

RVHS 2018 Y6 H2 Prelim II Essay Q1 (Section A)

When adverse weather in Malaysia led to a dramatic fall in the production of vegetables for export, this led to a rise in the price of fresh vegetables in Singapore. This will affect different types of firms -- vegetables farmers in Malaysia as well as supermarkets and hawker stalls in Singapore.

Explain why different types of firm came to differing decisions about the increase in the price of vegetables or vegetable-based products, and discuss how their revenue would be affected. [25]

Suggested Mark Scheme

(a)	Knowledge, Application/ Understanding and Analysis	
L3	Developed explanation of: (i) Why different types of firms make different pricing decisions [must consider <u>three</u> types from the following: M'sia farmer (\approx PC firm), Large supermarket in Sg (\approx Oli), Hawker stalls (\approx MC firm)] (ii) How TR is affected 'Developed' – Uses economic analysis involving PED (with relevant determinants to justify), features of market structures affecting firm's pricing decision	15-20 (18)
L2	Undeveloped explanation of pricing decision made by at least two types of firms & impact on TR OR Developed explanation made by one type of firm & impact on TR 'Undeveloped' – Descriptive, superficial reference to features of market structures without linking to pricing decisions and TR appropriately	9-14 (12)
L1	Smattering of valid points i.e. some knowledge of factors that might affect pricing decisions and how elasticity can affect TR	1-8 (5)

E3	Arrives at an analytically well-reasoned judgement about the key factors that determine the extent of price increases	4-5
E2	Makes some attempt at a judgement about possible factors that determine the extent of price increases	2-3
E1	Unsupported statement about possible factors that affect price increases	1

Suggested points:

- ① Adverse weather in M'sia \rightarrow \downarrow SS of fresh vegetables \rightarrow \uparrow P \rightarrow \downarrow Qd
- ② \uparrow P of fresh vegetables \rightarrow \uparrow COP of veg-based products \rightarrow \downarrow SS \rightarrow \uparrow P \rightarrow \downarrow Qd
- Extent of Δ P and Δ Qd depends on PED and also mkt structure i.e. mkt which a firm operates in
- Essay considers different pricing decisions by:
 - Vegetable farmers in M'sia;
 - Large supermkst in Sg;
 - Hawker stalls in Sg

(I) M'sia vegetable farmer

Pricing decision:

- M'sia farmers as a whole operate in an industry which **approximates perfect competition** \rightarrow each firm produce an insignificant mkt share + homogeneous product (veg)
- \rightarrow likely takes the mkt price as determined \rightarrow price setting decision based on this

Impact on TR:

- \downarrow SS of fresh vegetables \rightarrow \uparrow P \rightarrow \downarrow Qd
- Extent of \downarrow Qd depends on their PED
- As Sg supermkts/ hawker stalls may also have some stockpiles from previous months
- \rightarrow PED likely $> 1 \rightarrow$ Qd \downarrow more than proportionately \rightarrow TR \downarrow for M'sia farmers
- **EV:** In short run, perhaps PED may be < 1 as alternative suppliers of vegetables may not have been found OR contractual agreements prevent any changes in P
- If so, then M'sia farmers may enjoy \uparrow TR received

(II) Large supermkts in Sg

Pricing decision:

- \uparrow P of fresh veg \rightarrow Direct \uparrow P + Indirect \uparrow P of veg-based products
- Large supermkts in Sg (e.g. FairPrice/ Cold Storage) operate like an **oligopoly**, given few dominant firms, each selling differentiated products
- Kinked demand curve theory to explain why price will not increase unless it is excessive. With that TR is unchanged.
- **EV:** Nonetheless, large supermkts tend to have substantial '*buying*' powers too! Given that they are the only few firms who buy fresh veg from M'sia suppliers or veg based products from suppliers
- Better able to negotiate for good P/ veg at good rates
- \rightarrow Able to limit the rise in price of veg + veg based products from suppliers
- \rightarrow Decision on what P to charge (whether it will \uparrow or \downarrow) is based on competitors' actions, and perhaps their own costs/ revenue

Impact on TR:

- For veg + some veg-based products \rightarrow these are generally regarded as food with few close substitutes (i.e. necessity/ food items needed for daily consumption)
- PED likely $< 1 \rightarrow$ \uparrow P \rightarrow \downarrow Qd less than proportionately \rightarrow TR \uparrow for large supermkts in Sg
- **EV:** If supermkts compete aggressively based on P, then they may absorb more of the P rise instead OR they may hold their prices. If so, then TR may not necessarily \uparrow

(III) Hawker stall in Sg

Pricing decision:

- $\uparrow P$ of fresh vegetables $\rightarrow \uparrow COP$ of veg-based products $\rightarrow \downarrow SS \rightarrow \uparrow P$
 - Hawker stalls in Sg operate in monopolistic competition, each stall producing an insignificant share of the mkt, while selling slightly differentiated products
 - While each firm can decide on P to charge, they need to be mindful that the DD for their products is likely to be relatively price elastic ($PED > 1$) due to availability of many close substitutes
- ➔ Limited scope to $\uparrow P$, despite rising cost

Impact on TR:

- Since PED likely > 1 for a specific category of hawker food which offers veg + veg-based products
- ➔ $\uparrow P \rightarrow \downarrow Q_d$ more than proportionately $\rightarrow TR \downarrow$ for affected hawker stalls in Sg (unless they have prior stocks of veg to fall back on)
- **EV:** Stalls which do not use veg as an ingredient will not be affected
- If costs \uparrow but they cannot $\uparrow P \rightarrow$ may suffer short term losses since TR is insufficient to cover TC

Essay Q2 (Section A)

Product markets in Singapore face differing levels of contestability.

(a) Explain why some product markets in Singapore exhibit higher levels of contestability than others. [10]

Suggested Answer

Contestable markets are markets in which there are only a few firms (typically the oligopolies and monopolies) but, because of the threat of potential entrants, behave in a competitive manner. Oligopolies are characterised by a few dominant firms in the market selling either homogeneous or differentiated products while monopolies are characterised by one firm selling a unique product with no close substitutes in the market. Some markets exhibit higher levels of contestability i.e. face higher threat of competition because of some conditions exist that make the market more contestable.

Easier access to technology in certain industries have made them more contestable than others. In the case of the sharing economy, disruptive technologies arising from advancement in functions of smart devices such as smartphone applications, Global Positioning Systems (GPS) have made sharing of information and assets cheaper in the taxi industry. This has allowed firms like Grab and Ryde to enter the oligopolistic taxi industry (with existing dominant firms e.g. Comfort Delgro and SMRT) which were previously less contestable unless new entrants have the financial resources to obtain the physical resources required to set up the business.

Lower sunk cost in certain industries have made them more contestable than others. Sunk costs refer to costs that have already been incurred by the firms and cannot be recovered even if the firms choose to leave the industry. The amount of sunk costs affects a firm's decision to enter the industry. In the distribution of water, electricity and rail transport industry where sunk costs are high, such industries usually exhibit lower levels of contestability since they act as substantially high barrier. Potential entrants need sufficient resources to cover the high start-up capital and also risk making huge losses if they decide to leave a market prematurely. For e.g. in the water and electricity industry, high sunk cost is incurred to lay power grids and water pipelines through households thus making these industries are less contestable.

Lastly, nature of BTE which are relatively easier to circumvent in certain industries have made them more contestable than others. Generally, barriers to entry which are protected by law or granted by the government e.g. patents, licenses etc are the hardest to overcome. This is evident in the issuance of licenses by the government to regulate how and which firms can operate in markets. Such licenses act as a barrier to enter the industries, significantly reducing contestability unless it is the government herself who implement changes to how restrictive the BTEs are.

In conclusion, some product markets in Singapore exhibit higher levels of contestability than others because of the differences in the ease of entry and exit in the industry.

	Knowledge, Application / Understanding and Analysis	
L3	For an answer that uses analysis to explain contestable markets with appropriate examples and all three features must be explained to enter Level 3.	8-10
L2	A descriptive explanation of contestable markets and the underlying features.	5-7
L1	Knowledge of what is meant by a contestable market and/or the underlying features.	1-4

(b) Firms make different price and output decisions depending on the threat of competition they face. Discuss how firms' decisions under differing levels of contestability will affect other economic agents. [15]

Firms under different market structures usually behave differently in terms of their pricing and output decisions due to different characteristics. When faced with differing levels of contestability, which is the level of ease of entry into the industry, firms will again adjust their economic decisions which will affect economic agents like consumers and the government differently. To measure the impact on consumers, we will be looking at the level of prices, choice and equity when there are different levels of contestability and we will use the level of efficiency to measure the impact on the government and society in general. In general, when faced with high levels of contestability, the firms, which used to behave like oligopolists or monopolists and tend to enjoy high barriers to entry, will now have to behave as if the market is highly competitive. In contrast, when there is lower contestability, these market dominant firms will make decisions that will boost the profits of the firms and the consumers might lose out more. In the latter case, the government may have to do more to bring about socially optimal outcomes.

In a situation where there is higher level of contestability, firms inevitably are forced to charge more competitive prices to deter the entry of potential entrants and to retain their market share as much as possible. At this more competitive price, profits will not be excessively high and the consumers will therefore enjoy lower prices, ensuring a more equitable distribution of the profits. In contrast, firms which are enjoying a lower threat of competition may see less need to ensure their prices are competitive. This is because when the market dominant firm charges a high price, the consumers can't easily switch over to any other ready-made and available alternative.

At the more competitive price that firms facing higher levels of contestability will charge, it is likely that the extent of the gap between price and marginal cost is smaller and the output produced will also likely to be closer to the socially optimum level. For example, when the Singapore government reduced the duration of the rail transport operating license, the prices of rail travel becomes more competitive and the quality of the service improved as well, with less breakdowns and the frequency of the train services was also shortened, significantly improving the consumer welfare. In the case of bus services, the Singapore government has implemented the bus contracting model where government controlled the assets like buses and depots, entry of foreign bus companies like Tower Transit and Go Ahead have also resulted in competitive bus fares for the consumers and more choices for them too.

The quality of the bus rides have also improved significantly amongst the existing bus operators of SMRT and SBS Transit since the threat of competition is increased by Land Transport Authority. LTA also need not intervene too much to bring about allocative efficiency and they can then channel resources to other areas instead like road improvement etc. In contrast, firms facing lower threat of competition will be more likely to charge a higher price and the problem of under-production will be greater, resulting a bigger deadweight loss to the society.

Government will therefore consider imposing pricing regulations like Marginal or Average Cost pricing to achieve a more socially optimal outcome.

In terms of dynamic efficiency, the larger amount of profits that oligopolists and monopolists earn usually provide them the financial ability to innovate and do research and development but they lack the incentives to do so since they are already earning supernormal profits and can keep them even into the long run due to strong barriers to entry. With increasing contestability, firms will be more pressured to be dynamic efficient and devote more efforts to engage in product development so that the demand for their products can be less price elastic, with less substitutability with the potential competitors, building up stronger barriers to entry.

For consumers, they will benefit from better quality products and greater variety. For example, when the telecommunications industry was injected with more contestability in Singapore, the consumers benefitted from more stable connections and faster 4G network as existing operators like Singtel and Starhub put in more efforts to develop their services. The government also benefitted by having to pump in less money towards the development of the relevant industry as the private sector will have the impetus to innovate for better services. In this instance, the Singapore government need not pump in investments towards the development of better 5G network as the privately owned telcos have been doing it as they seek to outdo the potential threats. These investments and research will also increase the productive capacity of the country and bring about sustained economic growth at the macro level.

In contrast, firms enjoying lower threat of competition may be more complacent and feel less impetus to engage in research and development to improve their products. In this case, the consumers will lose out with stagnated products in terms of quality and functionality. The government will have to weigh costs and benefits carefully before deciding whether to intervene to make market dominant firms improve their dynamic efficiency. Lastly, firms facing higher threat of contestability will be likely to be productive efficient. They will seek methods to be cost efficient and productive so that they can cut down on the average costs incurred.

Consumers will benefit when these firms pass down the cost savings to the consumers in terms of lower prices **but firms may also choose to keep the profits and issue them to the shareholders instead.** In contrast, firms enjoying lower threat of competition will likely be less productive efficient although they are capable of doing so, as they will be likely to be complacent and start to mismanage their costs. Government will then need to impose some forms of checking mechanism to ensure minimal wastage of resources in the economy.

L3	For an answer that uses appropriate analysis to explain how firms' decisions in terms of price, output, cost control and product differentiation might change when there are differing levels of contestability, thereby affecting economic agents.	8-10
L2	For an answer that gives a descriptive explanation of how firms' decisions in terms of price, output, cost control and product differentiation might change when the level of contestability is different.	4-7
L1	For an answer that shows knowledge of different economic situations that might be resulted due to differing levels of contestability, but the impact on economic agents is unclear.	1-3

E3	For an answer that arrives at an analytically well-reasoned judgement about whether the economic agents will be affected in a positive or negative way due to differing levels of contestability in firms.	4-5
E2	For an answer that makes some attempt at a judgement about whether the economic agents will be affected in any way due to differing levels of contestability in firms.	2-3
E1	For an answer that gives an unsupported statement about whether the economic agents will be affected due to differing levels of contestability in firms.	1

Essay Q3 (Section A)

Good quality information is necessary when making decisions about which products to buy and who to sell the products to.

- (a) Explain how the lack of good quality information by consumers and producers could lead to market failure. [10]
- (b) Discuss whether the government is the best economic agent to solve the above-mentioned market failure. [15]

Suggested Mark Scheme

(a)	Knowledge, Application/ Understanding and Analysis	
L3	Developed explanation of why markets fail for <u>both</u> cases ($\approx 5m$ per case) i.e. (i) when consumers lack good quality info (ii) when producers lack good quality info (should be linked to adverse selection) 'Developed' – Uses appropriate economic analysis & real world e.g. to illustrate imperfect info, with explicit reference to how it leads to inefficient resource allocation	8-10
L2	Undeveloped explanation of why markets fail when consumers & producers lack good quality info 'Undeveloped' – Descriptive, superficial reference to imperfect info and how it leads to inefficient resource allocation	5-7
L1	Smattering of valid points <i>*Contexts such as smoking/ gambling/ education are at best linked to case (i). Thus, if students write about these only, the max is $\approx 4/5mk$.</i>	1-4

(b)	Knowledge, Application/ Understanding and Analysis	
L3	Developed discussion of a range of measures and how they address imperfect info. Measures shd include: (i) ≈ 2 policies undertaken by the govt (Thesis) (ii) ≈ 2 limitations of govt intervention (Anti-thesis) (iii) ≈ 1 policy undertaken by consumers OR producers (Anti-thesis) 'Developed' – Uses appropriate economic analysis (& real world e.g. if poss.) to explain how measures work <u>and</u> their limitations	8-10

L2	Undeveloped discussion OR developed explanation for one side (either thesis or anti-thesis) 'Undeveloped' – Descriptive explanation of how the measures address imperfect info	5-7
L1	Smattering of valid points	1-4

E3	Arrives at an analytically well-reasoned judgement about the use of a policy mix comprising of government intervention and existing measures adopted by consumers/ producers as the best solution i.e. no 'best' economic agent but all agents play a part.	4-5
E2	Makes some attempt at a judgement about why the govt may not be the best economic agent to solve market failure	2-3
E1	Unsupported statement about why govt intervention alone is insufficient	1

Part (a)

[Case (i) – When consumers lack good quality information]

- Consumers often lack good quality information when buying technically complex products such as electronic devices, financial/ insurance products or deciding between various types of medical tests/ treatments.
- Consumers need perfect info in order to make efficient choices. In the case of technically complex products, consumers may find it difficult to understand the information
- Asymmetric info may exist in this case as the producer will invariably know more about the product than the consumer.
- In this case, it is difficult to estimate the private marginal benefits and/ or the private marginal cost of a product and hence decide on the appropriate quantity of the product to buy.
- Referring to Figure 1, suppose the market output occurs at Q_M , where marginal private cost (MPC) = misperceived MPB. However, the socially optimal output is Q_S , where marginal social cost (MSC) = marginal social benefit (MSB). Since $Q_M > Q_S$, there is overconsumption of the good. This means, the consumer may be buying more OR buying a technically complex product such as laptop with functions over and above what is really needed by him.
- Market failure occurs because too much resources are channeled to the production of such goods/ services. Deadweight loss incurred is represented by the area ABC.

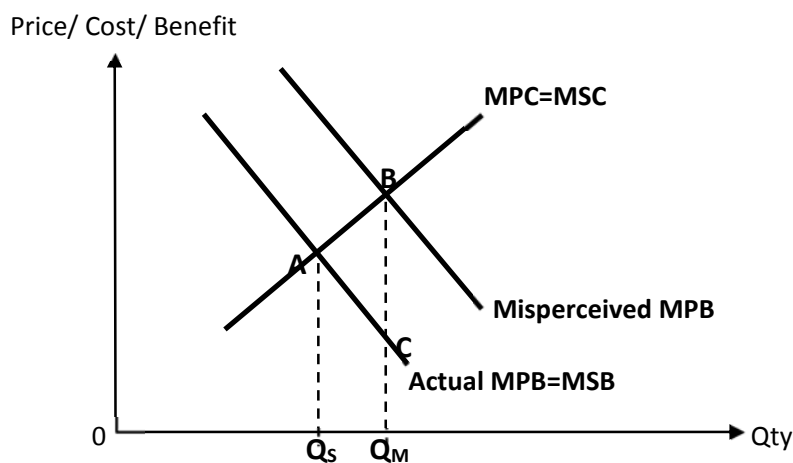


Figure 1

[Case (ii) – When producers lack good quality information]

- Markets can also fail when producers lack good quality information. Specifically, if producers lack information about the various consumers whom they might possibly sell their products to, this may lead producers to end up selling their products to the wrong group of consumers.
- Explain with reference to e.g of market for health insurance
- Consumers may withhold key information about their health conditions and not tell it truthfully to the insurance company
- This leads to the situation of adverse selection where only the high-risk people will want to buy insurance
- Market failure thus occurs

Part (b)

Thesis: Explain why the govt is a good economic agent to solve market failure arising from imperfect info

Govt legislation – Sellers required by law to disclose information about their products

- Applies for markets which have financial advisors, car dealers, medical professionals etc.
- Need to explain to potential clients/ patients about the products, services, treatments etc.,
- Such compulsory disclosure of information aids consumers in more accurately estimating the MPB of buying a good/ service/ undergoing certain medical tests

Alternatively:

- 'Lemon Laws' → A seller of a defective product must repair, replace, refund or reduce the price of the defective product (subject to certain conditions) sold to a consumer.
- Students to quote some real world e.g. of how the above works

Public education programmes/ campaigns

- Educate buyers and reduce info gaps
- Provide some e.g. of public campaigns which help consumers learn more about either technically complex products or even apparently simple products such as canned drinks or ready meals

Anti-thesis: Explain why the govt may NOT be the best economic agent to solve market failure

- Provide at least 2 limitations of govt intervention e.g.,

Substantial cost

- Incurred in the course of monitoring and enforcing compliance
- much time and resources are needed to ascertain the accuracy of information

Insufficient impact of public education programmes

- Even if consumers go through such programmes, it does not guarantee that they can understand everything about the product
- Sometimes, there may still be lapses or time is needed before they can understand and make sense of it fully

Govt Failure

- time lags resulting from red tape and bureaucracy suggest that government intervention may sometimes cause greater inefficiencies

Anti-thesis: Explain how other economic agents have adopted ways to tackle the market failure

Provide at least 1 method which other economic agents e.g. consumers or producers can adopt. E.g.

Producers require consumers to declare certain info about themselves

- Insurance companies require potential clients to go for a full body medical checkup or physical body examination before they decide whether to sell the policy or how much to cover the person for
- Purpose of doing this is to make the informed party reveal more information to the less informed party. If successful, this reduces the extent of market failure

Essay Q4 (Section B)

Essay Q4 (Section B)

British technology company Dyson opened its new research and development centre in Singapore bringing its total investment in the country to \$587 million. This centre aims to support its production facilities focused on advanced manufacturing, software development and robotics. The decision on its location was partly due to a skills shortage in Britain.

Source: Economic Development Board of Singapore

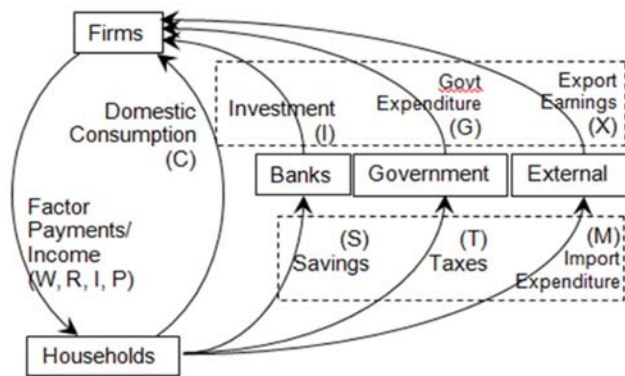
(a) Using the concept of the circular flow, explain the direct and indirect impact of investment on the equilibrium level of national income. [10]

(b) Assess the policy options open to the Singapore government for influencing the level of investment in its economy. [15]

(a)

The circular flow of income is a representation of how money is circulated in an economy as income and expenditure and it involves all 4 sectors of the economy, namely, households, firms, government and the foreigners.

Firms purchase factors of production from households to produce goods and services. Thus, there is a flow of factor services from households to firms, and flow of goods and services from firms to households. As such, with reference to the figure below, the money received by these firms will in turn be paid to the households as factor income in the form of wages, rent, interest and profit. And in turn, with the income of households, they will pay for consumption expenditure to firms when they consume goods and services produced by them. The rest of the income of households will be given to the financial intermediaries, the government and the foreigners in the form of savings, taxes and import expenditure respectively. These are known as withdrawals.



On the other hand, besides receiving payments from the households for the goods and services they produced, firms also receive payments from the government, the foreigners and other firms in the form of government expenditure, export earnings and investment expenditure. These expenditure, other than that by the households, are known as injections.

When the total injections are equal to total withdrawals ($W=J$), the level of national income (NY) is said to be in equilibrium.

Investments is a component of aggregate demand (AD) and is the expenditure on the production of goods not meant for current consumption. It can be in the form of fixed capital formation (such as better technology machines and plants) and aims to increase future production capabilities. With an initial increase in investment, the equilibrium level of national income will have increased multiple times.

Take an increase in investments of \$1000 million for example, assuming its MPC is 0.6 and there is excess capacity in the economy. Initially, there will be an increase in national income by \$1000 million. This increase in national income in period 1 is enjoyed by firms who are involved in the manufacturing of these investments goods and a payout equivalent of \$1000m is given to households due to increased hiring of workers. Out of this increase in income of \$1000million, households will spend part of it, which is \$600million, on consumption and the rest will go to saving, taxes and imports. This increase in consumption will encourage firms to produce more in period 2, thus generating more factor income of \$600million for the households. Like in period 2, out of this further increase in income of \$600million, households will spend part of it, which is \$360million, on consumption in period 3. The remaining will go to savings, taxes and imports. Thus this process of increase in consumption and increase in output and income will continue until there is no more additional spending on consumption and hence income. And the whole process by then would have increased the national income by a total of \$2500 m that is 2.5 times the initial increase in investment given that $K= 1/1-mpc$.

Hence overall, increasing investments results in direct increase in the equilibrium level of national income due to autonomous increase in investment, while another indirect increase in national income via the multiplier arises due to the induced increases in consumption.

Mark scheme

L3	For an answer using the circular flow diagram and multiplier to explain the direct and indirect impact of investments on the level of equilibrium national income	8-10
L2	For an answer that gives a descriptive explanation of the circular flow diagram and multiplier to explain the direct and indirect impact of investments on the level of equilibrium national income. Or For an answer using the circular flow diagram to explain the direct and indirect impact of investments on the level of equilibrium national income.	4-7
L1	For an answer that shows some basic but largely unexplained knowledge of the impact of investments on the level of equilibrium national income.	1-3

(b) Assess the policy options open to the Singapore government for influencing the level of investment in its economy. [15]

There are three main types of investment, namely foreign direct investment, fixed capital investment and investment in human capital. All three types of investments are prevalent and important to Singapore to ensure sustained economic growth. The policy options open to the Singapore government for influencing the level of investment in its economy are mainly supply side, trade and exchange rate policies.

To boost all 3 types of investments in Singapore, supply-side policies are often used. These policies are geared towards improving supply-side factors for long term growth by aiming to increase the quantity and quality of resources. In fact, different supply-side policies (market oriented and interventionist approach) can be used to stimulate the different types of investment.

A market oriented supply side policy that the Singapore government has adopted to boost investments is the implementation of a lowered corporate tax at 17%. The lowering of corporate tax rates can work on the supply-side to effectively encourage FDI and fixed capital investment. Human capital investments may increase due to lowered tax rates as well. After factoring in deductible expenses, capital allowances, Singapore's marginal effective tax rate is only at 9.3%. Relative to other countries, her corporate tax is lower. In fact, with this low corporate tax rates, Singapore is also now one of the countries that have the highest per capita FDI. As such, firms are more inclined to invest in Singapore as they will enjoy higher after-tax profits. This increases FDI into the country. In addition, one of the reasons for lowered corporate tax rates is with the intent to leave more funds available to firms for investment and to pursue innovation through more R&D. Hence, the higher after tax profit will incentivize firms to invest more on fixed capital goods, as they now have larger funds. This increases the fixed capital investments as well. Firms may also decide to increase the quality of their human capital for higher productivity in the long run. The larger availability of funds will encourage firms to increase investment in training and upgrading of skillset of their workers.

Besides lowering of corporate tax, Singapore has also adopted a relatively low personal income tax to boost foreign talents to work in Singapore, this further helps attract the FDIs with a quality skilled workforce.

However, the success of lowering its corporate and personal income tax rates to boost investments is also dependent on several other factors. If Singapore has weak Intellectual Property (IP) regulations, foreign firms will be less inclined to invest in our country even if the corporate tax is low. Reducing corporate tax may also result in firms paying higher dividends rather than undertaking more investment. Furthermore, labour cost and small size of Singapore's domestic market are also major factors that are considered by direct investors. Singapore's corporate tax is low, however due to its standard of living and literacy rate of the country, it affects the pay commanded. As a result, its labour costs are considered high compared to its neighbouring countries. With recent rising utilities prices and operating costs, it may not help in being an attractive destination for FDI as well. Finally, Singapore's corporate and income tax are already generally very low compared to others. There is also little room for further downward revision to have a significant impact.

As such, with the numerous factors which will influence investments as well, it is important for Singapore to find other ways besides the use of low corporate tax, to lower the operating costs of FDI to remain attractive. Some ways which we have tried to do so are through the adoption of interventionist supply side policies to increase labour productivity. This will mitigate the concern from high labour costs and also attract FDI with a more productive workforce. These help to ensure a steady flow of investments despite higher operating costs. We will further explain how it is done in the next point of the essay. Similarly, we have also increased the quality of infrastructure to boost efficiency. Hence, to boost investments in the area of FDIs, the lowering of corporate tax rate must be accompanied with other supply-side policies to attract them into Singapore.

As mentioned earlier, to increase labour productivity, Singapore has participated in supply side policies in giving numerous grants and subsidies to help increase the level of human capital investment. These supply-side policies will help to increase the level of education, expertise and skills of the labour force. Scholarships, subsidies and grants are examples of monetary incentives to encourage this. Apart from this, the government can give tax rebates to firms that send its workers for training and as mentioned earlier, lower income taxes to attract foreign talent to migrate into the country. In Singapore, under the Workfare Training Scheme (WTS), low skilled workers will be subsidized by up to 95% as well as receive cash allowances when they go for upgrading courses while employers who send their workers for training will also get a subsidy of up to 95% of their employee's wages. These will encourage companies to invest in their human capital and might possibly draw foreign investors as are attracted to a better skilled workforce.

Although the above policies do help to encourage the investment of human capital, they are not without limitations. Firstly, policies such as training/ skills upgrading often involve huge sums of money and usually take a long time before any positive effect can be seen. This may also have to be funded through higher taxes or the reduction of spending in other areas such as healthcare. Even so, their success is often not guaranteed. This is because, most low-skilled workers tend to work long and irregular hours and do not have the time nor incentive to go for training while employers' attitudes towards training is usually lukewarm, thereby resulting in a low take-up rate. Also, if the new jobs available require skills that are too far-off from workers' current skill level, it will not be easy to upgrade or retrain them to be competent enough for the jobs. Hence the policies adopted to push on for further investments in human capital may not be strong and convincing enough to take on.

Although the high cost of these government expenditures to boost human and fixed capital investments might not be of a real concern to Singapore yet as we have healthy government budget surpluses over the years, however, there is also a concern of the abuse of funds for its real intent and effectiveness of these policies. For example, over the years, there were many cases of abuse in the use of the PIC funds. Besides that, their effectiveness in boosting investment and productivity is unclear. For an example, currently, there are still no clear data on the effectiveness in boosting productivity for

Singapore since the introduction of the PIC funds. Probably due to these considerations, by the end of 2018, PIC funds will be discontinued.

Overall, whether these supply side policies open to Singapore are effective in influencing the level of investment is also largely dependent on the economic outlook. A bleak global economic outlook may convince firms to save more and hold back from investing overseas or domestically. The recent ongoing Eurozone crisis and trade war between China and US, have caused FDI around the world to fall this year. Similarly, firms might be inclined to cut back on spending and purchase less fixed capital goods due to the uncertain economic climate. Having said, the policies adopted by Singapore may not influence the investment in a way as desired. As mentioned recently by the Singapore's prime minister, these inwards events from our trading partners is an impact that should be reckoned with. This is even more so for an open, import and investment reliant like Singapore. We may be easily affected. Hence to ensure a steady flow of FDI and capital investments, Singapore is constantly looking out for opportunities to sign more FTA to decrease the incidence of trading partners imposing tariffs on our exports, making Singapore still an attractive place for investments despite global uncertainty due to trade wars. FTA will also helps to attract FDI as it allows them to reach out to a larger market based with higher potential revenue earned if they were to invest in Singapore.

Singapore has also adopted exchange rate policy to influence the level of investments in Singapore. Price stability is one of the key factors that determines investor's decision to invest. As Singapore does not have natural resources and depends heavily on imported resources, it has tried to adopt an appreciation stance to help lower the real price of imported resources. This will translate to a lower cost of production in Singapore and also ensures its price stability. With a more stable price, it will help firms gauge their profits and returns better if it were to invest in Singapore. This helps to influence and attract foreign direct investments in Singapore.

Yet, an unintended consequence of this is that not all industries like healthcare and financial services are reliant on imports. Hence, it is important to note and control how much we should appreciate our currency to still preserve our service industries while attracting FDI.

Ultimately, the success of these policies on influencing the level of investment in Singapore also hinges on the objectives of our government. In light of countries' increasing vulnerability to external factors/shocks, some countries like China are increasingly trying to reduce their dependence on FDI and are focusing on boosting their domestic consumption and investment. In this case, less priority might be given to supply-side policies that stimulate FDI and more attention is given in trying to implement policies to stimulate domestic investment instead. However, in the case of Singapore, with no natural resources and being an open economy, we have to give priority to boosting all three types of investments as they are all mutually interdependent to help one another bring about economic growth. And so, the policy options to influence investments will be quite varied in nature and usually a policy mix implemented at the same time. An example, a lower corporate tax has to be complemented with an interventionist policies like training to attract more FDI. Due to our openness of economy, besides supply side policies, other policies such as exchange rate should also be implemented to maintain price stability to boost FDI.

Mark Scheme

L3	For an answer that uses appropriate policies to analyse their influence on the 3 types of investments- foreign direct investment, fixed capital investment and investment in human capital in Singapore.	8-10
L2	For an answer that gives a descriptive explanation of the policies used to influence the 3 types of investments- foreign direct investment, fixed capital investment and investment in human capital in Singapore. Or For an answer that uses appropriate policies to analyse their influence on either 2 types of investments- foreign direct investment/ fixed capital investment/ investment in human capital in Singapore.	4-7
L1	For an answer that shows some knowledge of the policies used to influence investments in Singapore.	1-3

E3	For an answer that uses analysis to support an evaluative appraisal of the impact of the policies used to influence the different types of investments in Singapore.	4-5
E2	For an answer that makes some attempt at an evaluative appraisal of the impact of the policies used to influence the different types of investments in Singapore.	2-3
E1	For an answer that gives an unsupported concluding statement or appraisal about the the impact of the policies used to influence the different types of investments in Singapore.	1

Essay Q5 (Section B)

Explain the factors that a central bank should consider when implementing monetary policy centred on interest rates and discuss whether such a policy necessarily improves the standard of living. [25]

Suggested answer

<Introduction>:

Most governments aim to achieve the following macroeconomic aims: price stability, full employment, sustainable economic growth as well as a favourable balance of payments position. To achieve these aims, the government may put in place expansionary or contractionary monetary policy to regulate aggregate demand through the change in money supply or interest rate. In deciding to change interest rates, there are several factors that a central bank could have considered such as effectiveness of monetary tools in controlling money supply, interest elasticity of the Marginal Efficiency of Investment (MEI) curve, time lags, policy conflicts, expectations of the economy and nature of the economy.

One of the factors that a central bank should consider when implementing monetary policy centred on interest rates could be effectiveness of monetary tools in controlling money supply. The effectiveness of monetary policy in an economy depends on the ability of the Central Bank in changing the money supply. The more effective the monetary tools, the more substantial the shift in the money supply curve. In countries which have a relatively undeveloped/ inactive securities market, the Central Bank may not be able to conduct open market operations at a scale substantial enough to create the desired change in money supply.

Another factor that a central bank should consider would be the interest elasticity of the marginal efficiency of liquidity preference (LP) curve. If the LP curve of the country is highly interest inelastic, a change in money supply will lead to a substantial change in interest rate, and this makes monetary policy more effective. Conversely, if the LP curve is highly interest elastic, then a given change in money supply will lead to an insignificant change in interest rate, thereby rendering the monetary policy less effective.

Lastly, a central bank may also take into consideration the economic outlook of consumers and firms. If consumers and firms are pessimistic about the economic prospects, reducing the interest rates may not do much to boost their spending due to the lack of confidence in the long-term recovery of the economy.

In general, the implementation of monetary policy should raise the living standards of the citizens within a country. Standard of living (SOL) is a broad concept that refers to the level of well-being of a typical individual or household within the country. It encompasses both the material and non-material aspects of life. The material well-being of an individual refers to the quantity and quality of goods and services that is available to an individual in a particular year. The non-material aspect of living includes leisure, stress level, environment, social & political stability, etc.

Expansionary monetary policy can increase the material SOL of the citizens. This policy aims to increase aggregate demand (AD) and hence economic growth during a recession. The reduction in interest rates lowers the cost of borrowing and increases the ability and willingness of households to borrow to purchase big-ticket items, thus increasing consumption. Lower interest rate also makes it less costly for firms to borrow to invest. As a result, investment in the economy will increase as projects which were not viable in the past becomes viable at the lower interest rate. Also, a lower interest rate relative to that of other countries causes 'hot' money to flow out of the country. This causes the exchange rate to fall, thus leading to a depreciation of the domestic currency. The weaker domestic currency causes exports to be relatively cheaper in foreign currency while imports become relatively more expensive in domestic currency. Assuming Marshall-Lerner condition is satisfied, this will increase net exports. This

increase in consumption, investment and net exports increases AD and a multiple increase in national income. Referring to Figure 1, suppose the initial equilibrium is at the Keynesian range of the AS curve where the initial general price level and real national output is at P_0 and Y_0 respectively. An increase in AD from AD_0 to AD_1 causes the new equilibrium level of national income to increase to Y_1 . Assuming that population growth rates rise slower than real GDP growth, there will be an increase in real GDP per capita. This means that households have higher purchasing power and can consume more goods and services. Thus, an average citizen can enjoy higher material SOL.

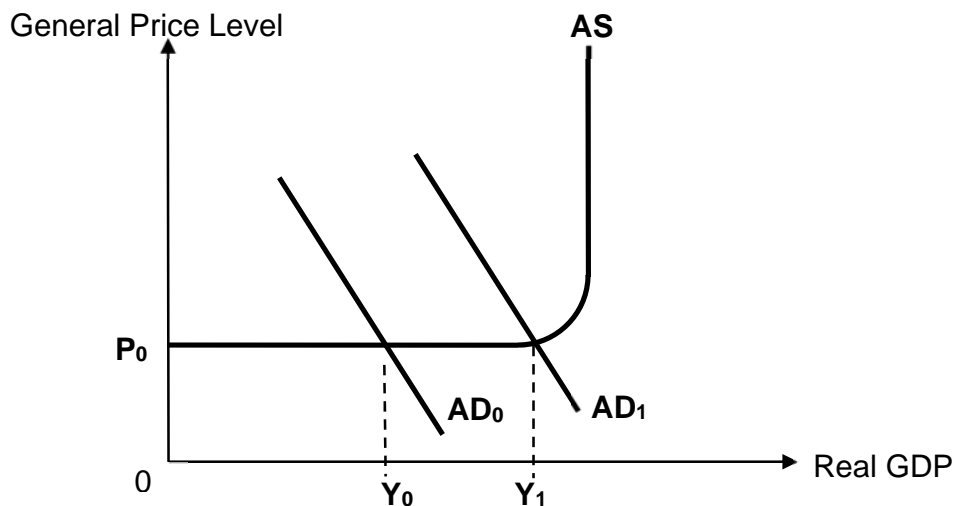


Figure 1: Impact of increase in interest rate on AD

However, monetary policy may actually worsen non-material SOL. If the higher GDP per capita is due to longer working hours of workers, this meant that the citizens had less leisure time and rest. This could lead to worse health condition and higher stress level. As a result, they could have experienced a fall in a quality of life. Economic growth may also result in negative externalities such as water and air pollution and congestion. People may be worse off in terms of non-material well-being.

Moreover, such a policy may not increase material SOL of an average citizen in the country. For example, expansionary monetary policy could bring about higher national income, but the higher GDP figure could be due to the higher level of income earned by a minority of people while the majority of people do not see an improvement in their material wellbeing of life. The gap between the rich and the poor could have widened. This means that the increase in GDP could be due to a small portion of the rich becoming better off while the average person does not benefit. Thus changes in standard of living of an average citizen can only be better estimated, with information about income distribution known and whether the rich-poor divide has widened amidst the rise in real GDP per capita.

Also, due to the limitations of the monetary policies such as poor economic outlook, such a policy may not sufficiently improve national income and standard of living. As explained above, if consumers and businesses are pessimistic about the economic prospects, an expansionary monetary policy which lowers the interest rates may not do much to boost their confidence in the long-term recovery of the economy. Consumption and investment may not rise significantly, thus the increase in national income and hence economic growth may be limited and this may not sufficiently raise material SOL.

Lastly, time lags and persistent low levels of interest rates could depress living standards. Low interest rates could stimulate economic growth and result in an increase in jobs creation. However, if the central bank continues to keep interest rates at very low levels, it is possible that inflationary pressures result, which could depress living

standards. As shown in Figure 2, AD was initially at AD_1 in the wake of the financial crisis. Low levels of interest rates would increase consumption and investment, causing AD to increase to AD_2 , bringing about a rise in real output and employment. However, in a persistent low interest rates environment, the continual increase in AD would cause the economy to approach the full employment output level as shown by Y_F , giving rise to overheating. The rise in inflationary pressures is shown by a continual rise in general price level from P_1 to P_2 , and then from P_2 to P_3 , with no change in national income. The resultant demand-pull inflation caused by the easy availability of cheap money would lead to falling purchasing power of consumers. They are able to consume less goods and services than before, and hence material SOL may worsen. Likewise, during the time the policy works its way through the economy, the problem could have been self-corrected and the policies could end up destabilising the economy (i.e. overshooting due to time lags), hence material SOL may worsen.

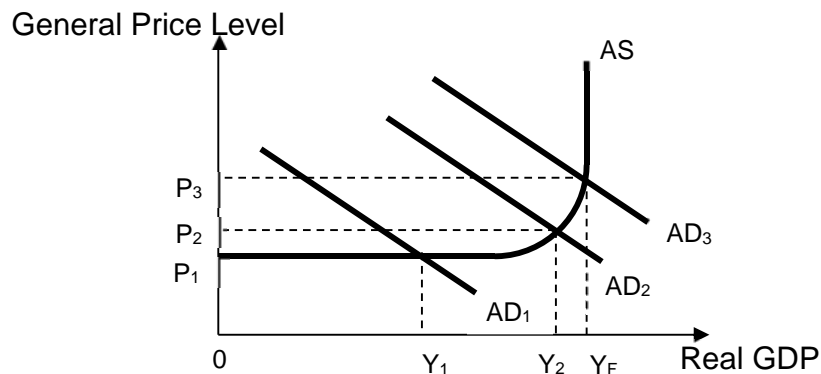


Figure 2: Inflationary pressures

In conclusion, monetary policy may be able to raise material and non-material SOL if the government is successful at implementing policies to mitigate the negative consequences.

Knowledge, Understanding, Application & Analysis		
L3	Upper 18-20	For a developed explanation of 3 factors that a central bank should consider when implementing monetary policy centred on interest rates, and a developed discussion on whether expansionary and contractionary monetary policies improve the standard of living (both material & non-material aspects).
	Lower 15-17	For a developed explanation of 3 factors that a central bank should consider when implementing monetary policy centred on interest rates, and a developed discussion on whether expansionary OR contractionary monetary policies improve the standard of living (both material & non-material aspects).
L2	10-14	For an undeveloped explanation of 3 factors that a central bank should consider when implementing monetary policy centred on interest rates, and a developed discussion on whether expansionary OR contractionary monetary policies improve the standard of living (both material & non-material aspects). OR an undeveloped discussion on whether expansionary AND contractionary monetary policies improve the standard of living (both material & non-material aspects).
L1	Upper 6-9	For an undeveloped explanation of 3 factors that a central bank should consider when implementing monetary policy centred on interest rates, and an undeveloped explanation on how expansionary OR contractionary monetary policies improve the standard of living (either material & non-material aspects).
	Lower 1-5	Smattering of valid points.

E3	Builds on an appropriate analysis to evaluate critically to arrive at a well-reasoned judgment and decision	4-5
E2	Some attempt of evaluation or a conclusion that answers the question but doesn't explain the judgement or base it on analysis	2-3
E1	For an unexplained assessment or one that is not supported by analysis.	1

Essay Q6 (Section B)

Price stability, full employment and economic growth are widely accepted as key policy objectives of an economy.

- a) Explain this statement and which objective might be the most important for the Singapore economy. [10]**
- b) Discuss whether it is possible to achieve all the key policy objectives without causing conflicting outcomes. [15]**

Suggested Answer (a)

Price stability, fully employment and economic growth are widely accepted as key policy objectives because the attainment of these objectives are likely to yield benefits to the economy. Or, if seen from another angle, failure to achieve them can lead to negative consequences on the economy.

Full employment indicates a zero cyclical unemployment and a low structural and frictional unemployment level. Unemployment rate is a measure of the extent of unemployment in an economy. The people who are unemployed are people who are part of the labour force, but currently without a job and actively looking for one. An unemployment rate between 1-3% can be considered as low unemployment. It is important to achieve low unemployment because a high level of unemployment negatively affects the government finances. The government has to pay out more unemployment benefits when many individuals are unemployed and there are opportunity costs incurred from such expenditure because the government could have put these funds to other uses such as improving public infrastructure. Also, as unemployed workers do not earn any income, they will not contribute any income tax to the government. Furthermore, as the unemployed individual cut their spending, they also contribute less in terms of indirect taxes such as GST. Taken together, the fall in tax revenue and rise in government spending will negatively affect the government's budget position if the amount of tax revenue collected is not able to cover total government spending and this may have severe implications on the economy.

Economic growth implies that more goods and services are produced in the economy which brings about higher incomes for the citizens. If economic growth exceeds population growth, higher average incomes may lead to improvements in standards of living. Standard of living refers to the level of material and non-material well-being of an individual within the country. The material well-being refers to the quantity and quality of goods and services that is available to an individual in a particular year. A higher average income will increase the purchasing power of the citizens which allows them to buy more goods and services, thereby leading to an improvement in the material standards of living. On the other hand, the non-material well-being refers to leisure, stress level, adult literacy rate and life expectancy at birth, etc. With economic growth, the government is able to receive higher tax revenue and hence have more budget to spend on improving the quality of healthcare or building recreational facilities (sports complex, swimming pool, etc). Therefore, life expectancy and the availability of leisure activities can increase thereby increasing the non-material well-being.

Price stability is achieved when the economy is experiencing a low rate of inflation. Inflation is defined as a sustained, inordinate and general increase in the prices of goods and services. A low rate of inflation is when the economy achieves a 1-3% annual change in the CPI. It is important to achieve low inflation because it creates an environment that encourages savings and investment as stable prices ensure that the value of assets will not be eroded by unanticipated inflation. Potential investors will be more confident to invest given the greater

certainly on long run returns to investment since there are more certainties on future costs and prices of the products. In the long run, an increase in investment translates to an increase in productive capacity for the economy.

In the case of Singapore which has a small and open economy, price stability might be the most important objective since we rely heavily on the external economies to drive the country's growth since domestic consumption and indigenous investment take up a relatively smaller proportion of the country's national income. Given our reliance on exports for growth, it is important to ensure that inflation stays low in order for prices of exports to remain competitive relative to other countries. As such, achieving price stability will help the government to achieve other macro objectives of the government as the increase in investment expenditure and export revenue will increase AD and thereby increasing national income assuming the economy still has idle and unemployed resources. Firms will need to hire more workers to produce the higher amount of goods and services which will bring down unemployment level. The increase in investment will also increase the productive capacity of the economy which leads to potential growth.

Knowledge, Application/ Understanding and Analysis		
L3	For a developed answer that explains why price stability, full employment and economic growth are widely accepted as key policy objectives of an economy AND which objective might be the most important for the Singapore economy.	8-10
L2	For an undeveloped answer that explains why price stability, full employment and economic growth are widely accepted as key policy objectives of an economy.	5-7
L1	For an answer that shows some knowledge of the key policy objectives and/ or unexplained justification for which objective might be the most important for the Singapore economy.	1-4

Suggested Answer (b)

Introduction

From part (a), we have noted the importance of achieving price stability, full employment and economic growth. When these objectives are not achieved, the government will need to implement policies to rectify the problem and whether the government is able to achieve all the key policy objectives without causing conflicting outcomes depends on the type of policy implemented as well as the state of the economy.

Development: it is impossible to achieve all the key policy objectives without causing conflicting outcomes

With the adoption of labour-saving technology to drive potential growth, the displaced workers might not be equipped with the new skills to be employed in the high-tech sector and this mismatch will lead to an increase in structural unemployment. Besides, the newly created jobs may not be enough to absorb those who were previously unemployed. In this case, the pursuit of economic growth (potential growth) may come at the expense of employment. As such, it is important that education and training infrastructures and incentives are put in place to minimize the conflict that may arise.

In addition, the government might implement expansionary demand management policy to pursue actual growth and low unemployment. However, if AD continues to increase even when the economy is nearing full employment level of national income probably because the government did not manage to withdraw the stimulus in time or the size of the fiscal stimulus was too substantial, this may put upward pressure on the general price level. Specifically, if AD_2 continues to rise to AD_3 as the economy approaches full employment as shown in Figure 1, firms may have to bid up prices to obtain scarce resources for production. If so, P_2 increases to P_3 , fueling demand pull inflation. In this case, the pursuit of low unemployment and actual growth may come at the expense of price stability.

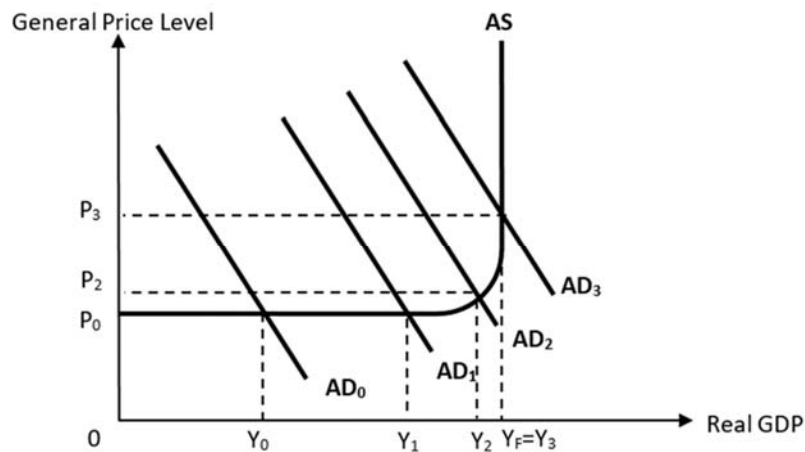


Figure 1

Development: it is possible to achieve all the key policy objectives without causing conflicting outcomes

On the other hand, the pursuit of low unemployment and actual growth during a recession will not cause any conflicting outcome. Referring to Figure 1, suppose the initial equilibrium is P_0 and Y_0 , an increase in government expenditure (G) via building more public infrastructure will increase AD from AD_0 to AD_1 , leading to a rise in national income from Y_0 to Y_1 and price level remain constant at P_0 . This rise in production likely translates to more workers employed thereby reducing the degree of cyclical unemployment and enables the economy to enjoy actual growth. As such, it is possible to achieve all the key policy objectives without causing conflicting outcomes if the economy has ample idle and unemployed resources.

Also, the government may implement supply-side policies to bring about a sustained growth. For instance, the Singapore government has put in place the Productivity and Innovation Credit + (PIC+) that grants tax deductions of 400% on spending on activities pertaining to productivity and innovation such as IT and automation of up to a max of \$600,000 per year. This lowers the cost of investing in such technology for firms and increases their returns on investment. As such, they are incentivized to engage in such productivity and innovation activity which will increase the productivity of capital. The Economic Development Board (EDB) has also introduced various incentives to attract multi-national companies to set up their business in Singapore. An example of such initiatives is the pioneer status whereby tax exemption on qualifying profits up to 15 years are given for high-tech/high value-added manufacturing and services industries. Attracting these industries to Singapore allows for job creation and more importantly, increase productive capacity as it allows Singapore to be in the forefront of technology. These increases in productive capacity will shift LRAS to the right from $LRAS_0$ to $LRAS_1$ will lead to a sustained economic growth from Y_0 to Y_1 as shown in Figure 2 and price level has also decreased from P_0 to P_1 . In this case, it is possible to achieve all the key policy objectives without causing conflicting outcomes.

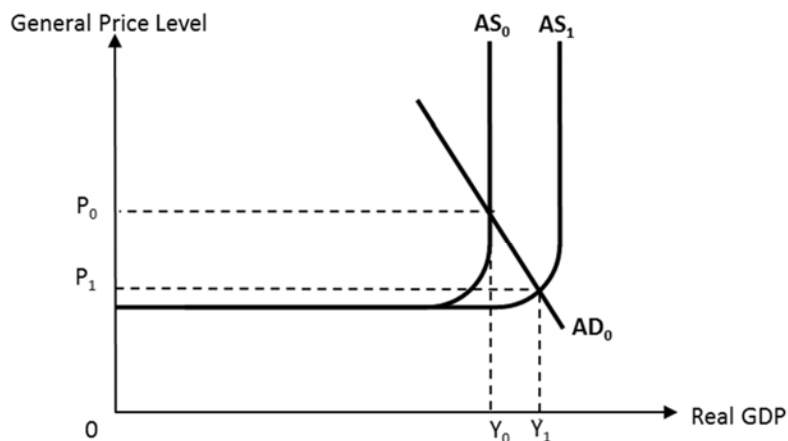


Figure 2

Evaluative conclusion

In order for a government to be able to simultaneously achieve all of the key policy objective, there is a dire need for several alternative policies to be implemented simultaneously given the conflicts that may arise for each policy. For example, the implementation of expansionary demand-management policies must be coupled with supply-side policies in order to achieve non-inflationary economic growth. The former will ensure that demand continues to grow while the latter will ensure that there is adequate productive capacity to accommodate the increase in demand in order to prevent inflationary pressure from setting in.

Knowledge, Application/ Understanding and Analysis		
L3	For a developed discussion on how it is possible to achieve all the key policy objectives without causing conflicting outcomes.	8-10
L2	For an undeveloped discussion on how it is possible to achieve all the key policy objectives without causing conflicting outcomes. Or For a developed explanation on how it is possible/ impossible to achieve all the key policy objectives without causing conflicting outcomes.	5-7
L1	Smattering of valid points	1-4

E3	For an answer that uses analysis to evaluate why it is possible/ impossible to achieve all the key policy objectives without causing conflicting outcomes	4-5
E2	For an answer that makes some attempt to evaluate why it is possible/ impossible to achieve all the key policy objectives without causing conflicting outcomes	2-3
E1	For an unexplained evaluative statement(s)	1