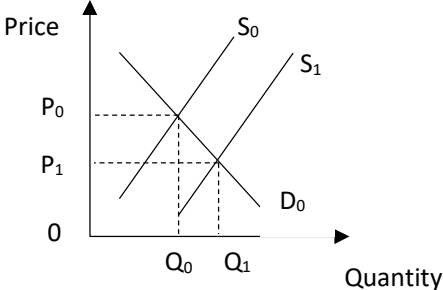


National Junior College
2023 SH2 H2 Economics Preliminary Examinations

Paper 1 – Case Study Question 1

Questions & Suggested Answers

(a)(i)	Using information in Extract 1, identify and explain <u>one</u> demand factor that caused the change in volume of the coffee beans over the period January 2020 to March 2020.	[2]
	<ul style="list-style-type: none"> Fall in demand for coffee consumption was because consumers refrained from dining out due to fear of contracting the virus during Covid-19. This resulted in a fall in demand for coffee, thus a fall in demand for coffee beans, leading to a fall in volume of coffee beans. 	
(a)(ii)	Using information in a(i) and with the aid of a diagram, explain how the change in demand in the coffee beans market has had an impact on the durian market.	[4]
	<ul style="list-style-type: none"> The fall in demand for coffee beans led to a fall in its price and a decrease in quantity supplied, ceteris paribus. Given that coffee beans and durian cultivation are substitutes in production, when faced with falling prices, farmers diversified into more profitable crops such as durians. This led to an increase in supply of durian from S_0 to S_1, thus a fall in the price and increase in quantity of durian.  <p style="text-align: center;">Market for durian</p>	
(b)	Using information in Extract 2, explain why coffee farmers took the decision to shut down production in the short run and leave the market.	[3]
	<ul style="list-style-type: none"> Fall in demand for coffee beans led to a fall in average revenue (AR). Average variable costs (AVC) were rising given rising fertiliser costs. This resulted in coffee farmers shutting down production in the short run and leaving the market since AR is less than AVC. 	
(c)	Explain why Vietnam is likely to see a change in its comparative advantage away from the production of coffee beans.	[3]
	<ul style="list-style-type: none"> Higher opportunity cost in the production of coffee is the reason behind Vietnam's change in comparative advantage away from the production of land-intensive coffee bean. This is because of the potential loss of natural resource land where total arable land is predicted to fall by 2050 if predictions of a 2 degree celsius temperature rise holds true. 	
(d)	Discuss the extent to which coffee shop chains like Starbucks and Luckin are likely to engage in non-price competition.	[8]
	<p>Introduction:</p> <ul style="list-style-type: none"> The mutual interdependence and the differentiated nature of product of competitive oligopolies like coffee shop chains Starbucks and Luckin makes it likely for these firms to engage in non-price competition, given the uncertainty of outcome from competitive tactics. Price Competition, however, is not altogether absent. <p>Body:</p>	

Thesis: Coffee shop chains like Starbucks and Luckin are likely to engage in non-price competition

- High barriers to entry and a few large firms dominating the market in the coffee shop chains industry mean that the decisions of these firms are mutually interdependent.

Explain the market structure

High barriers to entry: Marketing strategies – advertising and branding

- Coffee shop chains like Starbucks is a well established brand name with strong consumer loyalty.
- Starbucks has its own loyalty rewards program and ordering app and is setting the industry benchmark for price and products since its entry into the Chinese market. This is due to large expenditure on advertising and promotion to create a strong brand image, giving Starbucks greater market power such that consumers do not see rival's product as close substitutes.
- Any potential entrant is forced to match up to that expenditure should it wish to enter and compete in the market.

Number and size of sellers

- Each of the few large firms in the coffee shop chains industry - Starbucks, KFC's K-coffee and convenience stores Lawson and Family mart are among the top five in China. Each firm produces a significant share of total market output and has considerable influence over price.

Mutual interdependence and price rigidity

- Each firm's actions will have a significant impact on its rivals and likewise the firm in return is significantly impacted by the actions of their rivals.
- Prices tend to be similar between oligopolists and are stable with time.

Price rigidity

- If a firm lowers its price in an attempt to increase revenue and if rival firms decide to lower their price rather than risk losing a share of the market, quantity demanded will thus only increase less than proportionately. The demand curve facing the firm if it lowers price is relatively price inelastic.
- On the other hand, if a firm raises its price and if the price increase is not followed by rival firms, its sales will fall rapidly. The quantity demanded will thus fall more than proportionately as the demand curve facing the firm if it raises its price is relatively price elastic. Other rival firms will not follow the price increase because by keeping their prices constant, they can capture a larger market share from the firm that has raised its price.
- Both price changes will result in fall in total revenue and profit for the oligopolistic firm, ceteris paribus.

Nature of product

- Starbucks and Luckin differentiated product offerings are each firm's such that consumers are less likely to view rival firms' product as a close substitute, giving each firm greater market power.
- Starbucks focus on a cozy environment - comfortable chairs and art – where people can stay and socialise makes its PED<1 due to a lack of close and available substitute in a casual atmosphere to relax with friends or in solitude. In addition product development in handcrafted brews can attract new customers, as such brews can be tailored to each consumer's taste.
- Luckin on the other hand focuses on convenience in delivery and takeout in addition to the quality of its coffee beans and milk used and that their coffee making is supervised by a barista who won the World Barista Championship.

Anti-Thesis: Coffee shop chains like Starbucks and Luckin may engage in price competition

- Price competition is not absent altogether in the coffee shop chains industry.
- From Extract 4, to increase market share, Luckin engaged in price competition, capitalising on low prices, increasing quantity demanded and revenue.
- Luckin utilises internet technology to inform and attract consumers of their lower prices at consumers' convenience with an emphasis on using quality coffee beans and milk, and the high standard of its brewing process which supervised by a barista who won the World Barista Championship. This reduces Luckin substitutability to that of rivals such as Starbucks, and that consumers will be less responsiveness to changes in rival's price.
- Within three years, Luckin expanded, operating 5,323 coffee shops catching up with Starbucks.
- Overall rise in revenue.

Evaluative Conclusion:

- The uncertainty of the outcome from competitive tactics means that coffee shop chains like Starbucks and Luckin prefer non price competition to a large extent to increase revenue and gain market share.

	<ul style="list-style-type: none"> A change in market conditions, however, such as a fall in demand resulting from economic recession may see firms temporarily engaging in price competition so as to cover the cost of excess production capacity. 	
(e)	<p>Discuss the extent to which indirect taxation is better than agriculture sustainability certification in eliminating the impact of negative externalities arising from coffee beans cultivation.</p>	[10]
	<p>Suggested answer</p> <p>Introduction:</p> <ul style="list-style-type: none"> Negative externalities from production occurs when its production creates an external cost to society that affects third parties as a spill over effect in which no compensation is paid. Deforestation and/or depletion of ground water resulting from coffee cultivation cause a spill over effect on the environment. <p>Body:</p> <p>Explain how negative externalities from production occurs</p> <p>MEC</p> <ul style="list-style-type: none"> <i>Deforestation</i> <ul style="list-style-type: none"> The marginal external costs (MEC) imposed on the environment from deforestation is nature's reduced ability to absorb existing carbon dioxide from the atmosphere. From Table 1, coffee farming emits the highest carbon emissions at 10.75 CO₂-eg kg. This can accelerate climate change, bringing about extreme weather patterns such as droughts and large scale floods affecting our food security as more and more forest land is cleared for the planting of coffee trees. The presence of MEC results in a divergence between marginal private cost (MPC) and marginal social cost (MSC) curves. <p>MPB</p> <ul style="list-style-type: none"> In the free market, small scale farmers only consider their own marginal private benefit (MPB), that is, the additional revenue received from producing an additional unit of coffee beans. <p>MPC</p> <ul style="list-style-type: none"> The marginal private cost (MPC) is the additional cost of factor inputs such as fertiliser to produce an additional unit of coffee beans. Small scale farmers will produce 0Qp units. <div data-bbox="295 1255 1101 1717"> </div> <p style="text-align: center;">Figure 1</p> <ul style="list-style-type: none"> The presence of negative externalities causes a divergence between MPC and MSC, as $MSC = MPB + MEC$ 	

- Assuming no positive externalities arising from producing coffee beans. At Q_P , MSC is greater than MSB.
- Socially optimal level of output is $0Q_S$ units where marginal social benefit equals to marginal social costs, resulting in an overproduction given by distance Q_SQ_P .
- Deadweight loss to society is given by area E_1AE_2 .

Thesis: Indirect taxation is better than agriculture sustainability certification in eliminating the impact of negative externalities arising from coffee cultivation.

- An indirect tax per unit that equals MEC is imposed on coffee farmers to internalise the negative externality.
- $MPC \uparrow$ to $MPC + \text{tax}$ curve.
- Equilibrium qty \downarrow to social optimal level of output (Q_S), reducing overproduction and eliminates deadweight loss.

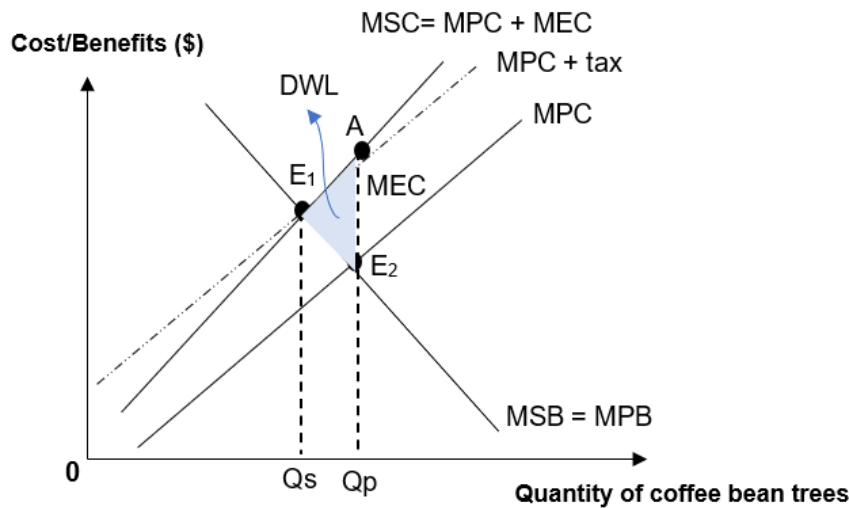


Figure 2

Negative aspect of indirect taxation as a policy measure

- Difficulty in estimating the value of MEC.
- High monitoring and enforcement cost to ensure that small scale coffee farmers discontinue with the practice of groundwater depletion / deforestation practices.

Anti-Thesis: Agriculture sustainability certification may be a better way than indirect taxation in eliminating the impact of negative externalities arising from coffee cultivation.

- Agricultural sustainability certification can reduce MEC, eliminates deadweight loss and brings about the production of coffee beans to the social optimal level of output.
- Vietnam's government 'reaching out to foreign businesses to support Vietnam's small scale coffee farmers to improve coffee crop yields and make it more resilient' suggests an investment in green technology.
- For example, an investment in technological advanced modern water irrigation system would improve consistency in the right amount of water used adjusted for the different climatic conditions in the different regions where coffee trees are cultivated, conserving water, and that the watering of coffee trees is evenly distributed.
- Success of a collaborative partnership depends on the willingness and responsiveness of foreign business to participate in the collaborative partnership; firms who purchase a small quantity of Vietnam's coffee beans might be less willing to participate.

Evaluative Conclusion:

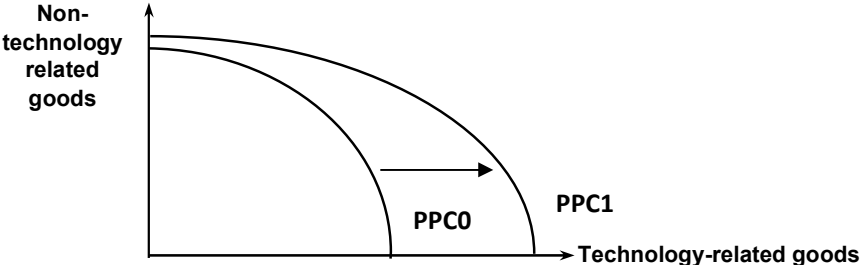
- To small extent, indirect taxation is a better way than agricultural sustainability certification in eliminating negative externalities arising from coffee cultivation.

	<ul style="list-style-type: none"> • In the short run, indirect taxation is a flexible tool that can be implemented almost immediately and incentivise farmers to reduce over-production thereby bringing about the social optimal level. • In the long run, agricultural sustainability certification may be a better way. Although the outcome can only be seen in the long term, training small scale farmers in the sustainable methods addresses the root cause of the negative externality from production i.e. deforestation and groundwater depletion. • Given the multifaceted problems arising from coffee cultivation, a mix of both measures should be implemented i.e. indirect taxation in the short run and agriculture sustainability certification in the long run to bring about the social optimal outcome. 	
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Paper 1 – Case Study Question 2

Questions & Suggested Answers

(a)	With reference to Figure 1, compare the balance of trade in services for Singapore with the EU and US in 2020 and 2021.	[2]
	<ul style="list-style-type: none"> While Singapore has a balance of trade surplus in services with EU, Singapore has a balance of trade deficit in services with US in period shown. Singapore experienced a decreasing deficit with the US and Singapore having an increasing surplus with the EU. 	
(b)	Explain what might be the opportunity cost of the Singapore government having spent about S\$100 billion on virus-related relief to support households and businesses (Extract 5).	[2]
	<ul style="list-style-type: none"> Opportunity costs refers to the value of the next best alternative foregone when a choice is made. The opportunity cost of the approximate S\$100 billion on virus-related relief to support households and businesses is the funding of equal value public investment projects aimed at building other infrastructures such as mega ports or airport terminals, hospitals, schools and new transportation routes. 	
(c)	(i) With reference to Extract 5, explain a factor that led to the change in exchange rate of the Singapore dollar observed in Extract 5 from March 2020 to January 2021.	[2]
	<ul style="list-style-type: none"> Extract 5 indicated that the Singapore economy will recover gradually moving forward to 2021 as the economy reopen the borders slowly. Singapore being reliant on trade, the net exports could have increased due to the gradual re-opening of the borders. The net increase in demand for Singapore's exports could have led to higher demand for the Sing dollar relative to the supply of Sing dollar due to its import expenditure. Hence, leading to the strengthening of the Sing dollar. 	
(c)	(ii) With reference to Extract 6, explain how Singapore government's adjustment of its exchange rate can achieve price stability.	[3]
	<ul style="list-style-type: none"> The Monetary Authority of Singapore's (MAS) surprise move to increase the value of Sing dollar in October attests to the perceived seriousness of these upward price pressures. Imported inflation is likely to endure into 2022 as global disruptions to food production and supply chains persist. The government could counteract the inflationary pressure by appreciating the Sing dollar. (Reduction of cost-push inflation): <ul style="list-style-type: none"> → As the same unit of the Sing dollar can exchange for a higher unit of foreign currencies, this will lead to the fall in price of imported goods in domestic currency, including imported raw material and energy supplies. → As the cost of production decreases, the SRAS increases, counteracting cost-push inflation caused by the cost of higher imports due to the external shocks created by global supply chain. → The impact of fall in cost of production, firms will respond by increase output and reducing price. This will lead to fall in GPL, solving cost push inflation. 	
(d)	Using a production possibility curve diagram, explain the impact of digitalisation in an economy such as Singapore.	[3]
	<ul style="list-style-type: none"> Digitalisation involves investment in more quantities of capital equipment to enable automation, streamlined processes, and the use of advanced technology in production of both technology-related or non-technology related goods. This leads to increase in productive capacity as well as increased productivity as digital tools and software allow for faster and more efficient production methods. As a result, the PPC to shift outwards, from PPC0 to PPC1. 	

	 <p style="text-align: center;">Fig 1: Singapore's Production Possibility Curve</p>	
(e)	<p>Using AD and AS analysis, discuss the reasons that may cause recovery in Singapore going forward from 2021 'to be quite gradual' (Extract 5).</p>	[8]
	<p>Introduction:</p> <ul style="list-style-type: none"> Economic recovery happens when an economy returns to positive actual growth following a recession. However, this recovery going forward in 2021 is expected to 'be quite gradual'. <p>Body:</p> <p>(1) AD reason(s) that caused economic recovery to be quite gradual.</p> <ul style="list-style-type: none"> Given that Singapore is a very opened economy, the re-opening of borders allows for an increase in net exports. The Singapore government has spent about S\$100 billion (\$75.45 billion) or 20% of its GDP, on virus-related relief to support households and businesses. The increase in government expenditure on transfer payments helped boost consumer spending (C) by households and investment spending (I) by firms. The increase in net X, C and I increased AD, and via the multiplier process will lead to a more than proportionate increase in real NY. However, 'recovery is still slow and patchy'. The rate of recovery will depend on the 'speed at which the government can distribute the COVID vaccines and whether this can allow the economy to reopen the borders more quickly. The economy has yet to fully open up its borders, hence, transactions with the rest of the world is not at the previous levels. Hence any increase in net exports might be slow compared to the previous peak, contributing to the gradual recovery. <p style="text-align: center;">or</p> <ul style="list-style-type: none"> Households and firms are still cautious and lacking in confidence, leading to less increase in AD and hence a gradual growth. <p>(2) Supply side reason(s) that caused economic recovery to be quite gradual.</p> <ul style="list-style-type: none"> 'Headwinds and downside risks remain' and hence, 'imported inflation is likely to endure into 2022 as global disruptions to food production and supply chains persist'. This will lead to higher cost of production and fall in in SRAS with the leftward shift of SRAS0 to SRAS1. Producers will respond by partly raising prices and partly cutting back on production. The fall in output will reduce the earlier impact of increase in AD. Hence, this explains the gradual economic recovery going forward. 	

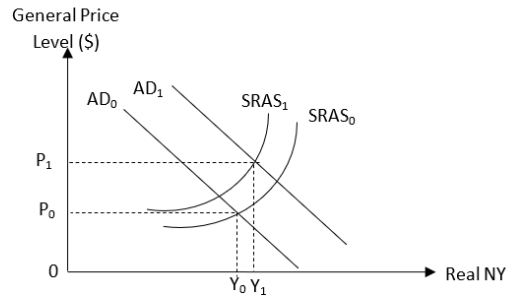


Figure: Gradual recovery of the economy

Evaluative Conclusion:

- Demand side reasons may have greater impact than the supply side reasons on the slow recovery.
- The slow increase in AD (due to govt support for households and businesses and the partial re-opening of border) could be negated by current global situations, such as the heightened bilateral tensions and underlying issues of pre-Covid geopolitical tensions that 'remain substantially unresolved'. These global tensions may last a while and not easily resolved. In the meantime, it could weaken business confidence significantly, causing uncertainty and affecting investment decisions negatively.
- In addition, throughout 2021, domestic services - particularly F&B - have bemoaned the on-again off-again nature of Covid-19 restrictions. Prolonged uncertainty has also restrained consumer and business sentiments. This again might lead to fall in both a fall in consumer spending and firms' investment.
- On the other hand, given time to respond, the Singapore government may intervene and find alternative solutions to the problems caused by global disruptions to food production and supply chains.

(f) Discuss whether the EU-Singapore trade pact is likely to have beneficial impact on the Singapore economy.

[10]

Introduction:

- The trade pact will benefit the Singapore economy if it is able to facilitate the achievement of its macroeconomic aims.
- Current economic problems faced by Singapore include rising inflationary pressures, slow economic growth, rising risks of structural unemployment.

Body:

(1) EU-Singapore trade pact is likely to benefit the Singapore economy.

➔ **Enhance access to export market for goods and services and increased investment opportunities between EU and Singapore, leading to achievement of the macroeconomic objectives.**

Impact on AD:

- Figure 1 showed that EU is Singapore's top export partner and rank second as Singapore's import trade partner in services. Singapore has a positive trade balance in services with the EU in 2021.
- At the end of 2021, total FDI stocks held by Singapore in the EU reached €171 billion. This partnership in investment opportunities will expand rapidly in the following years.
- The Singapore-EU trade pact will help to promote trade by reducing or eliminating tariffs and other trade barriers, making it easier and more cost-effective for businesses to export and import goods and services. This leads to an increase in trade volumes between member countries.
- With the reduction in trade barriers, exporters in Singapore will be able to access larger export markets, leading to increase in demand for their exports, resulting in increase in export revenues.
- Firms that are involved in this trade pact gained a competitive advantage as they can benefit from economies of scale and access to resources not available domestically.
- Similarly, imports from the EU will become cheaper with the reduction or removal of tariffs. Given that the demand for Singapore's imports is price inelastic, the fall in import prices will lead to a less than proportionate increase in quantity demanded and hence, a fall in import expenditure, import expenditure decreases. Overall, with an increase in export revenues and decrease in import expenditure, Singapore net exports increases, leading to an increase in AD. The increase in net exports in services will facilitate the achievement of favourable Balance of Trade for Singapore.

- FTAs often facilitate foreign direct investment (FDI) by providing a more predictable and stable business environment. Given the evidence in Figure 3, Europe is already ranked third largest source of economy for FDI, the European investors are more likely to continue to commit capital to Singapore given the strong trade agreements in place. This will lead to an increase in the investment component of AD.
- The increase in net exports in services and inflow of FDIs will lead to an increase in AD and in turn, will lead to a more than proportionate increase in real national income via the multiplier effect assuming the Singapore has excess capacity to increase production of goods and services.
- Singapore will achieve actual growth with the increase in real output.
- Increase in real output will increase in derived demand for labour, hence, reduction in unemployment.

Impact on AS:

- Extract 7 reported that both sides had given a strong signal by undertaking some very substantive commitments in tariff elimination, on rules of origin and on market access.
- The elimination of tariffs by both economies will help to reduce cost of importation of goods and services, especially since most of Singapore's import are essential raw materials and food stuffs.
- The fall in cost will lead to increase in SRAS, ceteris paribus, producers will respond to this by lowering prices and increase output. This will lead to an increase in real national output leading to increase in actual growth if the economy is below full employment.
- In addition, increase in inflow of FDIs will enhance Singapore's productive capacity, increases potential growth, given increase in quantity, quality of capital goods and improvement in technology.
- Extract 7 provides information on the potential collaboration between Singapore and EU to address the problem of climate change, Europe and Singapore are working in parallel, on the path towards a greener economy", achieving sustainable growth.

(2) Partnership with EU is not likely be beneficial for the Singapore economy.

- The opportunities presented in the growing digitalisation and digital trade with EU are still in the process of negotiation. No firmed agreements have yet been signed.
- Even if it is signed, it might lead greater risk of structural unemployment as the growth of the digital sectors might lead to a mismatch of skills between the growth sectors and the declining sectors which might lead to higher challenges for inclusive growth.
- While Figure 1 showed that Singapore has an increase in BOT surplus in services with the EU, extract 7 also state that EU has a sizable BOT surplus in goods and services with Singapore. This means Singapore is experiencing a sizable BOT deficit in goods and services with the EU.
- Hence, the trade pact may not benefit Singapore if any increase in real national income leads to higher expenditure on imports given the high marginal propensity to import in Singapore.

Evaluative Conclusion:

Whether Singapore will benefit from the trade pact with the EU will depend on a number of factors such as:

- The impact on overall Balance of trade in goods and services from the changes in price of Singapore's imports and exports to the EU due to the mutual elimination of tariffs.
- Duration for the actual collaboration on digital trade and green economy for sustainable growth to take place between the two economies.
- Increase digitalisation trade and its impact on structural unemployment and inclusive growth in the Singapore economy.