

2.3 Competitive market equilibrium



Learning objectives

2.3 Competitive market equilibrium	Depth	Diagrams and calculations
Demand and supply curves forming a market equilibrium	AO4	Diagram: market equilibrium
Shifting the demand and supply curves to produce a new	AO2	Diagram: showing changes in
excess supply	A04	mechanism
Functions of the price mechanism	AO2	
Resource allocation (Signalling, Incentive)		
Rationing		

Learning objectives

2.3 Competitive market equilibrium	Depth	Diagrams and calculations
Consumer and producer surplus	AO2	Diagram: showing consumer
	AO4	surplus and producer surplus
Social/ community surplus	AO2	(social / community surplus) –
	AO4	maximized at competitive market
Allocative efficiency at the competitive market equilibrium:	AO2	equilibrium
Social/community surplus maximized at equilibrium	AO4	
Marginal benefit (MB) equals marginal cost (MC)		Calculation (HL) only:
		Consumer surplus and producer
		surplus from a diagram



Real world example



How might the Uber market be related to demand, supply, and market equilibrium?



Market equilibrium occurs at the price where quantity demanded equals to quantity supplied. At this point, the market is cleared of any shortage or surplus.





Market equilibrium – activity

The market demand and supply of Uber rides is displayed below.

Price of rides (\$/km)	Quantity demanded (Riders)	Quantity supplied (Drivers)
25	2,000	10,000
20	4,000	8,000
15	6,000	6,000
10	8,000	4,000
5	10,000	2,000

- 1. Plot the demand and supply curves.
- 2. Identify the equilibrium price & quantity.
- 3. What happens if the price is \$10/km?
- 4. What happens if the price is \$25/km?



Market equilibrium – activity

1. Plot the demand and supply curves.

Price of rides (\$/km)	Quantity demanded (Riders)	Quantity supplied (Drivers)
25	2,000	10,000
20	4,000	8,000
15	6,000	6,000
10	8,000	4,000
5	10,000	2,000



Market for Uber Rides

Market equilibrium – activity

Price of rides (\$/km)	Quantity demanded (Riders)	Quantity supplied (Drivers)
25	2,000	10,000
20	4,000	8,000
15	6,000	6,000
10	8,000	4,000
5	10,000	2,000

- 2. Identify the equilibrium price and quantity.Equilibrium price = \$15Equilibrium quantity = 6,000 rides
- What happens if the price is \$10/km?
 Market shortage of 4,000 drivers.
- What happens if the price is \$25/km?
 Market surplus of 8,000 drivers.

Market equilibrium

Price of rides (\$/km)	Quantity demanded (Riders)	Quantity supplied (Drivers)
25	2,000	10,000
20	4,000	8,000
15	6,000	6,000
10	8,000	4,000
5	10,000	2,000

At the **market equilibrium**, there are no surpluses or shortages. The market "clears" where every rider is matched with a driver and vice versa.



Shortage – excess demand

Price of rides (\$/km)	Quantity demanded (Riders)	Quantity supplied (Drivers)
25	2,000	10,000
20	4,000	8,000
15	6,000	6,000
10	8,000	4,000
5	10,000	2,000

If the price is lower than the equilibrium price, the quantity demanded is greater than quantity supplied, resulting in **excess demand (shortage)**.



Surplus – excess supply

Price of rides (\$/km)	Quantity demanded (Riders)	Quantity supplied (Drivers)
25	2,000	10,000
20	4,000	8,000
15	6,000	6,000
10	8,000	4,000
5	10,000	2,000

If the price is higher than the equilibrium price, the quantity supplied is greater than quantity demanded, resulting in **excess supply (surplus)**.



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Key terms

Market equilibrium: occurs at a price where quantity demanded equals its quantity supplied. The market has no shortages or surpluses.

Equilibrium price: Price at which quantity demanded equals quantity supplied.

Equilibrium quantity: Quantity at which quantity demanded equals quantity supplied.

Surplus (Excess supply): When quantity supplied exceeds quantity demanded.

Shortage (Excess demand): When quantity demanded exceeds quantity supplied.



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- Page 70-71
- Paper 2 and 3 Exam Practice Question 5.1
- [4 marks]
- Paper 2 and 3 Exam Practice Question 5.2
- [2 marks]
- Paper 2 and 3 Exam Practice Question 5.3
- [5 marks]







Uber's surge pricing is an example of how the **price mechanism** reallocates resources.

The price mechanism uses **signals** and **incentives** to allocate resources via the forces of demand and supply in competitive markets.





Real world example – price mechanism

Using the example of Uber, explain how the price mechanism allows a market to reach equilibrium following an increase in demand.



- During peak periods, more people may demand
 Uber as a means of transport, increasing demand
 from D1 to D2.
- 2. Hence, at the regular Uber pricing of P1, excess demand (shortage) of Q3 Q1 occurs.
- Some consumers are willing and able to pay prices higher than P1 to secure an Uber ride. This exerts an upward pressure on price.
- 4. A higher price acts as a signal to producers (Uber drivers) and informs them that there are consumers (riders) who wish to get a ride at higher prices.



- 5. As price increases from P1, suppliers (Uber drivers) are incentivized to increase quantity supplied beyond Q1 due to the law of supply.
 More Uber drivers come to the area to provide their services.
- 6. Hence there is an upward movement along the supply curve from point *a* towards point *c*.



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- 7. At the same time, as price increases from P1, some consumers (riders) are disincentivized to purchase rides, so quantity demanded falls from Q3 due to the law of demand. Some riders may opt for alternative forms of transport.
- 8. Hence there is an upward movement along the demand curve from point *b* towards point *c*.



- The increase in price from P1 continues until quantity supplied equals to quantity demanded, at point *c*. A new market equilibrium forms at P2 and Q2. At this point, the market clears.
- 10. The price mechanism successfully **rations** resources to consumers who are willing to pay a higher price. Thus, it addresses the basic economic question of "to whom to produce for?"



Price mechanism – signals and incentives

Signaling function: price conveys market information to producers and consumers for making production and consumption decisions, in order to allocate resources.

Incentive function: price provides incentives for producers and consumers to change their behaviors to maximize their own benefits, in order to allocate resources.





Price mechanism - rationing



The rationing function serves to **allocate scarce resources**, by increasing the market price to deter some consumers from buying the good.

An increase in price by the price mechanism helps to reduce quantity demanded, which is useful to eliminate shortages.



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- Page 71
- Paper 2 and 3 Exam Practice Question 5.4
- [4 marks]

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- Paper 1 Exam Practice Question 5.5
- [10 marks]







Real World Example - Essay

Video: <u>2 New Low-Cost Airlines Launch as Americans Return To The Skies</u>

Using the airline industry as an example, explain how the price mechanism works to reallocate resources in a market following an increase in market supply.



Producer surplus

Producer surplus is the positive difference between the price that a producers receive from selling a good and the minimum amount they prepare to sell the good at.



Producer surplus is identified by the area below the selling price and above the supply curve for the quantities sold.

(HL only)

Producer surplus can be calculated by the area of the triangle below P and above the supply curve.



Producer surplus



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Consumer surplus

Consumer surplus is the positive difference between the amount that a consumer is willing and able to pay for a good and the amount they actually pay.



Consumer surplus is identified by the area above the buying price & below the demand

curve for the quantities purchased.

(HL only)

Consumer surplus can be calculated by the area of the triangle above P and below the demand curve.



Producer surplus



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Social surplus (Community surplus) and allocative efficiency

Social surplus is the sum of consumer surplus and producer surplus at a particular price and quantity.







Social surplus (Community surplus) and allocative efficiency

Allocative efficiency is the socially optimum outcome where resources are allocated such that the sum of consumer and producer surplus are maximized.



In other words, no one can be better-off without making someone else worse-off. This is attained at the competitive market equilibrium.



How would social surplus be shown if producers charged a price above the

equilibrium?



Marginal benefits and marginal costs



The demand curve can also be considered the

marginal benefit curve.



Why does marginal benefit decrease as quantity increase?

The supply curve can also be considered the **marginal cost curve**.



Why does marginal cost increase as

quantity increase?



Marginal benefits and marginal costs





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- Paper 3 Exam Practice Question 5.6
- [12 marks]
- Paper 3 Exam Practice Question 5.7
- [10 marks]







Test your knowledge on this unit: <u>Kahoot!</u>

