"> <li>(1) Tax rebates and credits</li> <li>(2) Maintaining a low corporate tax of 17% (compared to other countries) → increased attractiveness to FDI → higher I → steady increase in AD + capital good accumulation → LRAS rises → Actual and potential growth → sustained growth</li> </ol> </li> <li>✓ Gov expenditure is more targeted, with supply-side effect as well as improving social needs.</li> <li>✓ Example: Improvements in public transport, and developing the heartlands into vibrant homes and communities.</li> </ul>	<p><u>Signing more FTAs</u></p> <ul style="list-style-type: none"> <li>✓ Seek new trade partners or new trading terms through actively signing and renewing FTAs</li> <li>✓ Bilateral agreements and as part of ASEAN</li> <li>✓ Example: the establishing of Asian Economic Community</li> <li>✓ Promoting export competitiveness through supply-side policies (encouraging enterprise, retraining)</li> <li>✓ E.g. IRAS new scheme in 2017: startups and SMES benefit from partial and total tax exemption</li> </ul>
Strengths / Limitations	<ul style="list-style-type: none"> <li>○ Appropriate for Singapore's small and open economy, but may not have the ability to manage domestic shocks like high wage costs.</li> </ul>	<ul style="list-style-type: none"> <li>○ Constrained by size of government budget → but that's why Singapore uses it prudently, more to attract FDI &amp; provide for improving social infrastructure and increasing the SOL of the populace.</li> </ul>	<ul style="list-style-type: none"> <li>○ Highly suitable for a small &amp; trade-reliant country</li> <li>○ But depends on willingness of other countries</li> <li>○ Time-consuming to establish contracts and agreements</li> </ul>

<p>Short term / cyclical policies (countering shocks or economic fluctuations)</p>	<p><u>Zero appreciation stance / slight depreciation</u></p> <ul style="list-style-type: none"> <li>✓ Price of X in foreign currency falls + price of M in local currency rises → stimulate X demand and dampen M → rise in net X → Rise in AD → rise in NY (via multiplier effect, <i>Assume: Marshall-learner condition holds (PED<sub>x</sub> + PED<sub>m</sub>) &gt; 1</i>) → sustained EG despite slowdown</li> <li>✓ <i>Example:</i> SGD estimated to slide to S\$1.39 by end of 2015 after Monetary Authority of Singapore (MAS) reduced the slope of its appreciation against a basket of currencies by a percentage point.</li> </ul>	<p><u>Expansionary FP</u></p> <ul style="list-style-type: none"> <li>✓ Rise in G → rise in AD → increases real NY through multiplier effect → sustained EG, despite economic fluctuations</li> <li>✓ With supply-side effects, e.g. transport, infrastructure → increase in productive capacity → increase in LRAS → achieving potential EG</li> <li>✓ <i>Example:</i> SG gov announced in 2015 that infrastructure spending will grow by 50% to reach S\$30b. Through projects such as development of Changi Airport's new Terminal 5. These reinvestments into SG's infrastructure are to meet Singapore's future economic and social needs.</li> <li>✓ Cut in personal income tax → higher disposable income → encourage C → increase AD → Actual EG</li> <li>✓ Cut in corporate tax → higher after-tax profits → increased funds → increase domestic I and attract FDI → capital goods accumulation and domestic firms benefit from transfer of skills and knowledge from FDIs → increase AD and LRAS → Actual and potential EG → sustained EG</li> </ul>	<p><u>Review export sectors and develop new ones</u></p> <ul style="list-style-type: none"> <li>✓ Seize the opportunity to broaden export sectors so as to reduce vulnerability to industry-specific shocks (e.g. oil crisis)</li> <li>✓ <i>Example:</i> Tax cuts / incentives for promoting and developing identified industries: the Aircraft Leasing Scheme (ALS) aims to encourage companies to develop aircraft leasing capabilities and grow the aircraft leasing industry, by giving such firms a preferential tax rate of 8% in the short run.</li> </ul>
<p>Strengths / Limitations</p>	<ul style="list-style-type: none"> <li>○ Possibility of inflation but low risk, due to general <b>slowdown and thus falling prices of commodities globally</b></li> <li>○ Can lead to speculative attacks and weaker confidence if used for too long</li> </ul>	<ul style="list-style-type: none"> <li>○ Government will need to undertake a budget deficit, but is feasible as they have budget <b>surplus due to prudent use in usual times</b></li> </ul>	<ul style="list-style-type: none"> <li>○ Time-consuming, to restructure economy → needs to be used more proactively and in advance rather than reacting to economic shocks only</li> </ul>

(Note: students can write the trade (related) policy under supply-side policies as well)

Transition: Although the abovementioned demand management policies are able to ensure Singapore can enjoy actual growth, and possibly potential growth through greater investments, they are not so targeted in terms of increasing the SRAS or LRAS to ensure sustainable growth.

**Idea 2: It is also appropriate and necessary for the Singapore government to use a range of supply-management policies to achieve a sustained economic growth.**

**(a) The Singapore government investing directly in R&D to develop new areas of comparative advantage will be appropriate in ensuring long-term export competitiveness to increase AD for sustained growth.**

- **Diversify sectors:** For instance, SG government starts to broaden its key sectors to include high-skilled manufacturing industries such as aviation, aerospace etc. → in LR, able to better mitigate economic shocks and maintain a steady export revenue in order to sustain its EG.
- **Reduce energy reliance:** develop / maintain the existing areas of comparative advantage in less-energy and machine-heavy industries, by focusing more on the services sector rather than manufacturing. These services and skills-based industries, such as medical tourism and the financial services / insurance sectors, which may be less energy-intensive and hence reduces Singapore's pollution levels.
- **Capitalize:** endeavor to develop a comparative advantage in clean energy / green technology sectors.

(Note: idea of the developing C.A. in clean energy / green technology sectors, or retraining to reduce structural unemployment / income inequality can also be explained under policies to address "sustainability" separately)

**(b) Policies to lower cost of production can be appropriate to maintain competitiveness for sustained growth, by increasing SRAS to mitigate inflationary pressures and increase NY.**

- **Grants given to increase productivity:** For instance, EDB grants given for firm-level projects which aim to increase efficiency in terms of labour use, as well as energy and water, through enhancing current operations or adopting of technologies.

Transition: Nonetheless, while these policies together are appropriate and effective in ensuring sustained economic growth, the Singapore government will still require some additional policies to mitigate the harms that rapid economic growth can bring about for sustainable economic growth. The trade-offs created in terms of environmental damage due to production methods, or income inequality and structural unemployment, need to be managed by a separate host of policies.



**Idea 3: Thus, Singapore needs to enact policies in order to mitigate the harms resulting from high and sustained economic growth, in order for growth to be sustainable.** (Aka link policies to reducing the possible harmful effects caused by rapid economic growth.)

### Environment

(Student must explain how these policies can allow Singapore to manage her resources and environment, despite growth and strain on resources / pollution. Not required to draw negative externality diagram. Student can focus on maintaining good water and air quality, as Singapore does not really have much natural resources to manage)

- 1) Pricing energy right: carbon tax
  - Idea: increase cost of using petroleum and products which emit a large amount of carbon
- 2) Emissions trading scheme (tradable permits)
- 3) Legislation for industry standards (cleaner production methods)
- 4) R&D / incentivize use of cleaner energy (solar) and green technology
  - EDB launched SolarNova in 2014, to accelerate solar energy use by promoting demand across government agencies. SolarNova utilizes the solar leasing business model where a private firm will install, own and operate the solar systems and sell electricity to government agencies.

### Limitations

- 1) Singapore faces physical constraints in terms of the type of alternative energy sources it can use:
  - SG's small size: lack of ability to use nuclear or hydro or geothermal power → can mainly explore solar power. May be better to improve energy efficiency and emission standards of existing power plants and machineries.
- 2) Singapore is already adopting cleaner energy sources to fuel electricity demand: limited effectiveness of introducing a carbon tax
  - Moved away from petroleum products such as diesel and fuel oil to more environmentally-friendly fossil fuel alternative: natural gas
  - Petroleum products' share in 2015 has been whittled to 0.7 per cent, down from 23.1 per cent in 2005.
  - Natural gas now makes up 95.5 per cent of Singapore's fuel mix, up from 74.4 per cent in 2005, according to the latest statistics from the Energy Market Authority (EMA)
  - Natural gas emits **about 35 per cent less carbon dioxide than the petroleum-based oil** that Singapore was using, and it does not emit **polluting particulates and sulphur dioxide** into the atmosphere.

### Inequity

(Student must explain how any 1 possible policy will help to reduce income inequality, through lowering the Gini coefficient or reducing inequity by redistributing resources more fairly. Any skills training or upgrading must relate to idea of helping the lower income find higher-paying jobs. This helps to ensure that growth benefits everyone, and thus will not erode incentives to work / cause social unrest etc., which will weaken investor confidence or reduce labour productivity. These may threaten future economic growth.

- 1) Workfare Income Supplement (cash and CPF payouts of up to \$3600 per year to help with expenditure needs and retirement savings of older lower-wage workers and persons with disabilities (PWDs) who work)
- 2) Workfare Training Scheme (e.g. provision of an **Enhanced Grant** provides a 95% course fee subsidy, as well as 95% absentee payroll funding for companies who have sent eligible workers)
- 3) Progressive Wage Model (a clear career pathway for their wages to rise along with training and improvements in productivity and standards, in the industries of landscaping, cleaning and security)
- 4) Progressive taxes: higher tax rates for higher income earners and no/lower tax rates for lower income earners (e.g. 22% for those earning above \$320,000 yearly and 0% for those earning under \$20,000)
- 5) Benefits-in-kind: subsidizing essential merit goods like healthcare, education and public housing, especially for the lower income group (e.g. Community Health Assistance Scheme for visits to GP clinics, Financial assistance schemes in schools)

### **Structural unemployment**

(Student must explain how any 1 possible policy will help to reduce structural unemployment, through equipping the unemployed with relevant skills. This helps to prevent wastage of scarce resources / cause a shrinking of the labour force due to discouragement, which may decrease productivity capacity and hence limit future growth.

- 1) Workforce Development Authority
- 2) SkillsFuture

### **Conclusion**

- Although it is inevitable for some costs and problems created by growth, the Singapore government can also consider how to turn these threats into opportunities, such as through developing alternative energy sources sectors.
- Worthwhile endeavor to develop alternative energy sources sectors, as this has the added benefit of reducing Singapore's vulnerability to shocks in oil prices (and the resulting slowdown in the oil and gas related sectors in recent years)
- With a more turbulent economic climate globally, and slowing growth rate in recent years, it is timely for Singapore to review and enact suitable policies that can help her continue growing in a sustainable way in the next few years.
- The Singapore government needs to balance achieving a certain rate of sustained growth, in order to be able to finance the other policies that mitigate environmental and social problems. The recent years have seen slower growth and hence tax revenue streams are less steady. Yet, the government has increased social spending (e.g. on lower income group) and expenditure in terms of promoting solar energy. Fiscal sustainability would be an important consideration, and impose some constraint on the government's choice of appropriate policies.
- Appropriateness of policies will depend on the type and causes of challenges faced by the Singapore economy, e.g. weak productivity growth and global economic slowdown. Thus, the government must exercise flexibility in deciding on a suitable mix of policies to ensure long term and sustainable economic growth.

Level	Knowledge, Analysis, Application	Marks
High L3	<ul style="list-style-type: none"> <li>• Clear and thorough explanation of sustainable economic growth, where the considerations of potential problems (environmental, inequity and/or structural unemployment) are well-discussed</li> <li>• Balanced and detailed discussion of <u>at least 3</u> macroeconomic policies to increase AD and LRAS</li> <li>• Macroeconomic policies are illustrated by suitable AD/AS diagrams to show both increase in NY and Yf</li> <li>• Answer contains a good discussion of microeconomic policies (carbon tax or emissions trading) in order to manage the environmental impact of economic growth</li> <li>• Answer could also contain policies to reduce inequity and make reference to supply-side policy reducing structural unemployment</li> <li>• Careful and consistent attempt to address the question on “appropriate policy”, “sustainable growth” and “Singapore”</li> <li>• Answer is well-substantiated by real life examples, well-contextualized to Singapore</li> <li>• Student is able to suggest how Singapore can capitalize on green technology / environment-related industries as part of our growth strategy</li> </ul>	18-20
Low L3	<ul style="list-style-type: none"> <li>• Clear explanation of sustainable economic growth, where the considerations of environmental impact and resources are evident but could be clearer</li> <li>• Balanced discussion of <u>at least 3</u> macroeconomic policies to increase AD and LRAS, although some could have been more detailed</li> <li>• Macroeconomic policies are supported by suitable AD/AS diagrams, but perhaps could be used more effectively to illustrate sustainable growth</li> <li>• Answer contains discussion of microeconomic policies (carbon tax or emissions trading) in order to manage the environmental impact of economic growth, but could be more integrated</li> <li>• Some attempt to address the question, but could have been more consistent or contextualized</li> <li>• Answer is well-substantiated by real life examples, but may not be the best examples relating to Singapore</li> </ul>	15-17
High L2	<ul style="list-style-type: none"> <li>• Some attempt to explain sustainable economic growth, but could be clearer or more detailed</li> <li>• Balanced and detailed discussion of <u>at least 2</u> macroeconomic policies to increase AD and LRAS</li> <li>• Answer contains some mention of microeconomic policies (carbon tax or emissions trading) in order to manage the environmental impact of economic growth, but quite brief or abrupt (not really linked to idea of sustainable growth)</li> <li>• Some attempt to address the question, although mainly in the conclusion</li> <li>• Answer is substantiated by some real life examples, but not consistent or well-contextualized to Singapore</li> </ul>	12-15
Low L2	<ul style="list-style-type: none"> <li>• Some attempt to explain sustainable economic growth but may be brief or consist of small conceptual errors</li> <li>• Balanced discussion of <u>at least 2</u> macroeconomic policies to increase AD and LRAS</li> <li>• Macroeconomic policies are illustrated by suitable AD/AS diagrams to show both increase in NY and Yf</li> </ul>	9-11

	<ul style="list-style-type: none"> <li>• Answer does not make reference to microeconomic policies (carbon tax or emissions trading) in order to manage the environmental impact of economic growth: more of a “sustained” growth answer</li> <li>• Poor attempt to apply economic concepts to the question: more of a regurgitation of macroeconomic policies</li> <li>• Answer contains few examples, which are general and not so appropriate for question</li> </ul>	
High L1	<ul style="list-style-type: none"> <li>• Unable to demonstrate an accurate understanding of sustainable growth</li> <li>• Some knowledge of macroeconomic policies to increase AD and LRAS</li> <li>• However, answer may contain conceptual errors about macroeconomic policies or sustainable economic growth or lacks economic analysis and depth</li> <li>• Points made appear incidental and does not address the question</li> </ul>	5-8
Low L1	<ul style="list-style-type: none"> <li>• Unable to demonstrate an accurate understanding of sustainable growth</li> <li>• Almost no knowledge of macroeconomic policies to increase AD and LRAS</li> <li>• Mere listing of points without economic analysis and depth</li> <li>• Significant conceptual errors about macroeconomic policies or sustainable economic growth</li> <li>• Points made appear incidental and does not address the question</li> </ul>	1-4

<b>Level</b>	<b>Evaluation</b>	<b>Marks</b>
L3	<ul style="list-style-type: none"> <li>• Answer shows critically evaluates a range of policies, or provide insightful perspectives on policy options regarding sustainable economic policies.</li> <li>• Able to synthesise economic arguments to arrive at well-reasoned judgements and decisions in a good summative conclusion that is well-applied to Singapore.</li> </ul>	4-5
L2	<ul style="list-style-type: none"> <li>• Answer shows some attempt to evaluate or provide a summative conclusion.</li> <li>• Relevant judgement in relation to question but does not provide sufficient elaboration for judgment or base it on sound analysis.</li> </ul>	2-3
L1	<ul style="list-style-type: none"> <li>• Unsupported evaluation statement or judgment.</li> </ul>	1

## ACJC Preliminary Examination 2017 Paper 2 Question 5

- a) Explain why Singapore government aims for low rates of inflation. [10]  
b) Discuss whether failure to achieve low rates of inflation in Singapore is more likely to be caused by domestic or international factors. [15]
- 

### Question 5(a)

#### Introduction

- Explain the term “low rate of inflation”.
- State the benefits achieving “low rate of inflation”.

#### Body Paragraph 1

Singapore government aims for low rate of inflation to reduce redistributive effects on households and lenders. This will protect certain groups that will be worse off during high inflation as inflation has a regressive effect on lower and fixed-income families.

- Low inflation ensures that workers with weak or without trade unions could maintain their purchasing power. These workers may face difficulty pressing for higher wage to compensate for the price rises compare to workers in unions with strong bargaining power. Thus when there is low inflation, the purchasing power of this group of workers could be maintained at their given wages.
- Furthermore low inflation prevents lenders from losing out to borrowers. Inflation could reduce the real value of the debt such that when the debts are repaid, the real value of the debt will be less than that prevailing when the loans were made. Therefore low inflation is essential so that the real value of the debt is higher than that prevailing when the loans were made.

Hence, low inflation helps to reduce redistributive effects on households and lenders.

#### Body Paragraph 2

Singapore government aims for low inflation rate as it ensures high SOL in the country.

- Low inflation protects consumers, savers and lower income families.
- Low rates of inflation ensure the purchasing power of the consumers, especially consumers with fixed wages and fixed interest deposits.
- The low inflation ensures that all income recipients in this group will have high real income → high purchasing power → high consumption of goods and services → high SOL.
- This is because the nominal income they receive remains the same, but the cost of goods and services has risen slowly, ensuring their purchasing power.

Thus low inflation helps to ensure that all income recipients maintain their high standard of living.

#### Body Paragraph 3

Low rates of inflation are desirable as it encourages economic growth and reduce unemployment.

- A low rate of inflation indicates an increase in AD and hence reduce unemployment and increase NY → suggests that Singapore economy is experiencing economic growth
- This creates confidence in the economy and encourages firms to increase investment and attract FDI.
- Low inflation in Singapore also indicates that prices of input and wages of workers remain low, making Singapore an attractive place for investment.

- The low inflation rates is especially important for Singapore as it ensures that Singapore's exports remain competitive in the global market, given that Singapore is heavily dependent on export for economic growth.
- Low rates of inflation indicate that Singapore's export remains competitive in the global market → increase X
- Low inflation indicates that general price level in Singapore increases at a slow rate. This suggests that prices of goods and services produced in Singapore remains price competitive when exported to other countries → increase in X
- Increase in X and I → increase in AD → increase in NY and reduce cyclical unemployment. Thus Singapore government aims for low inflation as it ensures economic growth and reduce unemployment.

#### Body Paragraph 4

Singapore government aims for low rate of inflation as it ensures that Singapore has a healthy BOP.

- Low inflation → ensure export competitiveness → increase export revenue → increase inflow into the BOT → improves BOP
- At the same time, low inflation attracts investment into the country → increase inflow into the capital and financial account → improves the BOP

Thus low rates of inflation help to ensure healthy BOP in Singapore.

#### Conclusion

Singapore government aims for low rate of inflation because it has desirable impact on the households and the country. A low rate of inflation could reduce redistributive effectiveness of inflation, ensure high SOL and helps to ensure high EG, low unemployment and healthy BOP in Singapore.

<b>Knowledge, Understanding, Application &amp; Analysis</b>		
<i>Level</i>	<i>Descriptors</i>	<i>Marks</i>
L3	<ul style="list-style-type: none"> <li>• Develop analysis of the benefits of low inflation.</li> <li>• Answers are well-organized and coherent, contextualize to the context of Singapore.</li> </ul>	8 – 10
L2	<ul style="list-style-type: none"> <li>• Undeveloped explanation of the benefits of low inflation.</li> <li>• Answers are supported by some economic analysis</li> <li>• Theoretical answer not supported by examples</li> </ul>	5 – 7
L1	<ul style="list-style-type: none"> <li>• Points are largely irrelevant</li> <li>• Descriptive answer lacking economic analysis or contains many conceptual inaccuracies.</li> </ul>	1 – 4

#### Question 5(b)

##### Introduction

- Explain the various types of inflation
- Identify the possible domestic and international factors

##### Body Paragraph 1(international factor – increase in export revenue)

Failure to achieve low rates of inflation is likely due to international factors rather than domestic factors given the **nature of Singapore economy**. Being an economy with small domestic

economy and reliance on export for economic growth, Singapore is likely to face DD-pull inflation due to rising export.

- Singapore has a small domestic market and depends heavily on export for economic growth.
- Her export is 300% of its GDP while other components, domestic consumption, government expenditure and investments each constitute less than 50% of its GDP.
- Thus given the nature of Singapore's economy, Singapore is likely to face DD-pull inflation due to rising X.
- Prior to 2008 Global Financial crisis, Singapore's major trading partners USA, China and EU were experiencing strong economic growth → higher income per capita and higher disposable income → higher purchasing power → likely to see an increase in DD for goods and services produced by Singapore.
- Economic growth and growth in affluence in countries like China and Indonesia sees an increase in tourist arrivals in Singapore → increase Singapore's X. The number of Chinese tourists visiting Singapore triple from 2010 to 2017.
- Increase in X → increase in AD against a rigid AS → increase in GPL and hence DD-pull inflation → failure to achieve low rates of inflation
- A rise in consumption and investment is not likely to have significant impact on AD as the components constitute a smaller proportion (less than 50%) of the GDP.

Hence failure to achieve low rates of inflation in Singapore is likely due to international factors rather than domestic factors.

### Transition

Besides being a small and open economy that depends on trade for economic growth, Singapore also relies on import for survival. Singapore is a small country with limited resources and thus has to rely on import of basic necessities such as water and food for survival. Not only that, Singapore also imports raw material and semi-finish goods so that Singapore could value-add to the products and re-export to other countries. The nature of Singapore economy means that Singapore would also be vulnerable to imported inflation.

### Body Paragraph 2 (international factor – increase in prices of imports)

Given the **nature of Singapore economy**, failure to achieve low rates of inflation is likely due to international factors rather than domestic factors.

- Singapore has limited resources and imports most basic necessities. An increase in prices of goods imported into Singapore → imported inflation
- In addition to basic necessities, Singapore also imports raw materials and factors input such as crude oil. Oil refinery is a major sector in Singapore and Singapore imports crude oil and refines it for **re-export**.
- Increase in oil prices or higher prices of import such as raw material → increase the price of import → increase COP as oil is an input for production → SRAS shifts up → inflation.
- Hence failure to achieve low rates of inflation in Singapore is likely due to international factors.

### Transition

International factors such as increase in export revenue and rise in import prices played a large role in pushing up the general price level in Singapore. Given Singapore dependence on X and M, international factors seems to be a stronger contributing factor to high inflation. This also explains why Singapore uses exchange rate policy to manage her economy rather than interest rate policy. However, in the recent years, Singapore government finds that exchange rate policy has difficulty managing inflation in the country. This suggests that causes

of inflation in the country may have changed. Rather than international factors, domestic factors seem to play a more dominant role in contributing to inflation in Singapore.

### Body Paragraph 3 (domestic factor – higher wages)

In the recent years, domestic factors rather than international factors have been causing high inflation in Singapore.

- In a bid to increase productivity and reduce reliance on cheap foreign workers, SG government restrict the intake of foreign workers → shortage of workers in Singapore amidst strong economic growth → wages of workers increase → higher COP for producers
- However, the increase in wages is not match by an increase in productivity → average COP will increase → SRAS shifts up.
- In addition to the rising wages, producers also see an increase in rental fees. Limited land space but increase in demand for land space → shortage → increase in rental fees → higher COP for producers → SRAS shifts up
- When SRAS shifts up → increase in GPL and hence cost push inflation.

Hence failure to achieve low rates of inflation in Singapore could also be due to domestic factors.

### Transition

Singapore's limited land space and labour pool make it challenging for Singapore government to achieve low rates of inflation. And these same domestic factors increase the likelihood for Singapore to experience DD-pull inflation. While it was argued earlier on that surge in export revenue, an international factor, could lead to DD-pull inflation in Singapore, the rigid AS also contributed to the inflation too.

### Body Paragraph 4 (domestic factor – rigid AS)

Domestic factors also play an important role in causing high inflation in Singapore.

- Increase in export revenue could increase AD. However, if there is sufficient spare capacity, a surge in export revenue might not lead to DD-pull inflation in Singapore. Thus AS plays an important role in contributing to the failure to achieve low inflation.
- Aging population → labour force may grow at a slower rate. This is further exacerbated by the restriction on intake of foreign workers. Thus quantity of resources increase at a lower rate → productive capacity may expand at a slower rate → slower increase in LRAS.
- While Singapore government has attempted to increase productivity through the use of SS-side policies such as SkillsFuture, the result has yet to be seen. Productivity growth was low in 2017. This would mean minimal growth in production of output per unit time → productive capacity may expand at a slower rate → slower increase in LRAS.
- Thus if there is a surge in AD, the rigid AS could lead to high inflation in Singapore.

Hence failure to achieve low rates of inflation in Singapore could also be due to domestic factors.

### Conclusion

- **International factors – harder for Singapore to manage and control.** Singapore is a price taker in the global market. Any attempt by Singapore to influence the SS and DD of goods such as crude oil and rice will have no impact on price. Singapore has to take the price set in the global market. While Singapore could use exchange rate policy to manage the impact of global prices, such policy will have limited and short term impact. There is an extent to how much and how long Singapore could strengthen her Sing dollar before causing harm to her economy.



- Domestic factors – Singapore has more control over. Rising rental fees was managed rather effectively by a series of policies to cool the property market. While attempts to increase productive do not seems to work as evident by the weak growth in productivity, it may be too quick to conclude that the policies are not effectiveness. Given the nature of Singapore workforce, highly educated and skilled, it is likely that Singapore workers could adapt and increase productivity in the workplace.
- Furthermore, improvement in domestic factors such as higher labour productivity would increase LRAS which could create the spare capacity to meet the surge in X and hence AD, reducing the likelihood of DD-pull inflation.
- The higher labour productivity could also dampen the increase in COP due to higher import prices, reducing the likelihood of cost-push inflation.

Level	Descriptors	Marks
<b>L3</b>	<ul style="list-style-type: none"> <li>• Developed and balanced analysis of the domestic and international factors causing the failure to achieve low inflation rates.</li> <li>• Comparison between domestic and international factors using criteria.</li> <li>• Answer is applied to Singapore context.</li> </ul>	<b>8 – 10</b>
<b>L2</b>	<ul style="list-style-type: none"> <li>• Developed but one-sided answer: failure to achieve low rate of inflation is more likely to be caused by domestic factors OR failure to achieve low rate of inflation is more likely to be caused by international factors.</li> <li>• Undeveloped but balanced answer supported by some economic analysis.</li> <li>• Weak attempt at comparing between domestic and international factors.</li> </ul>	<b>5 – 7</b>
<b>L1</b>	<ul style="list-style-type: none"> <li>• Points are largely irrelevant</li> <li>• Descriptive answer lacking economic analysis or contains many conceptual inaccuracies.</li> </ul>	<b>1 – 4</b>

<b>Evaluation</b>		
<b>E3</b>	<ul style="list-style-type: none"> <li>• Reasoned judgment support by well-reasoned arguments as to which factors is more likely to lead to failure to achieve low rate of inflation.</li> <li>• Uses criteria to compare and address the question (e.g. nature of the economy, time period).</li> </ul>	<b>4 – 5</b>
<b>E2</b>	<ul style="list-style-type: none"> <li>• Reasoned judgment based on some analysis.</li> <li>• An attempt to use criteria to compare and address the question.</li> </ul>	<b>2 – 3</b>
<b>E1</b>	<ul style="list-style-type: none"> <li>• Unexplained judgment of relative importance of domestic and international factors.</li> </ul>	<b>1</b>

**ACJC Preliminary Examination 2017 Paper 2 Question 6**

The “fourth industrial revolution” characterised by artificial intelligence, robotics and Internet of Things (IoT) will see robots manufacture cars and drive them, 3D machines print products and call centres being handled by virtual agents. Singapore’s ageing population is a cause for concern in an increasingly digital and technology-driven economy.

- (a) Explain the potential benefits and challenges of free trade agreements for an economy. [10]
- (b) In view of the ‘fourth industrial revolution’, discuss whether the macroeconomic and trade policies adopted by the Singapore government need to be adjusted to maintain a current account surplus in its balance of payments. [15]

**Suggested Approach**

- (a) **Explain the potential benefits and challenges of free trade agreements for an economy.** [10]

**Suggested Approach**

- As free trade agreements are a double-edged sword, students can explain each potential benefit against its challenge instead of structuring an answer where all benefits are explained first followed by all challenges
- Time is more efficiently used when students adopt a benefit1 – challenge1, benefit2 – challenge2,.. approach
- Students should use countries at different stages of economic development or with different characteristics as examples for illustration

Benefits	Challenges
Consumers enjoy lower prices and more variety of goods <ul style="list-style-type: none"> <li>• Increase consumer surplus and consumer welfare</li> </ul>	Challenge to reduce the potential increase in structural unemployment in industries that produces goods that are substitutes to the cheaper imported goods and prevent market dominance <ul style="list-style-type: none"> <li>• Consumers switch from domestic goods to <b>import substitutes</b></li> <li>• <b>Less efficient firms</b> may make losses and shut down</li> </ul> Potential development of market dominance <ul style="list-style-type: none"> <li>• ‘<b>Dumping</b>’ by trade partners or imports from <b>trade partner with strong comparative advantage</b> may lead to market dominance</li> </ul>
Producers enjoy lower cost of production through cheaper imported of raw materials <ul style="list-style-type: none"> <li>• Increases price competitiveness of exports and domestic substitutes of imported goods</li> <li>• Increase profitability of firms</li> </ul>	

<p>Lower or removal of protectionistic barriers for exports lead to increase in export demand</p> <ul style="list-style-type: none"> <li>• Increase in export demand allows firms to specialise and enjoy economies of scale</li> <li>• Increase the profitability of exporting firms and those firms in the industries that support these firms</li> </ul>	<ul style="list-style-type: none"> <li>• as firms increase their scale of production, there is threat of diseconomies of scale as production exceeds the minimum efficient scale output level</li> <li>• this poses a challenge to firms to overcome the threat or rising unit cost of production to remain price competitive</li> </ul>
<p>economy can specialise and depend on the export of goods with comparative advantage for economic growth, these industries will enjoy higher profits and wages</p>	<p>If an economy has few industries with comparative advantage, they will be vulnerable to the external shocks in these industries</p> <p>Challenge is to be more resilient and less dependent on a few industries for economic growth</p>
<p>Improves the current account balance (increase a current account surplus or decrease a current account deficit) through increase in export revenues</p>	<p>Challenge for an economy is to develop sufficient industries with comparative advantage to ensure its export revenues to be greater than its import expenditure</p>
<p>Lower cost of production arising from FTAs can increase SRAS contributing to lowering or keeping inflation rates low</p>	<p>Depreciation of an economy's currency or inflation in FTA countries can cause increasing import prices</p> <p>Challenge to reduce the effects of rising import costs to raising domestic inflation rates</p>
<p>Increase in export markets with increase in export revenues (such that <math>X - M &gt; 0</math>) increases AD generating increase in employment, economic growth and household incomes which will through the multiplier effect, generate further increase in domestic consumption and national output. Positive economic sentiments will encourage more consumption and investments contributing to further economic growth</p>	<p>As economy expands and operates closer to its productive capacity, the challenge for the economy is to prevent high rates of inflation or keeping inflation rates within their targets (healthy and low inflation rates)</p> <p>Whilst FTAs can bring about economic growth, it can also bring about negative economic shocks for an economy, causing falling AD and eventually recession in the economy</p> <p><b>The challenge for the economy will thus be to ensure it is able to sustain its economic growth.</b></p>

## Mark Scheme

### Question 6a

Level	Description	Mark
3	<ul style="list-style-type: none"><li>• well explained benefits and challenges of FTAs to an economy</li><li>• well-structured answer</li><li>• benefits are well classified: consumers, firms and economy</li><li>• ability to analyse the relationship between benefits and challenges</li><li>• excellent economic analysis</li><li>• well applied to countries at different stages of economic development or with different characteristics</li></ul>	8 - 10
2	<ul style="list-style-type: none"><li>• largely descriptive explanation with some application of economic analysis</li><li>• lacking in organisation of ideas, answer lacks structure</li><li>• may not see relationships between benefits and challenges</li><li>• lacking in application to real world</li></ul>	5 - 7
1	<ul style="list-style-type: none"><li>• a listing of the benefits and challenges</li><li>• poorly or no organisation of ideas</li><li>• unexplained statements i.e. lacking in reasoning</li></ul>	1 - 4

- (b) In view of the ‘fourth industrial revolution’, discuss whether the macroeconomic and trade policies adopted by the Singapore government need to be adjusted to maintain a current account surplus in its balance of payments. [15]

### Suggested Approach

- students need to analyse the question well and take note of the key phrases that defines the question
  - **fourth industrial revolution**: decision of whether to make adjustments to policies should be considered in view of the effects and impact of this revolution
  - policies **adopted** – refers to CURRENT policies
  - **adjusted** – not about implementation of policy but making changes to existing policies hence arguments should be on why CHANGES need to be made or not instead of why the policy should be adopted or not
  - remember the **end point** of your arguments: MAINTAIN a current account surplus

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- as an introduction,
  - students may clarify what is the fourth industrial revolution
  - briefly, how this revolution is relevant to (or impact) Singapore
- effects and impact of fourth revolution on Singapore
  - the fourth industrial revolution basically means more advanced, intelligent and sophisticated technology will be driving the next wave of innovations in both production methods and products
  - impact on production
    - use of robotics in manufacturing and service sectors
      - substituting robots for labour
      - traditional labour intensive manufacturing may now be less labour intensive and more capital intensive with more consistency in productivity in terms of quantity and quality
      - narrows the comparative disadvantage that Singapore has in some light manufacturing industries which Singapore can now develop as an area of comparative advantage or at least is able to support some domestic firms operating in these industries
    - 3D machines print products
      - Eliminates the need for expertise to modify, calibrate and maintain machines to produce precision and customised products for prototyping or for consumption
      - lowers personnel cost of production of such precision and customised products
    - call centres being handled by virtual agents
      - reduction in outsourcing of provision of such services to low wage labour abundant countries
    - Internet of Things (IoT)
      - Eliminates or reduce the need for brick and mortar shop fronts for commerce and retail

- Increases productivity and lowers cost of production for all services that can be conducted online 24/7
  - Allows for just-in-time orders and decreases the need for large inventories hence cutting warehousing costs
  - Efficient logistic solutions lowers cost of production as movements of inputs to finished products are made more efficiently
- Impact on product and service markets
  - Consumer electronic devices with more processing power
  - Robotics and its related markets
  - Data storage and internet related hardware and software
  - Data analysis and software programming services
  - . . .
- Singapore's current account surplus is contributed, to a large extent, by a surplus in the balance of trade in goods
- (Policy targets) To maintain a surplus in the BOP current account, Singapore has to maintain its strong surplus in the balance of trade in goods and improve its balance of trade in services (currently a small deficit) and also to reduce the deficit in the primary balance
- to maintain a strong surplus in the balance of trade in goods
  - Singapore's comparative advantage is determined by the skill level of her labour force and level of technology that the economy can harness and adopt
  - Singapore's comparative advantage lies in its state of technology which means she will lose them as fast as new technologies emerge hence, Singapore needs to be in the forefront of technology for her export goods and services to be relevant and competitive
  - With the fourth industrial revolution, Singapore needs to create new areas of comparative advantage as new products and new production methods have to be adopted for Singapore's exports to remain competitive in the world markets
- Review of trade policies
  - Continue to remain a free port with no protectionistic barriers to trade (except for some areas like the car market) as Singapore is dependent on imports of raw materials and semi-finished goods to value-add to them for re-export
  - If goods from other countries can be imported freely into Singapore, it is likely that our trade partners will reciprocate by allow Singapore's good to have easier access to their markets
  - Continue to sign free trade agreements with countries from different regions to diversify our export markets (from emerging countries to developed countries)
  - As Singapore is small and lacking in resources, she is dependent on imports for consumer goods and inputs for production, hence, it is extremely crucial for her export revenues to be very large to support her import expenditure
  - Ensuring a large external market is therefore a necessity for Singapore with or without the fourth industrial revolution
- Review of macroeconomic policies (should be confined to those that will have an impact on maintaining a BOP current account surplus)
  - To maintain and increase **export competitiveness**
    - Fiscal policy – government expenditure

- Adjustment – divert more or increase expenditures in ICT infrastructure to enable firms to adopt up-to-date technologies to ride the wave of the fourth industrial revolution
  - To lower cost of production and improve price competitiveness of exports
- Fiscal policy – tax concession, subsidies, corporate tax rate
  - Continue to keep corporate tax rate competitively low to encourage foreign direct investments or foreign collaboration and joint ventures with domestic firms to leap frog into the fourth industrial revolution (to benefit from the transfer of knowledge and expertise of successful firms of the ‘new’ industries)
  - Adjustment - Tax concessions to be given to new firms or start-ups in industries that will develop and export products or services that leverage on technologies of the fourth industrial revolution
  - Adjustment – divert more funds for subsidies to encourage
    - adoption of up-to-date technologies
    - innovation to create new or enhance existing products and services (creating new areas of comparative advantage) for the fourth industrial revolution
- monetary policy – continue to be centred on exchange rate as the balance between export prices and import prices in favour of export competitiveness continues to be relevant and necessary to maintain a current account surplus
- create a complementary labour force to **support new export industries**
  - adjustment – increase or higher subsidies for skills training in areas related to the fourth industrial revolution to attract more to move out of current industries to new industries
- to improve **primary income balance** (reduce deficit)
  - Fiscal Policy – government expenditure
    - Adjustment – increase expenditure to set up institutions or departments to provide consultancy and expertise to help local firms go regional i.e set up branches in emerging economies
  - Emerging economics are playing catch-up in the technology race hence it should be profitable for established local technology related firms to venture abroad
  - Target successful local firms in technology related industries or technology based **service industries (banking, accounting . . .)** to venture abroad
  - **Increase in primary income inflow to reduce the deficit** in this account balance
- points of evaluation
  - the speed at which **new technologies and new products** are created makes it difficult for firms and the labour force to catch up, the government will need to put in place aggressive campaigning and adopt moral suasion (soft approach) measures to get firms and individuals to respond, with more urgency, to the government’s policy to realise the intended outcomes of the macroeconomic policies
  - Singapore with her greying population, will find it difficult to increase occupational mobility from the old economy to the new digital and technology-driven economy, more must be done to change the mindset of older workers to want to be reskilled for the fourth industrial revolution

- the fourth industrial revolution should be advantageous to Singapore
  - production will be more capital intensive and Singapore is facing declining growth in her labour force hence increasing labour cost may not be a constrain for firms and export price competitiveness may be enhanced
  - to create comparative advantage in service industries that is digital and technology driven as it requires labour skilled in those areas of which Singapore has control over and has in relative abundance compared to the other resources
- it is difficult for the government to identify which industries should be supported (through subsidies and tax concessions) as it is difficult to predict which new technology or new product will be successful and will remain profitable in the long run to contribute to maintaining a surplus in the trade in goods account



## Mark Scheme

### Question 6b

Level	Description	Mark
<b>3</b>	<ul style="list-style-type: none"> <li>• well-developed explanation of policies and their intended outcomes (policy targets)</li> <li>• good use of examples for illustration</li> <li>• good economic analysis and discussion of policies with judgement</li> <li>• consistently addressing the question: fourth industrial revolution, need for adjustments, BOP current account surplus</li> <li>• well-balanced discussion (with and without need for adjustments)</li> <li>• at least 2 well discussed macroeconomic policies and trade policies</li> </ul>	<b>8 - 10</b>
<b>2</b>	<ul style="list-style-type: none"> <li>• largely descriptive with some application of economic analysis</li> <li>• some discussion of policies but may not follow through with judgement on need for adjustment</li> <li>• discussion may be balanced but lack depth</li> <li>• poor reference to question: fourth industrial revolution and Singapore</li> <li>• at most 2 policies are well explained or 3 policies but poorly explained (a mixture of macro and trade policies or only macro policies)</li> </ul>	<b>5 - 7</b>
<b>1</b>	<ul style="list-style-type: none"> <li>• a listing of the different macro and trade policies</li> <li>• discussion is related to but no reference to question</li> <li>• largely a display of knowledge without reasoning, mainly unexplained statements</li> </ul>	<b>1 - 4</b>

### Evaluation

Level	Description	Mark
<b>3</b>	<ul style="list-style-type: none"> <li>• well considered conclusion that is built upon earlier discussion</li> <li>• a well-structured essay that addresses the question</li> <li>• judgements made based on economic analysis</li> </ul>	<b>4 - 5</b>
<b>2</b>	<ul style="list-style-type: none"> <li>• weak attempt at conclusion to address question</li> <li>• some attempt at providing reasons for evaluative statements</li> </ul>	<b>2 - 3</b>
<b>1</b>	<ul style="list-style-type: none"> <li>• unsupported statement of judgement</li> </ul>	<b>1</b>

