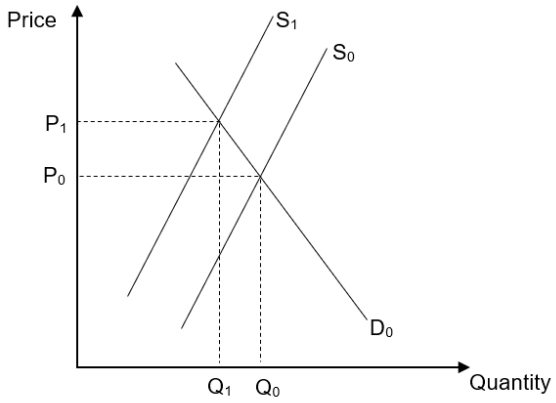
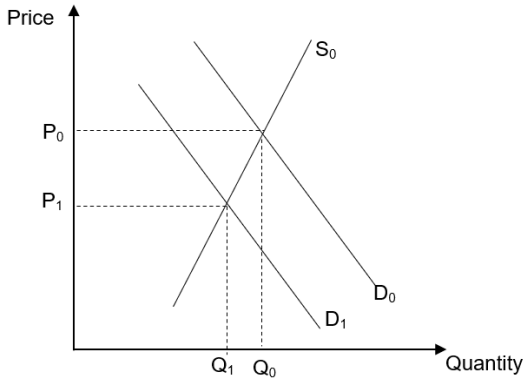
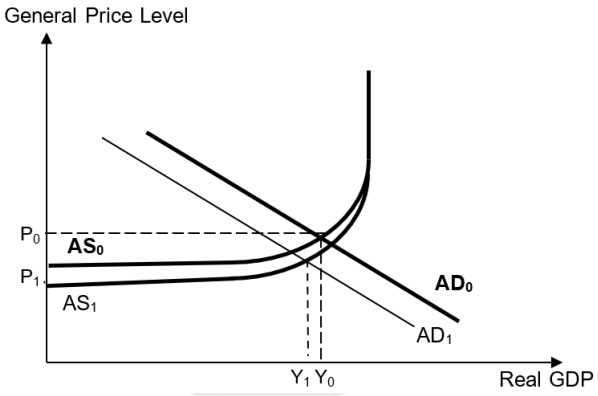
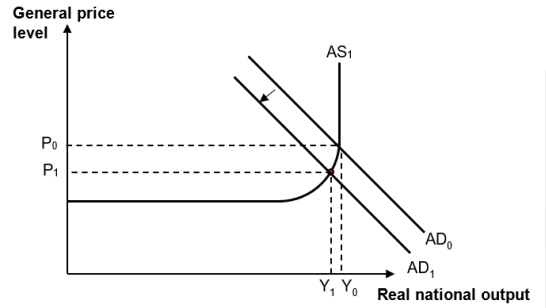
2022 A-Level Case Study Question 1

(a)	**Use a supply and demand diagram in each case to explain why:**	
	(i) the price of fresh fruit and vegetables in Australia has risen as a result of the drought.	**[2]**
	 **Market for fresh fruits & vegetables** The drought would have resulted in the destruction of fruits and vegetables harvest, which is a negative supply shock, causing the supply curve to shift leftwards from S_0 to S_1 hence leading to a shortage which increases the price from P_0 to P_1.	
	(i) international tourist arrivals into Australia are expected to fall as a result of the bush fires.	**[2]**
	 **Market for tourism** The bush fires would have resulted in a change in tastes and preferences of tourists to avoid the risk of being affected by the smoke/fire to their health and hence demand will fall from D_0 to D_1 hence leading to a fall in output (tourist arrivals) from Q_0 to Q_1.	
(b)	**With reference to the data, explain one possible reason for the change in Australia's budget balance from February to June 2020.**	**[2]**
	From Figure 1, Australia Budget Balance went from a budget surplus in Feb 2020 to a budget deficit in June 2020. One possible reason for the change could be due to the government needing to spend "an extra A$70 billion to A$90 billion on stimulus and support measures to help the nation recover" (Extract 3), hence worsening the budget deficit.	

(c)	**With reference to Extract 2, explain why a nominal rate of interest of 0.25% in March 2020 would be described as being 'negative' in real terms.**	**[2]**
	Real interest rates = nominal interest rates – inflation rate. From Extract 2, inflation rate in March 202 was 2.2%, real interest rates will be 'negative' in real terms of -1.95%. [0.25% - 2.2% = -1.95%]	
(d)	**Explain how a negative real interest rate is likely to affect savings by consumers and the exchange rate in Australia.**	**[4]**
	Savings is necessary to fund investment. However, in times of negative real interest rate, the opportunity cost of savings is higher. Hence it is better to spend on current consumption than to save for future consumption as purchasing power (value of saving) is eroded. This will lead to fall in consumers' savings. With negative real interest rate, it would also likely to result in 'hot money' outflows due to the negative returns on investment. These outflows would lead to Australian currency being sold and converted to foreign currencies causing the supply of Australian currency to increase. This exerts a downward pressure on the external value of Australian currency, hence resulting in a depreciation.	
(e)	**Given the weakening of Singapore's exchange rate, discuss whether a stronger exchange rate would be of overall benefit to Singapore when 'the global economy is in deep recession' (Extract 4).**	**[8]**
	<u>R1: A stronger exchange rate would benefit Singapore</u> Given Singapore's high import dependence, due to a lack of natural resources, large and sudden increases in prices of imported inputs will result in severe imported inflation. A stronger exchange rate will make imported inputs cheaper in domestic currency and at the same time, Singapore's exports will become more expensive in foreign currency.  With reference to the above diagram, a stronger exchange rate will shift AS_0 to AS_1, reducing imported inflation and AD_0 falls to AD_1, reducing demand pull inflation and overall, GPL falls from P_0 to P_1. A stronger exchange rate will dampen the growth in AD and reduce the rate at which the cost of imported inputs is rising, allowing prices to rise more slowly. **<u>R2: Cost of a stronger exchange rate for Singapore</u>** A strengthening of the Singapore exchange rate could result in exports being more expensive in terms of foreign currency, and this can decrease the demand for Singapore's exports. As Singapore's exports priced in SGD remain unchanged, strengthening of Singapore's exchange rate can reduce export	

revenue (measured in SGD) and worsen the balance of trade. Assuming there is a decrease in the real trade balance (fall in BOT due to a fall in the demand for exports), this will in turn decrease the aggregate demand since net export is a component of the aggregate demand and national income will decrease through the reverse multiplier process.



With reference to the above diagram, a fall in the net exports will shift the aggregate demand (AD) from AD_0 to AD_1. Through the reverse multiplier process, it will lead to a more than proportionate decrease in national income, from Y_0 to Y_1. At the same time, cyclical unemployment will increase due to the fall in real output from Y_0 to Y_1 as less resources are hired due to fall in production.

Conclusion

Ev1: From Extract 4, given that "the global economy is in deep recession", it is quite unlikely that significant sources of inflation exist, and hence a stronger exchange rate, which serves to address inflation, may not be of use

Ev2: Furthermore, it will make our exports less competitive, and it could potentially worsen the impacts of a global recession that could have on Singapore's economy given that Singapore is one of the world's most open economies, and is usually hit hardest and earliest during any global shock.

Summative Conclusion: Hence, to conclude, a stronger Singapore dollar would not be overall beneficial to Singapore when 'the global economy is in deep recession' and we usually prefer a zero percent appreciation of the exchange rate or even weakening of Singapore's exchange rate.

MARK SCHEME:

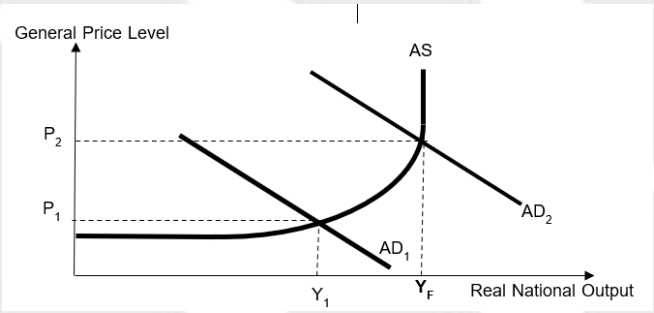
L2	Breath: Covers 2 requirements. Explains both benefit and cost of stronger exchange rate to Singapore R1: A stronger exchange rate would be beneficial to Singapore R2: A stronger exchange rate would be "costly" to Singapore Depth: Applies relevant economic concepts or theories Explains with rigour and details Good application & understanding of the characteristics of deep recession faced by the global economy Answer uses case evidence from Extract 4	4 - 6
L1	Lacking any of the L2 criterions	1 - 3
E2	Makes a clear, justified and convincing stand based on both requirements; synthesis arising from analysis of both requirements and prior evaluation with reference to case material where appropriate.	2
E1	Makes a clear stand without any attempts to substantiate or justification is weak or not convincing.	1

(f)	**Discuss whether fiscal policy is the most effective way to bring unemployment down in Australia.**	**[10]**

Introduction

Unemployment refers to the situation where people in the labour force, who are willing and able to work, but are unable to find employment. With reference to Figure 2 that illustrate Australian job losses since coronavirus restrictions indicated that unemployment was caused by demand-deficient/cyclical reason in general where the accommodation and food sectors were more severely affected.

R1: Explain how fiscal policy can bring unemployment down in Australia



With reference to the above figure, suppose aggregate demand is initially at AD_1. The existence of output gap ($Y_F - Y_1$) suggests that the economy is facing demand-deficiency, which is due to the coronavirus restrictions in Australia and in such situation, expansionary fiscal policy can be used to resuscitate the economy.

Expansionary fiscal policy involves running a budget deficit as government spending is raised while direct taxes are reduced. From Extract 3, higher spending by government on stimulus (e.g., spending on services, rent assistance & childcare subsidies) and support measures (e.g., for households & businesses) will directly raise government spending (G). Reducing personal income tax or giving more transfer payments raises the disposable income of households while reducing corporate taxes increases the post-tax profits of firms, thus further stimulating consumption (C) and investments (I).

As the G, C, and I components of AD rise via the multiplier process, output, and income will also rise. Hence, firms will hire more factor inputs to produce higher level of output leading to fall in demand-deficient unemployment.

Ev1: From Figure 1, given Australia's budget deficit problems prior to the coronavirus pandemic, the use of fiscal policy via increased government spending or reducing taxes involves running budget deficits which are typically financed from borrowing (e.g. issuing of government bonds). If the Australian government was to finance their budget deficit by borrowing from financial markets, the amount of funds available for the private households and firms to borrow is reduced and this will cause consumption and investment to fall, which may offset the expansion in AD arising from the initial rise in government spending leading to crowding out effect.

OR

Should the Australian government decide to raise its spending on infrastructural development as the longer-term support for aviation & tourism, and such projects take time to construct, payments will not be made upfront but will instead be spread over a prolonged period which may not be effective to bring unemployment in Australia due to time lag.

OR

Lastly, there will always be some pertinent issues that will not be resolved even with increased Australian government spending. For example, aviation and tourism are affected due to border closures and hence even with government spending, it may not necessarily lead to the recovery of such sectors, as aviation industry remained grounded, and tourists are not allowed to travel.

R2: Explain how supply side policies can bring unemployment down in Australia

As an alternative, the Australian government can consider using the short run supply side policies. Some possible supply side policies include subsidies for firms like subsidy for wages, rentals and utilities as mentioned in Extract 2, where the Australian government has pledged hundreds of billions of Australian dollars to help support businesses and individuals. In addition, from Extract 3, there were calls on the government to introduce other forms of economic stimulus including rent assistance and childcare subsidies to support households and businesses. Hence, given that the Australian economy contracted amid bushfires and the coronavirus outbreak, the above policies hope to reduce unit COP and increase AS and help to increase real output, boosting economic growth and job creation, thus reducing unemployment. The Australian government can also consider using the long run supply side policies, as mentioned in Extract 3, that the government has indicated further targeted assistance to sectors that require longer-term support including aviation and tourism by spending on service, infrastructure and social housing construction to enhance both the quantity and quality of labour to increase AS to reduce unemployment as well.

Ev2: Overall, short run supply side policies have many limitations, for example, it is usually very costly and may not be affordable for the Australian government who already have large fiscal deficits and debt, as evidenced in Extract 1 where the government has pledged A$2 billion over the next two years for measures to deal with the damage caused by the bushfires and also in Extract 2, where the government also pledged hundreds of billions of Australian dollars to help support businesses and individuals. As for the long run supply side policies, to support aviation and tourism industries, the impact will take a long time to implement and bear fruit and are meant for long run economic development.

Alternative R2: How monetary policy can bring unemployment down in Australia

As an alternative, the Australian government can consider using expansionary monetary policy via the lowering of interest rates as mentioned in Extract 3, that the Reserve Bank should be prepared to use monetary policy tools more aggressively. This means a deliberate raising of the money supply or lowering of interest rates to boost AD. With lower interest rate, the cost of borrowing will fall. Consumers will receive lower returns to their savings from banks, so C will be encouraged. For firms, there will be higher returns to investment, so I will increase. In addition, the decrease in interest rates might lead to an outflow of hot money and a depreciation of the domestic currency. This could result in higher export expenditure as foreigners will now find the domestic goods and services relatively cheaper.

Ev2: During an economic downturn, economic outlook is weak as firms are pessimistic regarding future business opportunities while households are worried about job losses and reduced wages. Even with lower interest rates, most firms and households will still be unwilling to borrow for investment and consumption as they are not confident of paying back their loans in the future. From Extract 2, it was mentioned that the interest rate was at a new record low of 0.25%. Given that the Reserve Bank of Australia has cut the interest rate significantly, it might not be possible to reduce it much lower and this would explain why there will not be significant decrease in unemployment.

Summative Conclusion

In conclusion, despite its limitations, fiscal policy is still commonly used by governments to counter demand deficiency unemployment as unlike supply side policies, or monetary policy, due to issue of liquidity trap faced by the Australian government, making the limitation of fiscal policy 'less significant', as fiscal policy will definitely have some effect in raising AD as government spending will definitely

increase and hence there is always hope that it can 'jump-start' an economic recovery leading to decrease in unemployment, thus fiscal policy is effective to some extent, to bring unemployment down in Australia. Lastly, if there exist structural unemployment, perhaps the government can consider the use of supply side policies that involves efforts to make the supply of labour more adaptable to demand or to create jobs in economically depressed areas to help to lower unemployment as well.

MARK SCHEME:

L2	Breadth: Covers 2 requirements Covers both the use of fiscal policy and an alternative policy to reduce unemployment R1: The use of fiscal policy is effective in lowering unemployment R2: The use of supply-side policies is effective in lowering unemployment Or Alternative R2: The use of monetary policy effective in lowering unemployment Consider the Australia context Depth: Uses relevant economics concepts with rigorous analyses Uses relevant case evidences to support the analyses	4 - 7
L1	Lacking any of the L2 criterions	1 - 3
E3	Makes a clear, justified and convincing stand based on both requirements; synthesis arising from analysis of both requirements and prior evaluation with reference to case material where appropriate	3
E2	Evaluation of both requirements with reference to case material where appropriate	2
E1	Evaluation of one requirement with reference to case material where appropriate	1

2022 A-Level Case Study Question 2

Suggested answers

(a) Distinguish between a rise in total output and a rise in productivity. [2]

A rise in total output is the increase in the total amount of goods and/or services that is produced whereas a rise in productivity is the increase in output-input ratio. (total amount of goods vs fop, given same amount of FOP used)

(b) Explain one reason why a firm with significant market power and long-run excess profits might choose to spend large sums on research and development (R&D). [2]

A firm with monopoly power and long-run excess profits would have the funds and incentive to engage in R&D. Investment in R&D can reap higher profits if the R&D results in new/better product. It helps to increase demand for its product leading to higher revenue and at the same time reduces the PED further raising its market power by creating a barrier to entry.

Alternatively

R&D in processes can help to cut cost if the R&D results in cost savings production methods. It helps to lower unit cost (MC) which could lead to lower price and increase the firm's market share, possibly increasing the profits.

(c) Explain, with reference to Extract 8, what might be the opportunity cost of the S$19 billion invested by the Singapore government to build the country into a global R&D hub. [2]

Opportunity cost is the value of the next best alternative forgone when a decision is made. In this case when the government chose to fund the R&D hub, the next best alternative which is spending on healthcare sector (hospitals) or education (schools) sector is forgone.

(d) Explain how the creation of an innovation culture in Singapore is likely to have benefitted the Singapore economy. [6]

Extract 8 Para 1

"For some years the Singapore government has put in place policies designed to make itself into an innovation and start-up hub in the region. Singapore has also become a magnet for foreign technology firms, hosting regional headquarters and engineering hubs for many of the world's leading companies. A major British electronics company said earlier this year that it would be moving part of its operations to Singapore. In addition, several Chinese companies also have R&D centres in the country."

Employment: Evidence suggests that there is FDI inflow into Singapore due to the innovation culture. This will improve the BOP through capital & financial account. In addition, the investment component in the AD will also increase and through the multiplier effect lead to a larger increase in real GDP. The demand for workers which is a derived demand will increase. Thus more workers will also be employed.

Economic growth: Innovation and investment will also have impact on AS when quality and quantity of resources improve/increase, leading to potential growth.

Balance of trade: If there is product innovation and process innovation, it can also improve the quality and lower the price of the goods produced hence improving the export competitiveness. This can increase demand for Singapore's export to increase export revenue, which benefits Singapore balance of trade position.

Hence, the Singapore economy will benefit from improvement in BOP, actual and potential economic growth, lower unemployment and balance of trade surplus.

*AD/AS diagram is good to have but not a must.

(e) Discuss whether subsidising the purchase of electric cars would improve the efficiency of resource allocation in the market for transport in Singapore. [8]

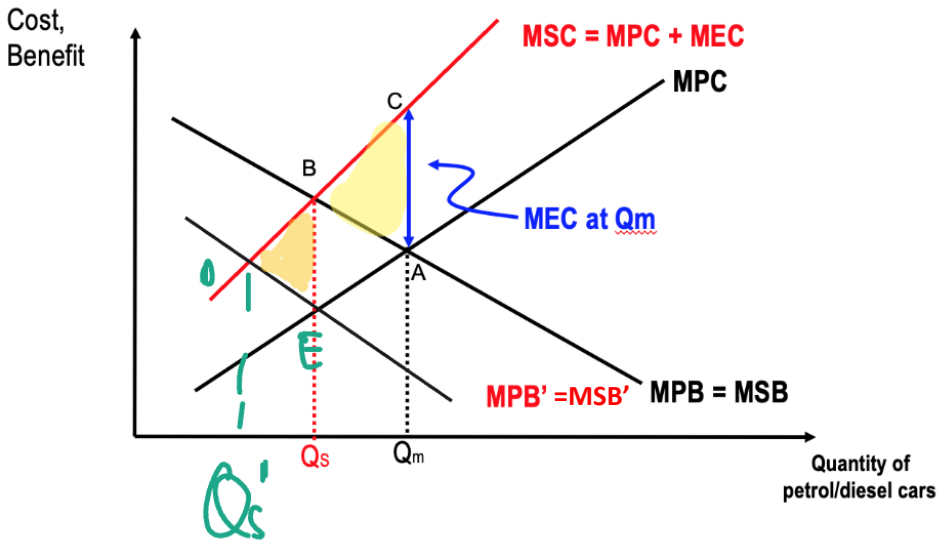
R1: Explains how subsidising EVs improves efficiency

Subsidy makes electric cars cheaper and demand for petrol / diesel cars will fall hence resource allocation improves (negative ext)

Marginal Private Cost (MPC) measures the cost of petrol/diesel vehicles usage such as the cost of fuel and maintenance. **Marginal Private Benefit (MPB)** measures the benefit to consumers from using petrol/diesel powered vehicles such as convenience and comfort derived. **Qm** represents the free market equilibrium output where **MPC = MPB.**

There is negative externalities arising from usage of petrol / diesel powered vehicles. This would be the healthcare cost incurred by the third parties such as those residing near the roads due to inhalation of nitrogen oxides (NO_x) from car exhausts, which regularly exceeds safe levels (Extract 5).

The healthcare costs incurred by the third parties are borne by them and not compensated by the users of petrol/diesel powered vehicles. Hence such external costs are unpriced by the market and not reflected in the MPC which only reflects the private costs.



In Figure 1, external costs cause a divergence between private and social costs, with MSC lying above MPC as MSC = MPC + MEC. The market does not price in the true costs or social costs thus the socially efficient outcome should take into account the full costs and benefits to society of an additional unit of vehicle used. Hence the socially efficient quantity of vehicle usage to maximise social welfare is at **Qs where MSC = MSB.** However, if left to the free market, equilibrium price is Pm and output Qm. Hence, there is an **over-consumption of Qm – Qs** units of petrol/diesel powered vehicles and an over-allocation of resources.

The over-consumption of ($Q_m - Q_S$) units add more to cost than benefit**.** Area Q_mQ_SBC is the total social cost incurred while area Q_mQ_SBA is the total social benefit gained. Since total social costs incurred exceeds the total social benefits gained, area ABC represents the **deadweight welfare loss** due to over-consumption of $Q_m - Q_S$.

With subsidy given to EVs, EVs are cheaper and more motorists will switch to EVs causing the demand for petrol/diesel powered vehicles to fall. MPB falls to MPB' and shifts leftwards, the new market equilibrium is now at Qs where it is determined by MPB'=MPC. However, the new socially optimal level is now at Qs'. Hence there is lower overconsumption from (Qm-Qs) to (Qm'- Qs'), causing the deadweight welfare loss to be reduced from area ABC to BDE.

E1: The extent of the fall in demand for petrol/diesel powered vehicles depends on the value of the cross elasticity of demand.

There may not be a significant fall in demand for petrol/diesel powered vehicles as the price of EVs are still much higher than petrol/diesel powered vehicles even with the subsidy of £3500 subsidy for the purchase of a new electric car in UK (Extract 5). This makes EVs less of a substitute for petrol/diesel powered vehicles.

There are also other consideration. Low availability of charging points also makes it less attractive for consumers to switch to EVs.

*Alternative 1: can analyse positive externality of EV – explain the external benefits in terms of a reduction of pollution which will **improve the health** of residents staying near the high traffic roads. This means there is divergence between MSB and MPB. The subsidy will reduce the MPC of the consumers/drivers (using cost/benefit approach).*

Alternative 2: can analyse negative externality with a broader context of road transport (includes all vehicles such as petrol & diesel cars, EVs, public transport etc) – explain that MEC becomes smaller at every quantity, when more petrol/diesel cars are being replaced by EVs. This means you will shift MSC lower.

R2: Subsidising the purchase of EVs may not necessarily improve the efficiency of resource allocation (Note: The question specified "market for transport in Singapore")

Possible points

Taking a broader perspective on the 'usage of vehicles on the roads' and there is low substitutability between petrol/diesel cars and EVs, subsidy to EV consumers could increase number of cars of the roads for prospective car owners. This could worsen road congestion, another form of negative externality.

There is also pollution (negative externality) from other types of transport e.g. aircrafts considering that market for transport can be a broader definition of market

Furthermore, subsidy to EV consumers does not encourage the use of public transport, which could be more effective to improve resource allocation in the usage of vehicles on the roads.

E2: The number of cars on the road is capped given Singapore's zero vehicle growth rate via the use of certificate of entitlement (COE).

FYI: Singapore has maintained a zero vehicle population growth rate since February 2018, which is fixed until Jan 31, 2025. There is an exception for commercial vehicles, which can increase at a rate of 0.25 per cent annually. Vehicle population is controlled through the supply of COEs.

Summative Conclusion

There will be some improvement in efficiency as shown by the reduction in deadweight welfare loss, but the price differential between EVs and petrol/diesel vehicles is just too great. Large amount of subsidy has to be provided. As evident in the case, a more substantial financial incentive (no sales tax in Norway) is required to push consumers towards adopting the green alternative. Moreover, more charging points for EVs has to be provided (for SG) to increase substitutability. Other policies ought to be in place, such as improving the public transport system and providing more charging points, to hasten the pace of transition to EVs so as to more significantly reduce the amount of emission from transport.

LORMS

L2	Breadth: Covers 2 requirements. R1: Explains how subsidy works to improve efficiency in the market for transport R2: Explains the limitations of subsidy Depth Uses relevant economics concepts (MSB/MSC framework) with rigourous analyses Uses relevant case evidences to support the analyses	4 - 6
L1	Lacking any of the L2 criterions.	1 - 3
E2	Makes a clear, justified and convincing stand based on both requirements; synthesis arising from analysis of both requirements and prior evaluation with reference to case material where appropriate	2
E1	Makes a clear stand without any attempts to substantiate or justification is weak or not convincing.	1

(f) Discuss the extent to which government policy can influence a country's comparative advantage in a good or service. [10]

R1: What is CA and how government policy can influence CA – tech, human and capital

Succinct CA theory

Comparative advantage is the ability to produce a good or service at a lower opportunity cost than its trading partners. It arises due to **differences in factor endowments** i.e. differences in the quantity or quality of factors of production namely natural resources, human resources, capital stock and technological capabilities.

Differences in factor endowments lead to differing factor prices which in turn affect the prices of goods and services produced by different countries. As such, countries typically specialise in producing goods that require factors in which they are relatively abundant as they are able to produce such goods more efficiently (i.e. at a lower opportunity cost) than countries which are less endowed with such factors. Countries then trade these goods and services for other goods and services which they are able to produce less efficiently.

Government policy on tech, human and capital

Government policies might be able to change the factor endowment and hence influence the comparative advantage of the country. Additional resources can be created through sustained investments in labour, capital, and technology. For example:

- Capital can be accumulated if savings are channelled to the production or import of capital goods,
- Skills of workers can be raised through education and training
- Technology can also be improved through domestic research and development or by directly purchasing such technology from more advanced countries

Case evidence

'For some years the Singapore government has put in place policies designed to make itself into an innovation and start-up hub in the region. Singapore has also become a magnet for foreign technology firms, hosting regional headquarters and engineering hubs for many of the world's leading companies.'

'The Singapore government has invested S$19 billion to build the country into a global R&D hub. In March, an additional S$500 million was set aside to expand invesments in a range of new technologies. The Singapore government also takes the protection of intellectual property seriously, making it an attractive place for companies to undertake R&D.'

R2: Government policy to influence CA is limited – natural eg. climate, protectionism

There is a limit as to what government policy can do or how much it can do to change CA.

Natural endowment like raw materials such as copper, rare earth cannot be changed by government policies. These deposits are naturally occurring depending on geographical locations.

Furthermore, if country X's trading partners adopts protectionistic policy like imposing tariff on country X's exports, it will make country X's exports more expensive to the trading partners and hence country X will lose the advantage which CA gives and not be able to export.

Case evidence

'Singapore has faced talent shortages, especially with a small population compared with major economies like the US and China.'

'Increasingly localised production by car makers in China and the US to avoid tariffs has also reduced the exporting power of German-based firms'

Conclusion

E1: The effort and amount of investment in labour, capital and technology would determine the extent to which government policy can influence a country's CA. The greater the investment and the success of such policies, the greater the influence as seen in the case of Singapore.

E2: Even though natural endowment and external factors are beyond the control of a government, a government can create additional resources, for instance, through attracting foreign talents

Summative Conclusion: Hence in conclusion, governments can influence the country's CA to large extent. As seen in the case of Singapore where the government has successfully influence our areas of CA and continue to sustain economic growth.

L2	Breadth Covers 2 requirements R1: Explains CA and how government policy can affect a country's CA R2: Explains the limitation of government policy to affect CA Depth Uses relevant economics concepts with rigorous analyses Uses relevant case evidences to support the analyses	4 - 7
L1	Lacking any of the L2 criterions	1 - 3
E3	Makes a clear, justified and convincing stand based on both requirements; synthesis arising from analysis of both requirements and prior evaluation with reference to case material where appropriate	3
E2	Evaluation of both requirements with reference to case material where appropriate	2
E1	Evaluation of one requirement with reference to case material where appropriate	1