

## Module 3a: Basic Demand and Supply

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15/01/2023

The Law of Supply

Shifts in Supply

Supply vs. Quantity Supplied

Demand and Supply Together

8 Cases

## The Law of Supply

# Supply

**Supply** is the amount (quantity) of a product or service that firms are willing and able to sell at different prices.

Resources and technology determine what it is possible to produce. Supply reflects a decision about which technologically feasible items to produce.

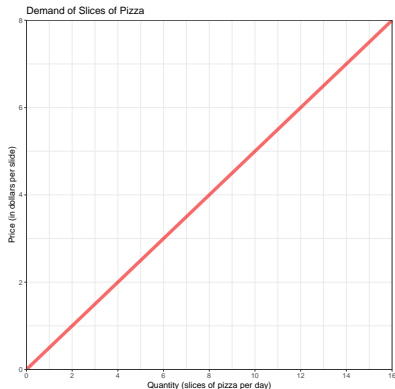
# Law of Supply

The **law of supply** states that the price of a product or service and the quantity supplied are directly (positively) related.

The **law of supply** results from the general tendency for the marginal cost of producing a good or service to increase as the quantity produced increases.

Producers are willing to supply a good only if they can at least cover their **marginal cost** of production.

# Graphical representation of the Supply Curve



## Supply Schedule

	price_s	quantity_s
1	0	0
2	1	2
3	2	4
4	3	6
5	4	8
6	5	10
7	6	12
8	7	14
9	8	16

## Minimum Supply Price

A supply curve is also a **minimum-supply-price curve**.

As the quantity produced increases, marginal cost increases.

The lowest price at which someone is willing to sell an additional unit rises.

In other words, the lowest price is the marginal cost.

## Shifts in Supply



# Shifts in Supply: The Determinants

**Cost of inputs**

**The price of related goods**

- ▶ Complements
- ▶ Substitutes

**Technology and productivity**

**Taxes and subsidies**

**Number of firms in industry**

## Supply vs. Quantity Supplied

## Changes in supply versus changes in quantity supplied

A change in a good's own price leads to a change in quantity supplied. This is a movement **on** the curve.

A change in one or more of the non-price determinants will lead to a change in supply. This is a movement **of** the curve

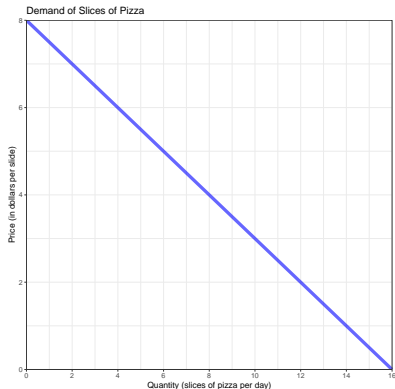
# Changes in Supply vs. Changes in Quantity Supply (Examples)

Changes in Supply

Changes in Quantity Supplied

## Demand and Supply Together

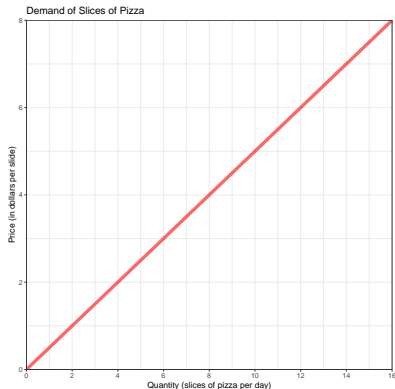
# Demand



## Demand Schedule

	price_d	quantity_d
1	8	0
2	7	2
3	6	4
4	5	6
5	4	8
6	3	10
7	2	12
8	1	14
9	0	16

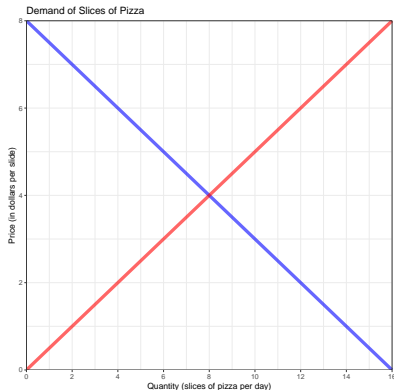
# Supply



## Supply Schedule

	price_s	quantity_s
1	0	0
2	1	2
3	2	4
4	3	6
5	4	8
6	5	10
7	6	12
8	7	14
9	8	16

# Demand and Supply Together



## Demand and Supply Schedule

	price	quantity_d	quantity_s
1	8	0	16
2	7	2	14
3	6	4	12
4	5	6	10
5	4	8	8
6	3	10	6
7	2	12	4
8	1	14	2
9	0	16	0



# Equilibrium

**Equilibrium** is the situation when quantity supplied equals quantity demanded at a particular price.

At this unique point demand and supply curves **intersect**.

No shortages or surpluses at equilibrium.

- ▶ Price regulates buying and selling plans.
- ▶ Price adjusts when plans don't match.

# Surpluses

A surplus is the situation when quantity supplied is greater than quantity demanded

Exists at any price above the equilibrium price  $P^*$ .

A surplus forces the price down.

# Surpluses

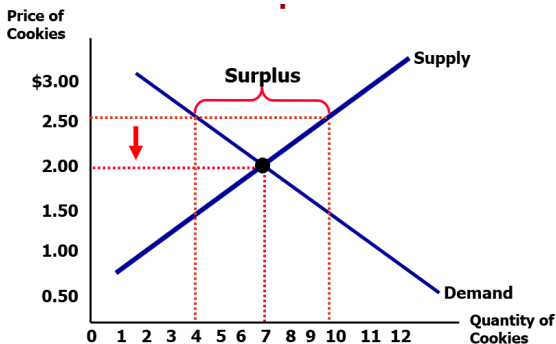


Figure 1: Surplus

# Shortages

A shortage is the situation when quantity demanded is greater than quantity supplied.

A shortage exists at any price below the equilibrium price a shortage forces the price up

Is not the same as scarcity

# Shortages

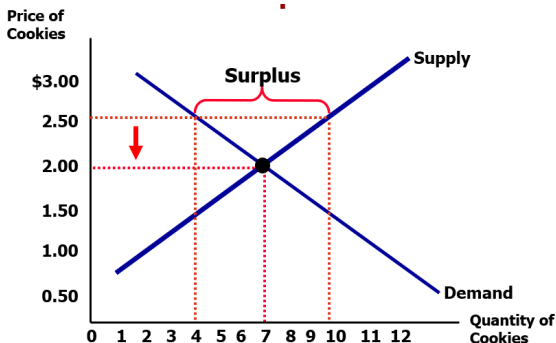


Figure 2: Shortage

## 8 Cases

# Demand Decrease (Case I)

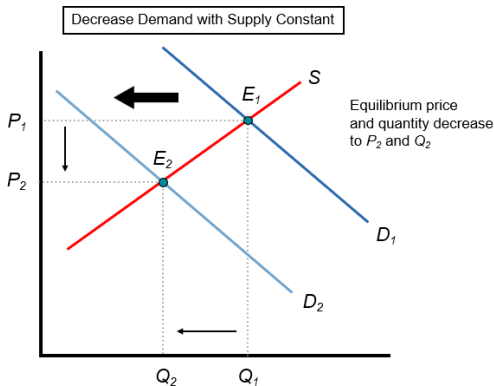


Figure 3: Demand Decrease

## Demand Increase (Case II)



## Supply Decrease (Case III)

# Supply Increase (Case IV)

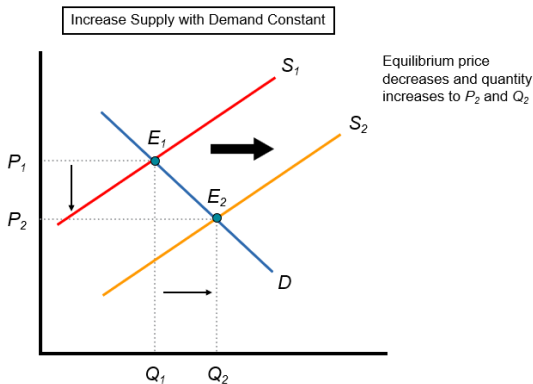


Figure 4: Supply Increase

## Demand Decrease & Supply Decrease (Case V)

## Demand Decrease & Supply Increase (Case VI)

## Demand Increase & Supply Decrease (Case VII)

## Demand Increase & Supply Increase (Case VIII)

# Summary

## Cases I-IV

- ▶ Decreases in demand decrease equilibrium price and quantity.
- ▶ Increases in demand increase equilibrium price and quantity.
- ▶ Decreases in supply increase equilibrium price and decrease equilibrium quantity.
- ▶ Increases in supply decrease equilibrium price and increase equilibrium quantity.

# Summary

## Cases V-VIII

When both demand and supply shift together results in conflicting pressure on price or quantity

The resulting effect depends upon how much each shift. If the size of shifts is not specified. Either equilibrium price or quantity will be indeterminate



# Summary

**Case V:** When both demand and supply decrease

- ▶ Change in price is indeterminate
- ▶ Quantity will decrease

**Case VII:** When demand increases and supply decreases and

- ▶ Price will increase
- ▶ Change in quantity is indeterminate