Q1. With effect from 1 July 2022, the Malaysian government has decided not to float the price of chickens, instead a new price ceiling has been implemented. This decision was made to safeguard the interests of Malaysian families so that they are not burdened by rising prices and cost of living.

Source: Channelnewsasia, 24 June 2022

(a) Suppose the Malaysian government decides to remove the price ceiling in the market for chickens.

Following the removal of price ceiling, explain how the price mechanism will allocate the scarce resources and how consumer and producer surplus will change. [10]

Introduction

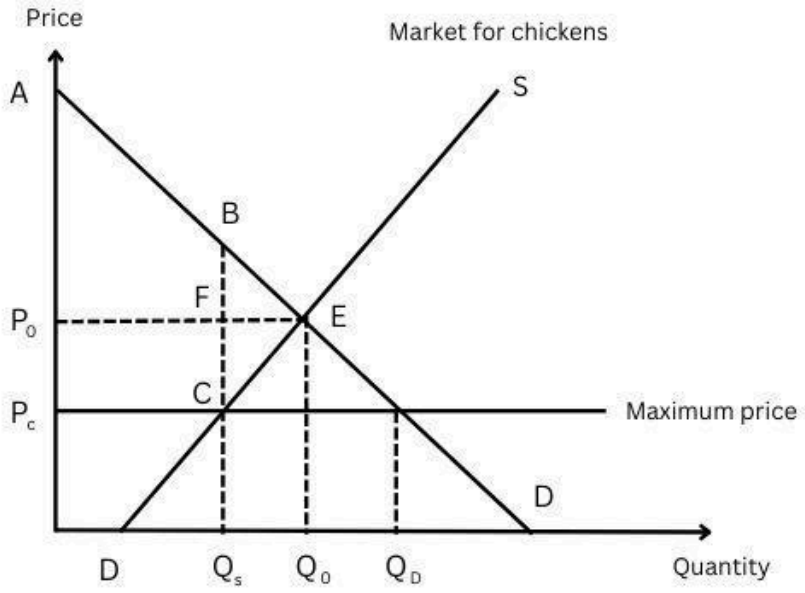
The price mechanism is the system where the forces of demand and supply determine the prices of goods and services, and the changes in prices cause changes in resource allocation. The price mechanism is the invisible hand that allocates scarce resources, based on the self-interest of consumers and producers, to result in the right mix of goods and services for society, i.e., allocative efficiency.

The Malaysian government has intervened in the market prior to July 2022 and has imposed a price ceiling – this is a legally established maximum price to prevent prices from rising above a certain level, and it is set below the market equilibrium price.

R1: To explain how the removal of price ceiling will affect the shortage and price of chickens, changing the allocation of scarce resources

Initially, the price of the chickens in Malaysia is Pc, which is the maximum price set by the government. At Pc, the quantity demanded is Qd, and quantity supplied is Qs, so a shortage of Qs – Qd arises.

Diagram 1:



Should the Malaysian government remove the price ceiling, the price is allowed to increase from Pc, and the initial shortage would cause an upward pressure on the price as consumers try to outbid one another for the limited quantity of chickens.

As price increases, quantity demanded of chickens fall as consumers' ability and willingness to purchase chickens fall due to income and substitution effect (*Note: the terms income and substitution effect are optional / good to know*). Hence price mechanism serves as a **rationing function** as those consumers who are not willing and/or not able to pay for the chickens at the higher price will be rationed out of the market. This addresses the resource allocation question of 'for whom to produce'.

At the same time, when price increases, the quantity supplied increases since it is more profitable for firms to produce. Hence price mechanism serves as a **signaling function**, as the higher price signals to potential producers to enter the chicken market. Price mechanism also serves as an **incentive function**, as the higher price motivates the chicken producers to increase output due to the possibility of higher revenues and profits. This addresses the resource allocation question of 'what and how much to produce'.

The price will keep increasing until the shortage is cleared. Eventually, the market returns to equilibrium where the equilibrium price is at P0, and the equilibrium qty is at Q0. The quantity supplied increases from Qs to Q0 following the removal of price ceiling, implying that more resources have been allocated to the production and consumption of chickens.

At the market equilibrium, allocative efficiency is achieved, which refers to the situation in which the society produces and consumes a combination of goods and services, in this case chickens, that maximises society's welfare.

R2: To explain how the removal of price ceiling may affect consumer surplus and producer surplus

Prior to the removal of the price ceiling, the consumer surplus which is the difference between the maximum amount that consumers are willing and able to pay for a given quantity of chickens and what they actually pay was ABCPc, while the producer surplus which is the difference between the amount received by producers for selling chickens and the minimum price that producers are willing and able to accept for supplying the good was PcCD.

With the removal of price ceiling, the price increases from Pc to the eq. price, P0. The quantity supplied and quantity consumed increases from Qs to Q0. Since producers benefits from selling a higher quantity at a higher price, producer surplus increases from PcCD to P0ED.

The effect on consumer surplus is indeterminate. The increase in price may increase consumer surplus for those who were willing to pay the higher price but were unable to do so under the price ceiling. However, some consumers who were able to purchase the good or service at the lower price ceiling may now find it more expensive and may no longer be able to afford it. This would decrease their consumer surplus.

The impact on consumer surplus thus depends on the relative PED and PES values. If the loss of consumer surplus due to the price increase (P0FCPc) is greater than the gain in consumer surplus due to the increase in quantity consumed (BFE), the consumer surplus decreases from ABCPc to AEP0.

Knowledge, Application, Understanding, Analysis		
L1	- Descriptive response without application of economic tools - Many glaring conceptual errors	1-4
L2	- Developed but one-sided explanation on either of the requirements - Underdeveloped explanation of both requirements eg: not including the explanation of the functions of price mechanism while explaining the effect of price change on resource allocation.	5-7
L3	- An analytical response without gaps in explanation on both requirements – including analysis of how the removal of price ceiling would affect the market outcomes (i.e., price and qty), how the price change affects the allocation of resources and distribution of output, which will also include the functions of price mechanism, and how the consumer surplus and producer surplus will be affected.	8-10

(b) Discuss the appropriate measures that the Malaysian government can adopt to ensure the affordability of chickens. [15]

Introduction

In a free market, the equilibrium price of chickens will be determined by forces of demand and supply. Due to demand or supply factors such as rising incomes or rising cost, the eq. price of chickens may rise, making it less affordable for Malaysian households, which would mean there is an inequitable distribution of chickens.

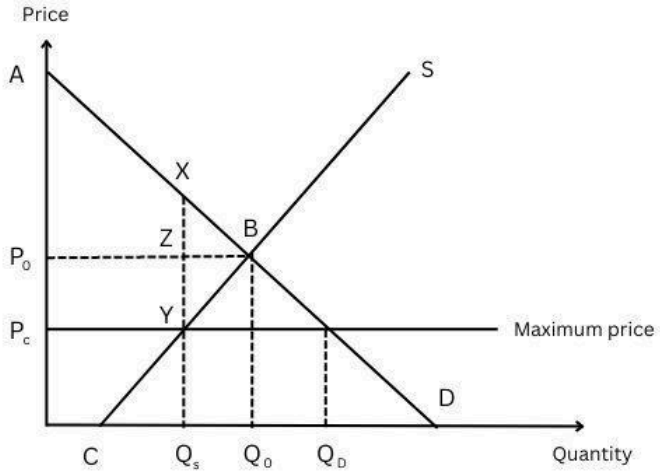
The government's objective is to bring down the price of chickens, so that it will be more affordable for Malaysian households, and this may promote equity.

To promote equity, the government may impose a price ceiling like the one prior to 1 July 2022, and provide subsidies.

R1: To explain how the imposition of price ceiling may ensure the affordability of chicken

Initially, equilibrium price of chickens and equilibrium qty of chickens, P0 and Q0 respectively determined by forces of demand and supply.

Diagram 2:



The Malaysian government may deem the eq. price, P0 to be too high, and may impose a maximum price of Pc, which is set at a price level below P0. At a lower price, more consumers especially the low income will be able to afford chickens, hence this promotes equity, i.e., fairer distribution of chickens

*Note: given that the government's goal is to make chickens affordable, analysing the impact on consumer surplus is unnecessary

EV: to consider the limitations or the constraints of imposing price ceiling to increase affordability

- However, the imposition of price ceiling to increase the affordability of chickens may create a shortage in the market (Qd – Qs). That means resources are allocated in an

inefficient manner. There will be a welfare loss of Area XBY because the social surplus decreases from Area ABC to Area AXYC.

EV: to apply PED or PES to consider the extent of the shortage

- Prior to July 2022, the government has decided to impose a price ceiling on chickens, which may suggest that chicken is a staple food for most Malaysian households, hence the government has intervened to make it affordable. So, it is likely that PED of chickens in Malaysia is less than 1. When price decreases from P0 to Pc, quantity demanded is likely to increase by less than proportionate, hence the shortage will be less severe. Hence, price ceiling might be an appropriate measure. Furthermore, to prevent a shortage the Malaysian government may use a non-price rationing system, where each household is given a specific quota to purchase the chickens each week.

EV: consider the unintended consequences on other stakeholders

- However, the policy of price ceiling to increase affordability comes at the expense of the producers of chickens. The producer revenue decreases from P0 x Q0 to Pc x Qs, and the producer surplus decreases from P0BC to PcYC. This might not be fair for the chicken producers in Malaysia. Hence a more appropriate measure might be indirect subsidies.

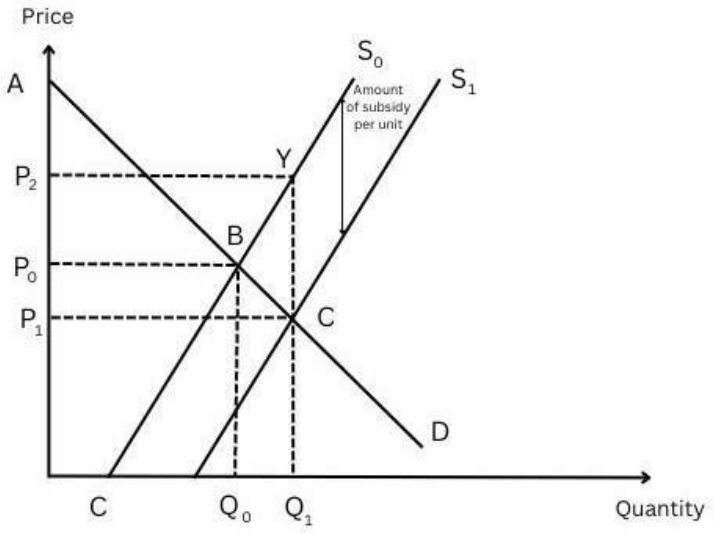
*Note: evaluating the effect on producer surplus is relevant because the question concerns the 'appropriateness' of the measure, and considering unintended consequences can be one of the key criterion

R2: to explain how the government may provide subsidies to increase the affordability of chickens

Indirect subsidies are monetary grants given by the government to the producers of chickens, to partially offset their cost of production to encourage more production.

Indirect subsidies will be given to the chicken producers in Malaysia. For every unit of chicken produced, the producers will receive an amount of subsidy. This helps to partially offset the cost of production, which increases the profitability and hence the supply of chickens increases, shown by rightward shift of supply curve from S0 to S1

Diagram 3:



At initial eq. price, P0, there will be a temporary surplus which puts a downward pressure on the price of chickens. As price of chickens decreases, quantity demanded increases as more consumers are willing and able to purchase the chickens, at the same time, quantity supplied decreases due to lower profitability. The price will keep decreasing until the surplus is cleared. Eventually, eq. price decreases from P0 to P1, and at this lower price, it is more affordable for Malaysian households, hence promoting equity.

EV: to consider the limitations or the constraints of imposing subsidies to increase affordability

- However, like the policy of price ceiling, the provision of indirect subsidies may create inefficiencies. The sum of the gain in producer surplus (Area P2YBP0) and the gain in consumer surplus (P0BCP1) is less than the total government expenditure to finance the subsidies (P2 – P1) x Q1. Hence there will be a welfare loss of Area BYC.

EV: Comparative analysis of both policies

- However, subsidies might be a better policy than price ceiling, as it does not hurt the domestic chicken producers. Rather, the producers will earn more revenues from (P0 x Q0) to (P2 xQ1), and there is a gain in producer surplus from P0BC to P2YC.

EV: But, the provision of subsidies may put a strain on the government's budget.

- To finance the subsidy, the government incurs an expenditure of (P2 – P1) x Q1. There will be an opportunity cost incurred by the government, since the monies used to finance the subsidy could have been used in other areas like provision of healthcare and education.

Conclusion:

The appropriateness of the measures depends on:

- Ability of the government to finance the subsidy – if the Malaysian government faces budget constraints, and has incurred persistent budget deficits, subsidies might not be an appropriate measure.
- Significance of the unintended consequences – As mentioned earlier, since PED of chickens likely to be less than 1, the price ceiling is unlikely to cause a severe

shortage. Price ceiling can be used as a short-term measure to at least bring down the price with certainty.

Knowledge, Application, Understanding, Analysis		
L1	- Descriptive response without application of economic tools such as DD-SS - Glaring conceptual errors	1-4
L2	- Developed but one-sided explanation on either of the requirements - Underdeveloped explanation of both requirements eg: gaps in explanation of how policy works to reduce price and increase affordability	5-7
L3	- An analytical response without gaps in explanation on both requirements – with explicit link to affordability and equity.	8-10
Evaluation		
E1	- A brief evaluation attempt is made in the form of simple evaluative statements that are not explained. Eg: response evaluated that provision of subsidies may put a strain on government's budget, but does not elaborate further on the implications	1-2
E2	- Some attempt to evaluate each policy, but no summative conclusion/recommendation provided eg: response evaluated that one of the constraints of using a policy of price ceiling is that a shortage may arise, but does not elaborate and provide recommendation on how to resolve the unintended consequence, or	3-4
E3	- Both requirements are evaluated, and a summative conclusion/recommendation is provided using evaluation criteria such as resolving unintended consequences, significance of the constraints, comparative analysis of policies	5