HWA CHONG INSTITUTION

C2 Preliminary Examination 2016

Higher 2 Economics

Paper 2 Essays Suggested Answers

Question 1

(a) Explain how free trade helps to alleviate the problem of scarcity. [10]

(b) In the recent decades, technological advancement has helped to promote the spread of information and economic integration has facilitated labour migration.

Discuss the extent to which the above events could help to reduce resource misallocation arising from imperfect information and immobility of factors of production. [15]

Part (a)

Introduction:

Using the theory of Comparative Advantage, we will be illustrating how a country's problem of scarcity may be reduced.

Body:

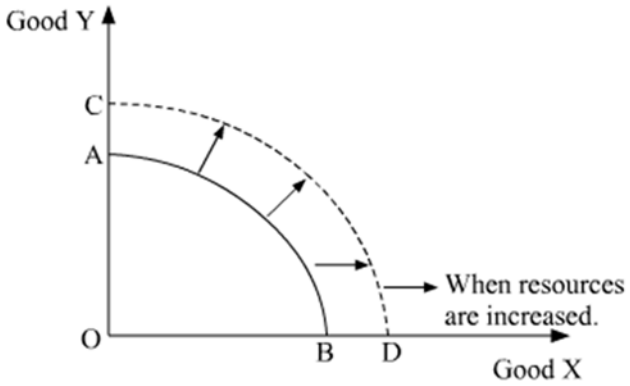
1) Theory of CA
   - The Law of Comparative Advantage states that trade can benefit all countries if they specialise in the goods in which they have a comparative advantage in the production of a good, that is, she can produce the good at a lower opportunity cost than another country.
   - The illustration of the Law of Comparative Advantage is based on the following assumptions:
     - Only 2 countries are involved in the production and exchange of 2 commodities.
     - Each country has 10 units of resources and devotes half of her resources among the production of the 2 goods.
     - There is constant opportunity costs of production of the goods.
     - There are no transport costs, which might outweigh the benefits of specialisation and trade.
     - There are no restrictions to trade (protectionism).
     - There is perfect factor mobility within each country and factor immobility between countries (otherwise no need for trade).
     - There are no emergencies or political or strategic reasons for a country to produce a good with the higher comparative cost.

	Production of textiles and cars before specialization and trade		**Opportunity Cost of producing 1 unit of**		**Production with: DC: Partial Specialise with 75% resources in cars and 25% in textile LDC: Full specialization in textile**		**Consumption after trade by exchanging 12T for 12C TOT: 1T:1C**	
Countries	**Textiles**	**Cars**	**Textiles**	**Cars**	**Textiles**	**Cars**	**Textiles**	**Cars**
Developed Country (DC)	20	30	3/2 C	2/3 T	10	45	22	33
Less Developed Country (LDC)	15	10	2/3 C	3/2 T	30	0	18	12
World	35	40			40	45	40	45

- Although DC is able to produce more of both goods than LDC.
- Both countries can still gain from trade if they specialize according to their comparative advantage which is determined by their opportunity cost in production or relative efficiency in producing the good.
- Before specialization, DC produces 20 units of textiles and 30 units of cars which means it has to give up 3/2 unit of cars for 1 unit of textile or 2/3 unit of textiles for 1 car.
- On the other hand, LDC produces 15 units of textiles and 10 units of cars which means it has to give up 2/3 unit of cars for 1 unit of textiles or 3/2 unit of textiles for 1 unit of car.
- This implies that DC and LDC have a lower opportunity cost or comparative advantage in producing cars and textiles respectively.

- Assuming DC will have partial specialization in cars using 75% of resources and 25% of resources in textiles while DC goes into full specialization in textiles.
- DC will produce 10 units of textiles and 45 units of cars and LDC will produce 30 units of textiles only.
- These countries will agree to trade if the terms of trade lie between: 2/3 cars < 1 textile < 3/2 cars or 2/3 textiles < 1 car < 3/2 textiles. Terms of trade (TOT) measures the rate of exchange of one good or service. The exact terms of trade will depend on the strength of demand and the relative bargaining powers of the countries involved.
- Assuming they agree on the terms of trade of 1 unit of textiles to 1 unit of cars and exchange 12 units of textiles for 12 units of cars.
- After specialization and trade, DC gain 2 and 3 units of textiles and cars respectively and LDC gain 3 and 2 units of textiles and cars respectively. The world output also increases by 5 units each for textiles and cars.
- It is clear that after specialization and trade, both DC and LDC gain from trade and consume beyond their PPC

2) Free trade also allowed even more movement of capital goods and even resources. As a result, the country will have increase in the quantity of resources. That will means that the PPC can actually shift outwards to encompass more points outside the original PPC.



This means that people can now access the point in ABCD and thus the problem of scarcity has been alleviated.

Conclusion:

-
- Consumption beyond PPC → able to alleviate the problem of scarcity
- Extent of pt beyond PPC will depend on the difference in opp cost and the type of goods that has been traded.

Marking Scheme

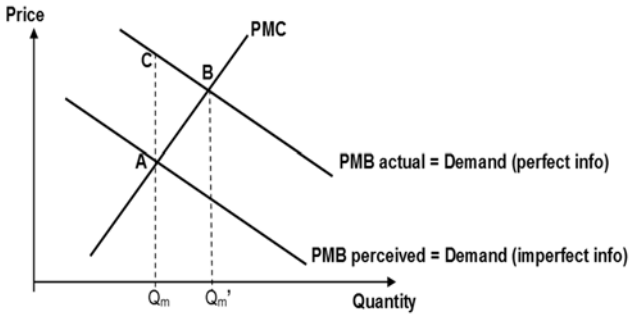
LEVELS	DESCRIPTION	MARKS
3	• Shows good explanation of the CA theory using appropriate examples. • Ability to explain how the theory allows country is able to consume beyond the PPC and thus it is a alleviation of scarcity with the a PPC diagram • Well-illustrated and explained table. Or Brief explanation of Theory of CA but shows understanding that free trade can alleviate scarcity through trade of FOPs.	7-10
2	• Ability to explain how the law of CA lead to increased world output but inadequately explained. • CA table contains minor errors and inadequately explained • Scarcity unexplained with PPC.	5-6
1	• Major conceptual errors with little coherent explanations. • Not linking theory of CA to scarcity • CA table unexplained	1-4

Part (b)

Introduction:

- Given the age of technological advancement, there has been information explosion and unseen amount of movement of labour.
- Will be examining if such an age had led to better resource allocation and thus less welfare loss for the society.

Body:

Thesis : Allocation of resources has been improved	**Anti- Thesis: Allocation of resources might not have improved**
Imperfection of information ▪ Will better access to information, consumers are better informed and thus make better decision and able to attain optimal social efficient pt. ▪ Using an example and diagram for framework Possible Context: Healthcare – Colorectal cancer screening Consumers may underestimate their true private marginal benefits from colorectal cancer screening due to imperfect information. For example, if consumers knew that colorectal cancer is now the most common cancer in Singapore affecting both males and females, they would realise that the benefit of such screenings is that it has a good chance of detecting the cancer early. Furthermore, the early stage of colorectal cancer is often localised to the bowel and hence early diagnosis can often lead to a complete cure. Figure 9: Imperfect information on actual PMB of cancer screening  • Assume that there are no positive or negative externalities. • As seen in Figure 9 above, with imperfect information, consumer demand for colorectal cancer screenings is lower at PMB perceived as they underestimate the actual benefit of such screenings. • As such, the market equilibrium quantity would be at Q_m where **PMB perceived = PMC**. • However, the true private marginal benefit should be at PMB actual. • Hence, with perfect information, the market equilibrium quantity would be higher at Q_m**'** where **PMB actual = PMC**. • Hence the ignorance of the full benefits of colorectal cancer screenings causes an **underconsumption** Q_m**'** – Q_m of such screenings. • Area Q_m**'**Q_mCB is the actual total private benefit foregone for the underconsumption Q_m**'** – Q_m. • Area Q_m**'**Q_mAB is the total private cost not incurred for the underconsumption Q_m**'** – Q_m. • Since the actual total private benefits foregone exceeds the total private costs not incurred for underconsumption Q_m**'** – Q_m, area ABC represents the **deadweight welfare loss** due to underconsumption of Q_m**'** – Q_m.	▪ There might over compensation and result in too much increase demand, resulting in overconsumption and DWL too. ▪ There might be too much conflicting information, resulting in information overload. For example: MMR vaccines and its correlation with autism ▪ Some maybe misleading or sources may not be credible.

• However with better spread of information through various media, people realized the importance of such screening and divergence between the actual and perceived would be reduced → This will improve the allocation of resources and reduce the DWL.	
Immobility of Resources ▪ With the better transport technology and the free trade agreement which may allow resources to be move more freely. **Types of Immobility of Factors of Production** **(A) Labour Immobility** Labour as a factor of production often experiences occupational immobility and/or geographical immobility. • **Occupational Immobility**: As an economy progresses, there tends to be a shift in the composition of the types of industries in the economy. For instance, a developed economy may create more employment opportunities in the service sector whereas the manufacturing industries are facing a decline due to a loss in the comparative advantage. However, despite greater job opportunities in the service industries, workers are not able to switch jobs immediately to work in the service sector due to occupational immobility. They lack the skills to work in this sector. Thus, even though there may be abundant supply of workers in the economy, they will not be able to fill the job vacancies that are created in the service sector. Thus these workers become structurally unemployed. • For example, a large number of unemployed factory operators with primary school education in Singapore may not be able to work in growing industries like pharmaceutical industries. This implies that there is a mismatch of skills between the unemployed and those required in expanding sunrise industries in Singapore. Clearly, this leads to a waste of resources and represents market failure. • However with the availability of online courses, one can be equipped for a certain job more readily. Knowledge can be learnt from these online course and they can even be from reputable universities. Now society can produce closer to PPC and have less welfare loss as it is able to be closer to the maximum potential. **(B) Geographical Immobility**: Geographical immobility exists in large countries (e.g.UK, USA, China and India) when there are barriers to people moving from one region to another in search of jobs. These barriers include social ties and costs involved in moving between regions. Thus market failure occurs because resources are not being reallocated from areas where demand for labour is low and unemployment high to other areas where demand for labour is high and there plenty of unfilled job vacancies. • However, with advancement of technology and economic integration, travelling from one place to other has become hassle free, cheaper, more convenient and less time consuming. • For example, for the citizens of EU, the citizens could travel from one country to another without going through any border and thus no need for passports. For Singapore, traveling to most countries do not require visa application.	▪ Not all resources are mobile. Some resource like land are just fixed. ▪ But a globalized world means that other countries can have access to the resources. • Certain job needs practical trainings too. Thus purely attaining knowledge via the online courses is insufficient. Examples are surgeons, counsellors etc. • As such, not all occupation immobility can be mitigated by the spread of technology. • No Antithesis for Geographical immobility • Not all resources are mobile even with technological advancement and economic integration. For example : **Capital Immobility** • **Functional Immobility:** Certain capital goods are difficult to transfer from one use to another. For instance, a train once built is only useful as a train. It cannot function as a car or a plane. • **Geographical Immobility:** For other capital goods, it is difficult to transfer it from a geographical location to another. For example, a petrochemical plant built

• International travels are made cheaper and faster with the newer and faster aeroplanes. Traveling within China with its bullet and travelling within Europe using the Eurostar only take hours. Domestic flight are also readily available.	in China cannot be easily uprooted and transferred to the US.

Conclusion:

Technological advancement could have helped to promote the spread of information and economic integration has facilitated labor migration but need not necessarily have helped in all aspects of resources allocation pertaining information and all factors of productions.

Marking Scheme

LEVELS	DESCRIPTION	MARKS
3	• Discusses both market failures adequately. • Clear analytical framework used to discuss the arguments for and against . • Analysis adequately addresses the context, giving examples when possible.	**9 - 11**
2	• Lack scope in that only 1 of the 2 market failures were covered. • Lack scope in that the arguments raised were overly one-sided with scant consideration of the anti-thesis. • Analysis does not adequately address the given context. • May have some minor conceptual errors in some of the key concepts in the question or is very theoretical with minimal contextualised arguments. • An answer that digresses excessively into alternative solutions.	**6 - 8**
1	• Major conceptual errors with little coherent explanations • No examples at all or examples are irrelevant or inappropriate • Missing link to key concepts in the question	**1 - 5**
E2	• Answer has a simple stand • Answer has a well-explained evaluative comment within the body of the essay.	3-4
E1	• Answer lacks a well-justified stand • Answer lacks any evaluative comment within the body of the essay or contains generic evaluative comments.	1-2

<u>Question 2</u>

In recent years, the price of natural fertilisers for organic brown rice production has risen and healthy living campaigns are seeing more consumers switching from non-organic white rice to organic brown rice.

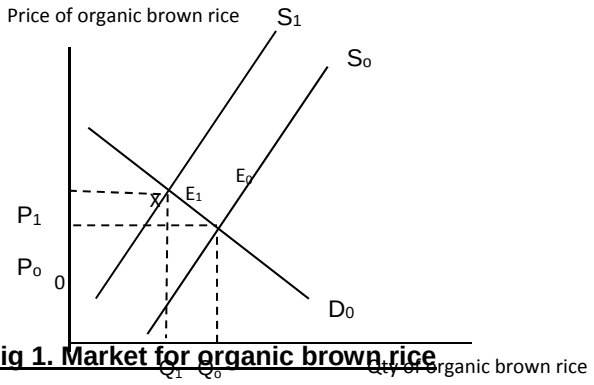
Assess the relevance of elasticities of demand and supply in understanding the impact on the expenditure by consumers on non-organic white rice and organic brown rice. [25]

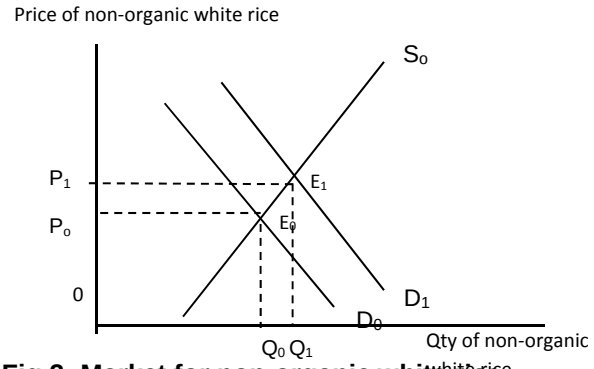
Introduction

- Focus: Assess the relevance of PED, PES, YED & CED in impacting the consumer expenditure in each market given a rise in the price of natural fertilizers and healthy living campaigns.

- Key Definitions:
  - Consumer expenditure (CE): Total amount of money that consumers spend on a product. [CE = P x Q]
  - PED: Measures the degree of responsiveness of quantity demanded to a change in the price of the good itself, ceteris paribus.
  - PES: Measures the degree of responsiveness of quantity supplied to a change in the price of the good itself, ceteris paribus.
  - YED: Measures the degree of responsiveness of demand of a good given a change in income, ceteris paribus.
  - CED: Measures the degree of responsiveness of demand of a good to a change in the price of another good B (substitutes / complements), ceteris paribus.

Development 1: Consider the impact of a rise in price of natural fertilizers in both organic brown rice market and non-organic white rice market. (rise in the price of natural fertilizers are assumed to have no impact on the supply of non-organic white rice market)

<table>
<tr><td colspan="2">Development 1: Consider a rise in price of natural fertilizers</td></tr>
<tr><td>Organic Brown Rice Market</td><td>Non-organic White Rice Market</td></tr>
<tr><td> 

<u>Fig 1. Market for organic brown rice</u></td><td> 

<u>Fig 2: Market for non-organic white rice</u></td></tr>
<tr><td>Assume that natural fertilizers are used in the production of organic brown rice(i.e. factor of production): Rise in price of natural fertilizers→ increases the unit cost of product → fall in SS of organic brown rice from So to S_1→ less units of organic brown rice is supplied at every price → [briefly explain adjustment process] → rise in eqm price from Po to P_1, fall in eqm qty from Q_0 to Q_1.

The DD for organic brown rice is likely to be price elastic (PED> 1) due to availability of non-organic rice as substitutes to organic brown rice. Hence, a rise in price of organic brown rice lead to a more than proportionate fall in quantity demanded of organic brown rice. WRT Fig 1, a rise in the price of organic brown rice (due to a fall in SS) leads to a fall in CE due to a more than proportionate fall in qty dd (i.e. area $E_0Q_0Q_1X$) as compared to a smaller rise in CE due to the rise in P (i.e. area $E_1P_1P_0X$)→ CE on organic brown rice falls from 0PoEoQo to $0P_1E1Q_1$.

Note students can also argue that demand for brown rice to be price inelastic due to the price being of low proportion of income for most households.</td><td>Rise in price of natural fertilizers → fall in SS of organic brown rice → fall in qty dd of organic brown rice → rise in DD for non-organic white rice since they are substitutes (CED>0) → demand curve shifts right from Do to D_1 → more units of non-organice rice is demanded at every price → rise in both eqm price & qty from Po to P_1, Qo to Q_1 → rise in CE from 0PoEoQ0 to $0P_1E1Q_1$.</td></tr>
<tr><td colspan="2">Comment on Relevance of DD elasticities:</td></tr>
<tr><td colspan="2">PED is relevant in explaining the impact on CE in the market for organic brown rice as it explains how qty dd of organic brown rice changes wrt a rise in the price of organic brown rice due to a fall in its supply.

CED is relevant in explaining the impact on CE in the market for non-organic white rice as it explains how DD of non-organic white rice (and therefore its P & Q) is affected due to a rise in the price of organic brown rice, when the supply falls.

PES is irrelevant here as a rise or fall in demand will cause CE to rise (both P and Q increase) or fall (Both P and Q fall) respectively, regardless of the extent of change in Q when P changes.

YED is irrelevant here as there is no change in income mentioned in the preamble.</td></tr>
</table>

Development 2: Consider the impact of the healthy living campaigns in both brown rice market and white rice market.

Development 2: Consider healthy living campaigns

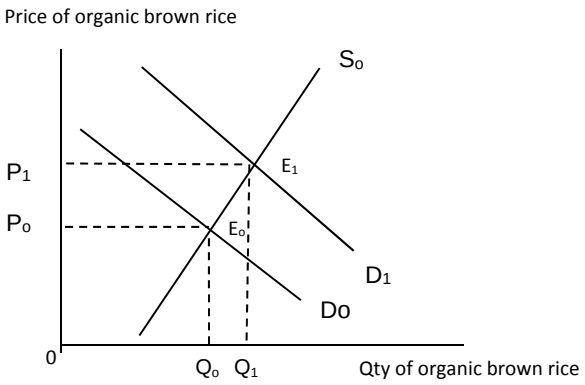


Fig 3. Market for organic brown rice

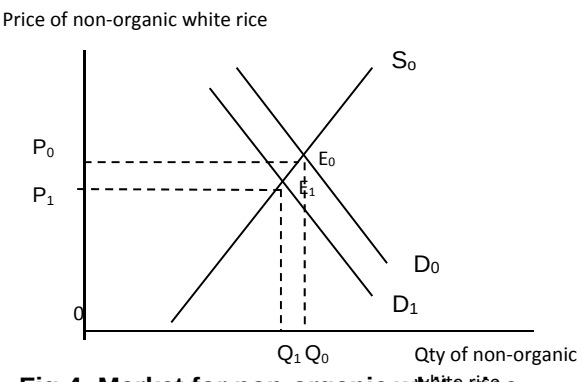


Fig 4: Market for non-organic white rice

Assuming that healthy living campaigns successfully lead to consumers being more informed of the possible health benefits of consuming organic brown rice → change consumers' taste and preference towards organic brown rice → switch to consuming organic brown rice → rise in DD for organic brown rice from D_0 to D_1→ rise in eqm price and qty from P_0 to P_1, and Q_0 to Q_1 → rise in CE on organic food from $0P_0E_0Q_0$ to $0P_1E_1Q_1$.

Successful healthy living campaigns in changing taste and preferences towards organic brown rice → assume that the DD for non-organic white rice falls from D0 to D_1 as consumers switch from consuming non-organic white rice to organic brown rice → fall in eqm price and qty from P_0 to P_1, Q_0 to Q_1 → CE decreases from $0P_0E_0Q_0$ to $0P_1E_1Q_1$.

Comment on Relevance of DD elasticities:

CED is irrelevant in explaining the impact of the rise in brown rice on the CE in the market for non-organic white rice. The rise in price of brown rise is caused by a demand change, and not a change in supply.

If students argue using competitive supply, explaining that farmers start to devote more factors of production into producing brown rice due to their expectations of price increase from the healthy living campaign, thus reducing the supply of white rice. Then they can make use of PED to discuss the impact of expenditure on white rice. Otherwise PED is not relevant here.

Similar to the previous discussion on the previous page, PES and YED continue to be irrelevant in explaining the impact on CE in both markets due to healthy living campaigns.

Analyse the combined net impact on the market for organic brown rice:

If students argue that PED < 1, fall in supply will lead to a rise in CE. Furthermore, healthy living campaign will increase the demand for organic brown rice thus also increasing CE. Combining the 2 events, consumer expenditure will increase overall.

If students start from PED > 1, then there will be 2 offsetting changes to CE. They should have a graph showing the combined shift with the appropriate justification on which curve shifts more, with the appropriate conclusion regarding consumer expenditure.

Analyse the combined net impact on the market for non-organic white rice:

If students only shift the demand to the left due to the campaign, then consumer expenditure could only fall.

If students also include competitive supply justification to argue that supply would fall, together with an explanation that PED < 1, due to white rice being a necessity for most Asians, expenditure can then rise. They are then expected to take a stand on what is the overall effect regarding consumer expenditure.

Conclusion

Conclude with the relevance of the elasticities concepts (PED & CED are more relevant while PES & YED are 'less' relevant) and the likely impact on the total expenditure on the 2 markets with evaluation.

Marking Scheme

Level	Descriptor	Mark
L3 Upper	An excellent answer which analyzed well how the combination of events impact on the expenditure by consumers on non-organic white rice and organic brown rice. Both breadth and depth evident. Shows a strong ability to exemplify and able to apply them to the context of the question. Judgements on the relevance of the elasticities concepts are given (PED & XED are more relevant compared to PES & YED).	19-21
Lower	A competent answer which analyzed well how the combination of events impact on the expenditure by consumers on non-organic white rice and organic brown rice**.**	16-18
L2 Upper	An answer which explained well how the combination of events impact on the expenditure by consumers on non-organic white rice and organic brown rice. There is sufficient scope but lacks depth (or vice versa). Some judgements on the relevance of the elasticities concepts are given.	13-15
Lower	For an answer which explains the events on the impact on the expenditure by consumers on non-organic white rice and organic brown rice. However, theoretical analysis may not be so accurate. Diagrams to illustrate concepts are missing/incomplete.	10-12
L1 Upper	An answer which shows some understanding of the question and has limited scope and depth. The context of the question is not considered. Diagrams may not be used to illustrate theoretical concepts.	6-9
Lower	An answer which struggles to answer the question with major misconceptions or question has been misread.	1-5
Evaluation		
E2	For an evaluative assessment based on economic analysis.	3-4
E1	For unexplained assessment.	1-2

Question 3

There are five movie theatre operators in Singapore and they are making efforts to protect their profits in view of rising competition from online movie streaming services.

(a) Compare the barriers to entry of movie theatre industry and online movie streaming industry. [10]

(b) Discuss the likely impact on profit of a movie theatre operator when faced with competition from online movie streaming services. [15]

Part (a):
Approach: Define barriers to entry and mention types of barriers to entry (substantial iEOS, control of essential raw materials or wholesale/retail outlets, legal barriers, brand loyalty, other tactics to eliminate competition, etc).

Definition: Barriers to entry are a combination of obstacles that deter or prevent new firms from entering a market to compete with the existing firms.

Compare between the 2 industries:
Movie Theatre (high BTE): high initial capital outlay, legal barrier for the need to have the license for distributorship.
Online movie streaming (low BTE): low initial capital outlay, legal or illegal source of distributorship.

Substantial Internal Economies of Scale
Movie theatre: When sunk cost is large for an industry, there are substantial economies of scale to be reaped at only very high levels of output. Large movie theatre operators have the power to obtain the rights to screen first-run films and to do so at a lower average cost per screening. The more screens in the chain, the lower the unit cost of each screening. Similarly, a large chain can re-equip its cinemas with new technology (such as 3-D viewing) at a lower average cost. Other technologies may also be shared, such as online booking systems which cover all cinemas around Singapore. There are also financial and risk bearing economies of scale available to movie theatre operators, including the ability to raise finance for expansion through possible acquisitions, and to bear and manage commercial risks more effectively. These factors combine to put large movie operators at a great advantage in being able to win and maintain market share.

Online Streaming Movies: Generally, lower initial capital outlay and hence, the scope of internal economies of scale are lesser.

Control Wholesale/Retail Outlets & Legal Barriers
Movie theatre: Large movie theatre has control over the outlets through which the films must be shown, it can prevent potential rivals from gaining access to consumers. For example, exclusive rights to broadcast certain movies at its outlet or distributorship and this prevent other firms to broadcast the film due to licensing/copyrights. (A licence is the right to operate or produce certain goods and services that are granted by the government.)

Online Streaming Movies: The source of distributorship may not be that clearly defined, as online streaming movies sites may try to avoid trouble by not hosting their own content, instead acting as a search engine for links to streamed content, usually embedded from a secondary site.

Brand Loyalty
A strong brand name is a barrier as a new entrant will have difficulties breaking into the market as it is extremely hard to compete against a well-established brand in context of movie theatres as compared to online streaming movies. The brand name is often established by means of product differentiation, in terms of types of seats or services provided for the movie going consumers.

Note: Predatory pricing and supernormal profits argument are not accepted as BTE in the context of the question.

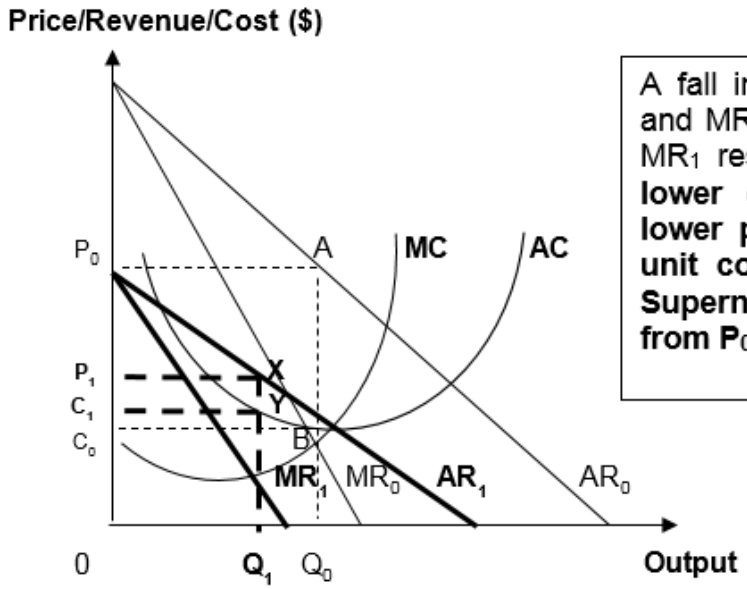
Conclusion:
In general, the barriers to entry for the movie theatres are higher than that of the online streaming movies.

Marking Scheme

LEVELS	DESCRIPTION	MARKS
3	Clear and logical **comparison** of BTE (with examples, 3 different types of BTE) with consistent use of good examples to illustrate. Low L3 (7m) – 2 well explained and exemplified BTE	7-10
2	Adequate knowledge of BTE but **comparison** is underdeveloped. Mistakes in explanation and few/no examples used.	5 – 6
1	Merely define BTE without clearly **comparing** between the two. No examples provided.	1 - 4

Part (b):

Approach: Discuss the change in profit of a movie theatre operator in context of rising competition from online movie streaming (illustrate with cost revenue diagram to show how supernormal profits may have been reduced – AR falling).



A fall in demand will cause AR_0 and MR_0 to decrease to AR_1 and MR_1 respectively. This results in **lower output from Q_0 to Q_1, lower price from P_0 to P_1 and unit cost rises from C_0 to C_1. Supernormal profit decreases from P_0C_0BA to P_1C_1YX.**

The extent of the change in profits will warrant certain responses from the movie theatre operator with strategies to protect its profits. Strategies could be either revenue (maximising revenue) or/and cost (minimising cost):

Revenue Strategies:

- ➔ Different discounts given (loyalty programme, 1-for-1 movie ticketing, etc). Bundling with other products like popcorn, movie related products etc.
- ➔ Better quality / experience → sound system, type of seats, timing, memberships, loyalty programme.
- ➔ Experience → IMAX experience (the state-of-the-art technology and architecture makes the movie so real, you'll forget you're in a theatre)
- ➔ Kinetic seats: Some amusement parks, such as the Six Flags franchise, have custom-built theaters with kinetic seats that tilt, spin, and rumble according to what's happening on the screen. Usually the film is something short, like a dinosaur chase.
- ➔ Thematic theater designs: For example, a movie theater where the "seats" were individual hot tubs. Or a movie theater that didn't have any seats at all. Instead, sand covers the ground from corner to corner and the temperature is kept comfortable ("beach theater").
- ➔ Marketing → advertisements, securing exclusive release or launch events that streaming services may not provide.

Cost Strategies:

- ➔ Minimising variable cost → reorganising movie screening time to minimise unnecessary use of electricity, especially during non-peak period.
- ➔ Introducing methods to cut back on manpower cost → enhancing ticket sales/collection (for eg, quick tix used by Golden Village where purchase/collection of tickets can be done without manpower cost).

Note: Any feasible/possible revenue and/or cost strategies can be accepted in the context of the question.

Conclusion:
In conclusion, theatre-going is a "social activity" and experience that cannot be replaced by online movie streaming services. While online streaming "may impact attendance to some extent", theatre-going can be made compelling by putting in place "infrastructural investments" that heighten the overall experience. These amenities create a unique experience for the theatre goer. Serving a meal, offering certain types of beverages and luxury seating all present a compelling reason to watch a film in a movie theatre as opposed to at home via online movie streaming services. Additionally, movie theatres can easily justify increased ticket prices in locations where full-service amenities are present.

Whether a movie theatre operator would response to protect its profit when faced with rising competition from online movie streaming services would ultimately depends on the degree of competition/impact in terms of profits for a movie theatre operator.

Marking Scheme

LEVELS	DESCRIPTION	MARKS
3	For a well-balanced answer which provides a thorough analysis of the impact on profit of movie theatre operator and its response to the impact via appropriate strategies, applying to the context of the movie theatre operator against online movie streaming services.	9 - 11
2	Able to identify and examine the impact on profit of movie theatre operator and its response to the impact via appropriate strategies, however, answers are largely theoretical and under developed.	6 - 8
1	Descriptive answer lacking in economic analysis. Mostly irrelevant answer.	1 - 5
E2	Substantiated judgement	3-4
E1	Some attempt at judgement	1-2

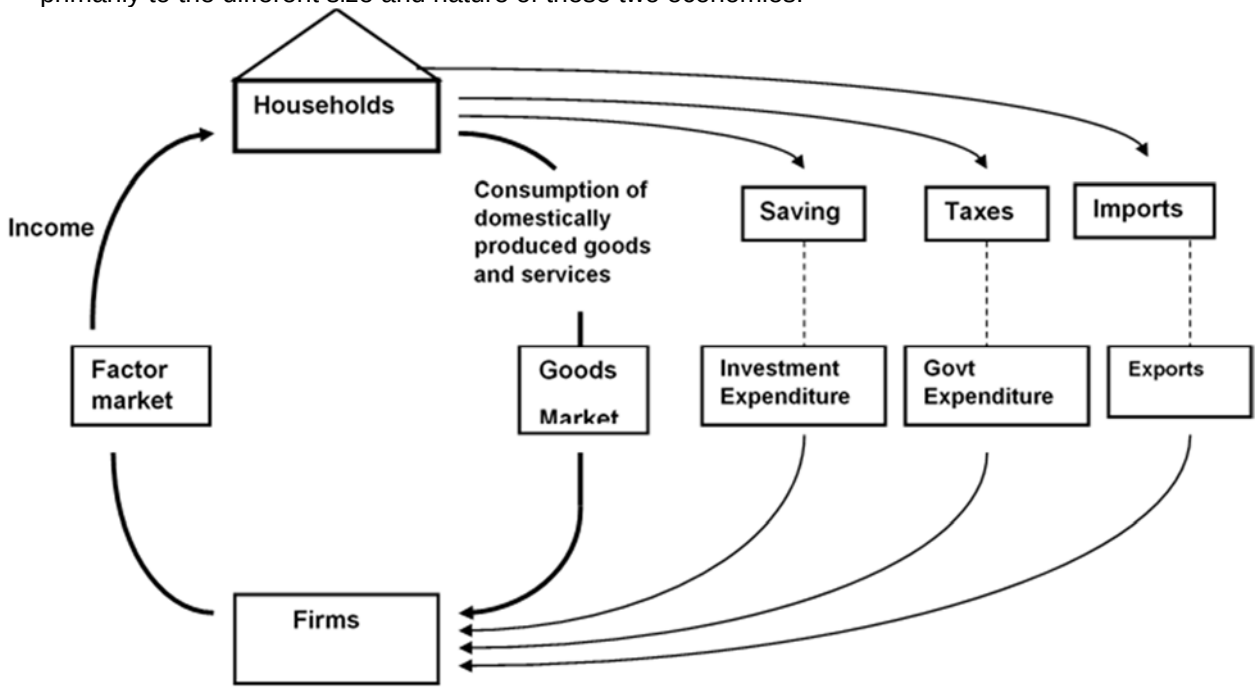
Question 4

(a) Explain how the relative importance of the components of the circular flow of income for a small and open economy might be different from a large and less open economy. [10]

(b) Assess the usefulness of the components of the circular flow of income to compare different countries' standard of living. [15]

Part (a)

- Explain the circular flow of income. Need to draw the diagrammatical model.
- In a 4 sector economy like Singapore and USA, withdrawals from the circular flow of income includes saving (S), taxes (T) and imports (M). Injections on the other hands are made up of investment (I), government expenditure (G) and exports (X).
- The relative size of these various components of the circular flow of income differs for Singapore and the USA due primarily to the different size and nature of these two economies.



- In a simple 2 sector economy, the circular flow of income comprises only of firms and households. Whatever that is produced by the firms are assumed to be consumed by the households paid for by the income given to the households by the firms.
- However, referring to the diagram above, we can see that for open economies like Singapore and USA, there are various factors which will cause money to 'leak' from the circular flow of income, and conversely, there are also injections into it.
- Total withdrawals from a country's circular flow of income can come from households saving part of their income (S), paying taxes (T) and buying of imported goods (M).
- Likewise, not all receipts arise from the consumption of domestic consumers. Some are injected in the form of exports (X), investment (I) and government expenditure (G).
- The Singapore economy is a much smaller country (no natural resources) compared to the USA economy and hence, is very dependent on imported goods, both in terms of raw materials and finished goods. Hence, Singapore will have a higher level of leakages relative to that of the US's.
- Singapore is also much more open compared to the USA. This would mean that Singapore would also experience high level of injections into the circular flow from exports (X). This is due to the fact that Singapore has a smaller domestic market compared to that of the USA, and hence most of the goods produced by the firms in Singapore are meant for export purpose. On the other hand, USA has a relatively bigger domestic market compared to Singapore, and hence, most of her goods are consumed domestically in the country.
- All in all, due to the different nature of the two economies, the relative importance of the components of the circular flow of income will be different. X and M will be much more important to Singapore than USA and C (affected by S and T) will be much more important to USA than Singapore.

Marking Scheme

LEVELS	DESCRIPTION	MARKS
3	• Shows good explanation of the circular flow of income using appropriate examples. • Ability to explain how the components (in particular C, X and M) might be important for the different countries • Well-illustrated diagram.	7-10
2	• Lack elaboration of examples of the different countries. May be just mere mentioned • Able to inadequately explain the circular flow of income with some minor mistakes	5-6
1	• Major conceptual errors with little coherent explanations.	1-4

Part (b)

Components can be useful	**Not necessary useful indicators, Limitations and other indicators needed.**
1) SOL measures ability to consume goods. Thus C (low level of S) and M will be proxy indicators for the different countries. ➔ So if the countries have high level of C (low level of S) and M, (depending on whether capital or consumer goods are imported) material SOL may improve. If M is on consumer goods, the people in each countries would be able to consume high level of domestic and foreign goods → higher level of current material SOL. However, if M is on capital goods, future material SOL might increase with material SOL increasing due primarily to the high level of C. ➔ For countries which tend to save more and import less consumer goods, the level of SOL may not be that high. 2) Level of T → high level of taxes may indicate lower level of disposable income for the people in the different countries. As such, this might indicate a lower level of current material SOL as it means less is left after tax for consumption. 3) Level of X → when more are being exported, does it means less is available for ppl in the country. If it is so, then the current level of material SOL will be affected. → It could also be that there is a difference in quality between those consumed within the country and those which are exported. If the better quality ones are being exported, then it could indicate a lower level of SOL for the residents compared to other countries. 4) Level and components of G → If there is high government expenditure on welfare payouts, then the lower income of the country will have a better SOL compared to those in countries which does not have such welfare system.	1) Better indicators could be used for the comparison across the different countries like Real National Income per capita (PPP-adjusted) to give a more general picture of the SOL. Even the value of the various components needs to be PPP adjusted to better compare. - it is crucial to look at the per capita figures to ascertain the difference in material standard of living, since population growth will be different for different economies. - As every economy measures the value of its components, output or GDP in their respective domestic or national currencies, there is a need for a common currency. Today, it is standard practice to use the <u>US dollar</u> as the common currency to measure GDP per capita for the purpose of international comparison of standard of living. Before any comparison is made the GDP of different countries must be first converted into US$. However, this poses a problem for international comparison, because the set of exchange rates commonly used are based on market or official exchange rates prevailing in the currency markets. Although the market or nominal exchange rates are easily available and are used on a daily basis by banks and money-changers, using these rates for the purpose of international comparison of GDP per capita poses 2 key problems: (1) <u>Fluctuations of market exchange rates</u>: Market exchange rates are determined by the market forces of demand for and supply of currencies in the foreign exchange markets. The exchange rates may fluctuate whenever the demand for or supply of currencies changes. The official exchange rates could even be the result of speculative activities and government interventions in the currency market. Ceteris paribus, using such exchange rates causes the value of the GDP to change arbitrarily whenever exchange rates fluctuate, making comparison of GDP per capita meaningless. (2) <u>Inaccurate reflection of Purchasing Power:</u> An even more serious drawback is the fact that international comparisons of Real GDP per capita based on market exchange rates are misleading as they do not reflect the relative Purchasing Power of the respective currencies. To overcome this problem, economists use Purchasing Power Parity (PPP). PPP refers to the number of currency units required

→If govt spent on building infrastructure or national defense, then money are channelled away from consumption and thus a lower SOL. 5) Level of Investments (I) → An increase in investments through capital accumulation is likely to increase productive capacity which means the economy will be able to enjoy the utilisation of capital goods in the long run. This will increase future material SOL.	to purchase an amount of goods and services equivalent to what can be bought with one unit of currency of the base country, for example the US dollar (a commonly used base currency). This means that without the use of PPP figures, standard of living comparisons may not be fair as it may overstate or understate the standard of living of the economies under comparison. 2) Other limitations of measurement across countries. • **Income Inequality :** A country's GDP per capita may be higher than that of another country but its living standards may be lower due to greater inequality in the distribution of income. Again, a better measure might be to use the Gini coefficient as a basis for comparison. Global Gini coefficients range from 0.23 (Sweden) to 0.40 (United States) and Singapore's Gini coefficient was at 0.463 in 2013, suggesting greater income inequality than the US and developed European nations. Also, poor or developing countries usually have wider disparities in income distribution. Wealth is concentrated in the hands of a minority group of people who might also wield political power. • **Different size of the non-monetised sector** Comparisons of GDP per capita between countries will be misleading if the relative importance of their non-monetised sectors is vastly different. Generally, developing economies tend to have a larger non-monetised sector than developed economies. For instance, developing countries with rural farming populations tend to have large non-monetised sectors. In farming communities, it is common to have unpaid family members and relatives helping out on the farms. Farmers also engage in subsistence farming, i.e. growing food for their own consumption. Such outputs are not measured and therefore not reflected in the official national income statistics. The role of women in society also influences the size of the monetized sector. For example, more Asian women stay at home as full time housewives compared to their western counter-parts. However, the services provided by full-time housewives are not counted in the national income. Hence, national income statistics would tend to understate the true level of activity since they are not able to capture this level of economic activity in the economy. • **Differences in the availability and reliability of data** One of the greatest limitations when comparing standard of living between countries is the lack of accurate data. Comparing the relatively more accurate estimates of advanced countries with that of more backward countries will yield misleading results. For example, it is a well-known fact that the official statistics issued by China are often fraught with such problems. It is not an easy task to collect accurate statistics in such a vast country where a large part of the population live in rural areas, and where the administrative machinery for gathering official statistics is relatively inefficient - not to mention that corruption is also a big problem. 3) Other indicators needed esp for non-material aspect of SOL. • **Negative externalities**

	Developed economies tend to have higher GDP per capita than emerging economies. However, the higher output levels may be accompanied by higher levels of pollution, congestion and depletion of natural resources. Hence, it can be seen that higher output levels could lower the standard of living for such countries. Therefore, solely looking at national income statistics alone is insufficient to give a true picture of the standard of living between countries, i.e. it may **overstate** or **understate** the standard of living. Economists sometimes refer to the concept of 'green' GDP which takes into account differences in environmental quality. • **Disamenities** (Differences in the hours of work vs. leisure time) The higher real GDP per capita in some countries may be the result of people working harder or longer hours. A real higher GDP per capita does not therefore necessarily mean a better standard of living, if the increased GDP is due to longer working hours. In today's context, a key issue is work-life balance. The quality of life in a fast-paced urbanised society is often marred by 'unhealthy' work-life balance, i.e. a disproportionate amount of time is spent working. In order to improve the quality of life, people are increasingly striving to achieve a so-called satisfactory work-life balance, i.e. striking a balance between earning a desired income and having sufficient time for leisure.

Conclusion:

The components of the circular flow of income could be used as a proxy in absence of better indicators. Else the better indicator should be use with especially adjustment for PPP. We also need to consider the non-material aspect too as the components could be use to gauge the material aspect only.

Marking Scheme

LEVELS	DESCRIPTION	MARKS
3	• Discusses the components of circular flow thoroughly with an anti-thesis emphasising the need for indicators to be PPP-adjusted and data on the non-material aspect. • Clear analytical framework used to discuss the arguments. • Analysis adequately addresses the context, giving examples when possible.	**9 - 11**
2	• One-sided arguments lacking in scope such as the lack of consideration of the non-material aspect of standard of living and the need for PPP adjustment to indicators. • Analysis does not adequately address the given context (eg. cover some components of the circular flow of income) • May have some minor conceptual errors in some of the key concepts in the question or is very theoretical with minimal contextualised arguments.	**6 - 8**
1	• Major conceptual errors with little coherent explanations • No examples at all or examples are irrelevant or inappropriate • Missing link to key concepts in the question	**1 - 5**
E2	• Answer lacks a well-justified stand • Answer has a well-explained evaluative comment within the body of the essay.	3-4
E1	• Answer has a simple stand • Answer lacks any evaluative comment within the body of the essay or contains generic evaluative comments.	1-2

Question 5

Discuss whether the use of various policies by governments will inevitably lead to conflicts in macroeconomic objectives. [25]

Candidates are expected to examine how the used of macroeconomic policies leads to conflicts. They are to analyse 2-3 macroeconomic conflicts such as economic growth vs demand-pull inflation, imported inflation vs economic growth, economic growth vs BOP equilibrium and potential growth vs structural unemployment.

Candidates are explain the use of other policies that serve as anti-thesis of the conflicts.

The nature and state of economy can be used as limitations should be considered in examining if the extent of these conflicts would be justified. Other factors should also be used.

Policy 1: Expansionary FP: Economic Growth vs Inflation

Expansionary FP increases AD and via the multiplier process creates economic growth but conflicts with demand-pull inflation.

Antithesis: Such conflict with inflation may not occur if government combined with use of short-term and long-term supply-side policy that may lower SRAS and LRAS.
State of economy: If the economy is far below the equilibrium level of full employment level of income (such as a deep recession), the use of expansionary demand side policies may take a while to reach full employment level of national income,

Policy 2: Supply-side policy: Economic growth vs structural unemployment

For a country to have sustained growth, a government often adopt supply side policies to restructure the economy. Such policies will include tax incentives to attract high end foreign direct investment (free flow of capital), foreign talent (free flow of labour) and mechanisation. This will often result in structural unemployment.

Antithesis: Supply-side policy that provides complementary policies of retraining for local workers as well as calibrated foreign worker policy may not lead to such unemployment.

Nature of economy: Small and open economies are likely to pursue such supply-side policies as they need to attract FDI to increase potential growth. Changes in structural are also frequent given the nature of ever-changing globalisation trends. Larger economies may not have pressing needs to restructure hence the trade-offs may not be so evident.

State of economy: A country in recession usually will be more concerned with actual growth (increase in AD) and reducing unemployment (usually cyclical). Thus the trade-off may not be so significant. Whereas, a country facing full employment may want to increase the LRAS to achieve sustained economic growth since increasing actual growth may not be so easy in the SR. Hence it is more likely to embark on supply-side policy.

Time period: Structural unemployment is a long term process. Government may have sufficient time to respond by gradual planning the re-employment of workers affected in the restructuring.

Policy 3: Monetary Policy: Economic Growth vs BOP Equilibrium

With the use of lower interest rate results in higher economic growth, national income increases and that may lead to increase import expenditure. Thus it may lead to a decrease in BOP.

Antithesis: With lower interest rate, there will be hot money outflow resulting in exchange rate depreciation that may increase exports, resulting in an increase in BOP.
If a complementary expansionary fiscal policy with the lower taxes is undertaken, it may attract FDI that increases the financial account and BOP.

State of Economy: If economy is experiencing a recession or slow growth, any boost in national income may not result in a large increase in spending. This is due to the household pessimistic outlook of the economy. Households may instead opt to save rather than buy imports.

Nature of Economy: For a relatively large and closed economy, domestic stimulus would boost local businesses as domestic households buy goods and services from them. This is due to the fact that there are smaller leakages of imports as compared to small and open economies.

Conclusion – A well-reasoned judgment is expected focussing on the choice of policy for any government. Conflicts in macroeconomic objectives are not desired by any governments. Often good planning and execution of complementary policies can avoid such serious conflicts in the country.

Knowledge, Application, Understanding and Analysis	
For a well-balanced analysis that explained the government macroeconomic policy and further examines how their decisions when faced with trade-offs, could resolved by a complementary use of other policies. Other factors such as nature of the economy, state of the economy are also considered.	**15-21**
For an adequate explanation that examines how government's macroeconomic policy works. The answer have provides some trade-offs decisions are analyzed. Little mentioned of the use of other policies to complement the existing ones. Little or no mention of other factors that could be considered e.g. nature and state of economy.	**10-14**
For an answer that shows some knowledge of the use of various policies but insufficient elaboration on the trade-offs.	**1-9**

Allow up to 4 additional marks for Evaluation	
For an evaluative discussion that is based on economic analysis	**3-4**
For an unexplained judgement, or one that is not supported by economic analysis.	**1-2**

Question 6

Some countries like China use interest rates while others like Singapore choose exchange rates as their instrument for monetary policy.

(a) Explain how consumers, producers and government of a country could be affected by the appreciation of its own currency. [10]
(b) Discuss why governments use different instruments of monetary policy to control the rate of inflation. [15]

Part (a)

Requirements of the question
This part is not a question on Singapore, but general in nature. Candidates should examine the effects of **export and import prices** as well as some of its impact on the **macroeconomy**. This will in turn would affect the various economic agents favourably or adversely.

As a currency appreciates, this would lead to an increase in export price (P_x) in foreign currencies of its good. Assuming demand for exports is price elastic, it would lead to a decrease in export revenue (X) since quantity demanded will fall more than proportionate. Likewise, this would lead to a decrease in import price (P_M) of its good and services. Assuming demand for imports is price elastic, it would lead to an increase in import expenditure (M) as quantity demanded will rise more than proportionate. With exports revenue declining and imports increasing, balance of trade (BOT) and aggregate demand (AD) would decrease and it has a contractionary effect on the economy and increasing unemployment.

Consumer (households)

- With lower import price (P_M), they will consume more imported goods and services at lower prices. Consumer welfare will therefore improve.
- For example, the appreciation of the Chinese RMB over the decade has led to the Chinese being able to import Japanese cars at lower prices and go for holidays in Singapore or neighbouring countries in large numbers.
- As mentioned earlier, unemployment will increase due to the contractionary effect on the economy from the fall of net exports. This will affect the households which lose their income, and it will lower their material standard of living.

Producers

- At the same time, with higher exports prices, firms will become less export competitive compared to other countries producing close substitutes. This may lead to some of them closing down or even the demise of the industry. This may lead to the loss of comparative advantage of that industry. Some firms may choose to invest overseas to take advantage of lower foreign currency
- For example, a strong Japanese yen in the past had made its car manufacturer lost some of its advantage. Some of them turn to investing in Thailand took take advantage of the lower cost of labour and land, as well as relatively weaker Baht.

- But for a producers that require high amount of imports as factor inputs, an appreciation of its own currency will lower down its cost of production, which is favourable to lower down the price that it wants sell domestically or as exports.

Government

- The government would be concern about the indirect effects on its budget. With lower P_M the government is able to purchase goods and services at lower prices that saves on its expenditure. For example, if S$ appreciates, she is able to buy F16 jets for its national defence from America that could potentially save millions.
- If the appreciation leads to lower competitiveness of its firms, the government may spend more to provide unemployment benefits to its workers that are laid off. At the same time, it may also collect lower tax revenue from a contracting economy.

(Little credit given if students assume government will conduct expansionary policy and its accompanying impact on the government's budget. Separately, impact on four macro goals will not be accepted because they do not directly impact the government itself unless linked to government budget.)

Level	Descriptor	Marks
L3	Theoretical analysis of impact on imports and exports must be present. Discussion must cover all 3 parties with good economic analysis for at least 2 of the parties. No GLARING conceptual errors.	7-10
L2	Theoretical analysis of impact on imports and exports must be present. Discussion must cover at least 2 parties with good economic analysis for at least 1 of the parties OR 2 adequate explanations. No GLARING conceptual Errors	5-6
L1	Some attempt to answer the question with conceptual errors	1-4

Part (b)

Requirements of the question

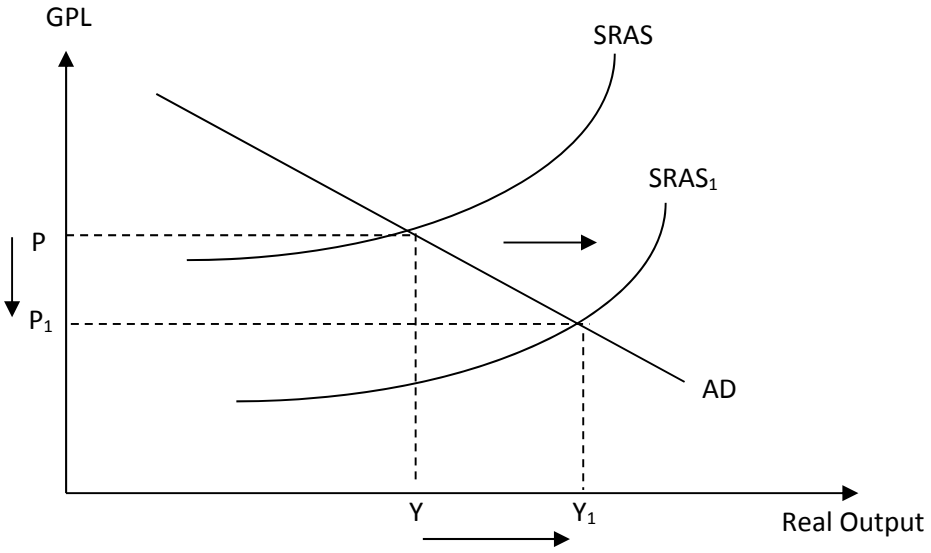
Candidates are to identify the main sources of inflation such as imported inflation and demand-pull inflation. In the traditional theory of monetary policy, the use of interest rate is often used to reduce inflation. However, in some limited cases (as in Singapore and Czech Republic), the use of exchange rate policy is preferred over interest policy. Candidates should examine how exchange rate policy as well as interest policy could be used to tackle inflation. More importantly, candidates need to demonstrate the factors and conditions why one instrument preferred is over another

Thesis 1: Exchange Rate Policy to contain imported-price push inflation (such as for Singapore)

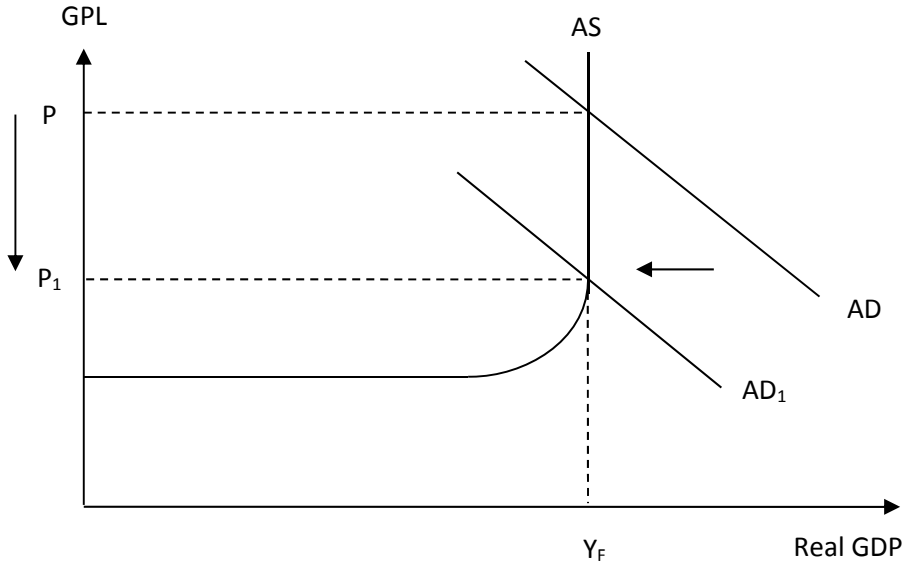
- Being a small and open economy, Singapore is particularly susceptible to import-price-push inflation. This is because Singapore has limited natural resources and is heavily reliant on imports of necessities, raw materials and semi-finished goods for consumption and production of goods for export. Imported inflation thus accounts for a significant portion of the overall inflation observed.
- As such, exchange rate appreciation is arguably the most important and effective policy instrument in managing inflation in Singapore. The Monetary Authority of Singapore (MAS) has had implemented a gradual modest appreciation policy of Singapore dollar since 1981. This policy has continued when external prices are volatile but can be temporarily adjusted (such as to zero appreciation) if the external prices are not threatening Singapore's imported inflation.
- Appreciation of S$ will make imports relatively cheaper in terms of domestic currency. Cheaper import prices will lower the cost of production for firms in general. This has the effect of shifting the SRAS to the right, leading to a reduction in price levels from P to P_1 and thus reducing inflationary pressures.

Evaluation:

Supply-side policy to reduce reliance on imports/obtain cheaper alternatives, as well as to increase productive capacity may be used to complement the exchange rate policy in combating inflation.



Furthermore, a strong S$ implies that our exports will be less price competitive, ceteris paribus, as exports now become more expensive in terms of foreign currencies. Assuming that the Marshall-Lerner condition holds, Singapore's balance of trade will worsen, resulting in slower economic growth. With a fall in net exports, AD will fall from AD to AD_1, GPL falls from P to P_1, relieving demand-pull inflationary pressures. This occurs even though the level of national income remains at the full employment of national income, Y_F.



Evaluation: As a small and open economy, much of Singapore's growth depends on external demand for Singapore's goods and services. A rise in X due to a pickup in demand from trade partners such as the US, Japan and the Eurozone (as was the case in 2013) will likely result in a sizable increase in AD, which could lead to demand-pull inflation.
The use of exchange rate appreciation is largely to address the imported inflation and to some extent, demand-pull inflation as it served as a basis of price stability for sustainable growth.

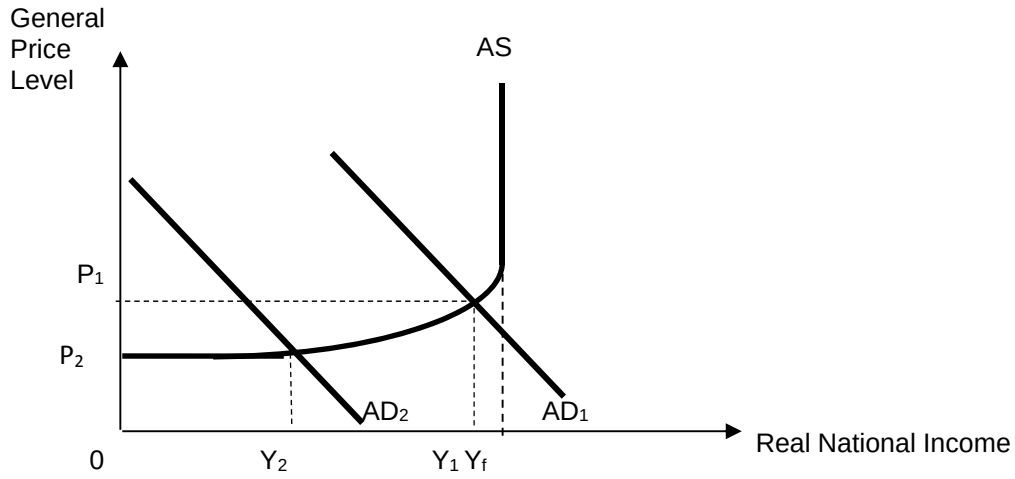
Separately, demand-pull inflation in Singapore can also be due to higher demand from property and cars/COEs. If so, macroprudential policies such as curbing bank loans may be more appropriate.

Thesis 2: Interest Rate Policy to contain demand-pull inflation (such as for China)

- The main source inflation in large economies like China is demand pull inflation due to its large domestic C and I
- Higher interest rates help keep cost of borrowing high for consumers who purchase durable goods or big-ticketed items, discouraging consumption. At the same time, higher cost of borrowing also decreases the expected rate of returns from private investment (MEI < r) and discourages investment by firms.

- Besides, if interest rates set by the Central Bank are relatively higher than that of other countries, short-term capital inflow results even as investors search for higher interest rates. This would result in in appreciation, which leads to net exports to fall.
- Thus a fall in consumption, investment and net exports reduce AD from AD_1 to AD_2. This result in unplanned increase in stocks, causing production levels to fall as firms employ fewer factor inputs.
- Through the multiplier effect, national income increases from Y_1 to Y_2, but more importantly, reduced the General Price Level to fall from P_1 to P_2

Figure 1: Effect of Contractionary demand management policy



Evaluation:

Consumer & Investor Optimism: Given the economic boom is still felt by the Chinese consumers and producers, it is likely that consumer and investor optimism will persist. This implies that despite a higher interest rates by the Central Bank of China adopting contractionary interest rate policy, consumers and investors will be continue to borrow. Thus in such a buoyant economic environment, firms and consumers may not reduce investments and spending respectively.

Comparison of both instruments – Why interest rate policy cannot be used in countries like Singapore.

(a) Small capital market and Openness to Capital Flows making it difficult in controlling interest rate

- Singapore's role as an international financial centre means that small changes in the difference between domestic and foreign interest rates result in large and quick movement of capital flow, making it difficult to target interest rate in Singapore.
- Assume that Singapore government increases interest rate to rein in demand-pull inflation.
- This rise in interest rate, assuming it is significantly higher than interest rate of big or large economies like the US will result in **short-term capital inflow (i.e. hot money)** as Singapore is a **small and open economy with no capital control.** This will mean, foreign investors e.g. US investors will sell their own currency (i.e. USD) and buy S$ to save with Singapore banks. Banks in Singapore will now have more cash or liquidity to create bank credit or loans. Thus, the supply of bank credit will rise, causing interest rate to fall, until the domestic interest rate equalises or is on par with global interest rates. At this point, there is no more incentive for foreigners to transfer their funds to Singapore since interest rates are identical or on par.
- Thus, it is not possible for the Singapore to set interest rate independently from the rest of the world.
- As a small and open economy, the MAS cannot control interest rate in Singapore and thus it is said to be a interest rate taker. In practice, interest rate in Singapore generally follows interest rate of big economies like that of the US.
- Conversely, large economies like China are better able to withstand more capital flows, or they may practise capital control, and hence are not interest rate takers.

(b) Controlling interest rate will make exchange rate very volatile and will have adverse impact on trade.

- Adjusting interest rate will subject our exchange rate to volatility which in turn affects investors' confidence and thus may affect our trade volume adversely.
- As mentioned above, a change in interest rate will result in short-term capital flows. This will have adverse impact on our exchange rate.
- E.g. a fall in interest rate that attracts huge capital outflow will mean a rise in supply of S$ causing our exchange rate to depreciate. Similarly, a rise in interest rate will attract huge capital inflow causing demand for our currency to rise, strengthening S$.

- If interest rate is often adjusted, our exchange rate will be very volatile and this is very detrimental to Singapore as we are an export-driven country and we are also heavily dependent on imports for survival and raw material.

Conclusion:
The appropriateness of the monetary policy instruments for a country depends on the nature and openness of the economy of a country. Usually economies may choose interest rate policy if they have sizeable domestic economy and less open to financial flow. Countries like Singapore which is prone to imported inflation and has a large financial sector would prefer to use the exchange rate. Other sources of inflation such as wage push inflation would require policies other than monetary ones.

Level	**Mark**	**Descriptor**
L3	9-11	Well-elaborated answer with diagram(s) to explain the use of instruments to reduce inflation and a strong rationale on how the factors/conditions, i.e. nature of economy and the main cause of inflation, play the role to choose the instrument.
L2	5-8	Answer shows adequate understanding of both instruments of monetary policies and some but underdeveloped attempt at analysing the factors/conditions, i.e nature of economy and the main cause of inflation, to determine the choice of instrument.
L1	1-4	Answer shows some understanding of both instruments of monetary policies but little or no attempt at analysing the factors/conditions to determine the choice of instrument.
Evaluation		
E2	3-4	Reasoned judgment on the use of the policies to tackle inflation.
E1	1-2	Evidence of some evaluation.