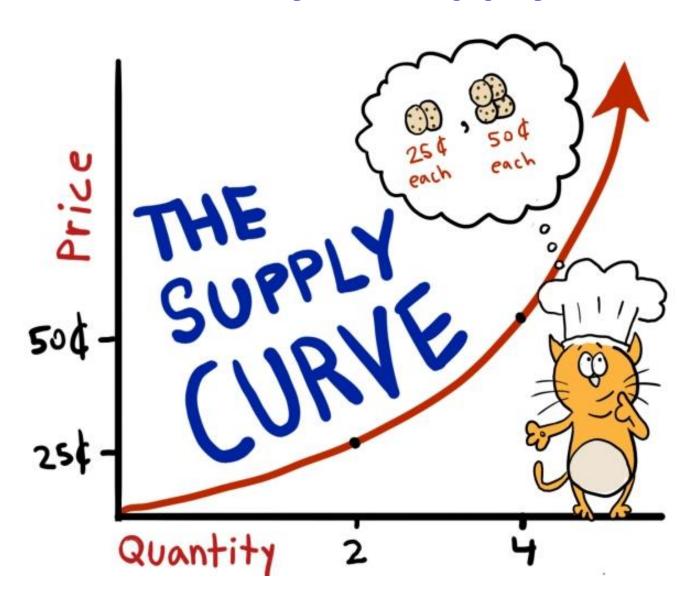
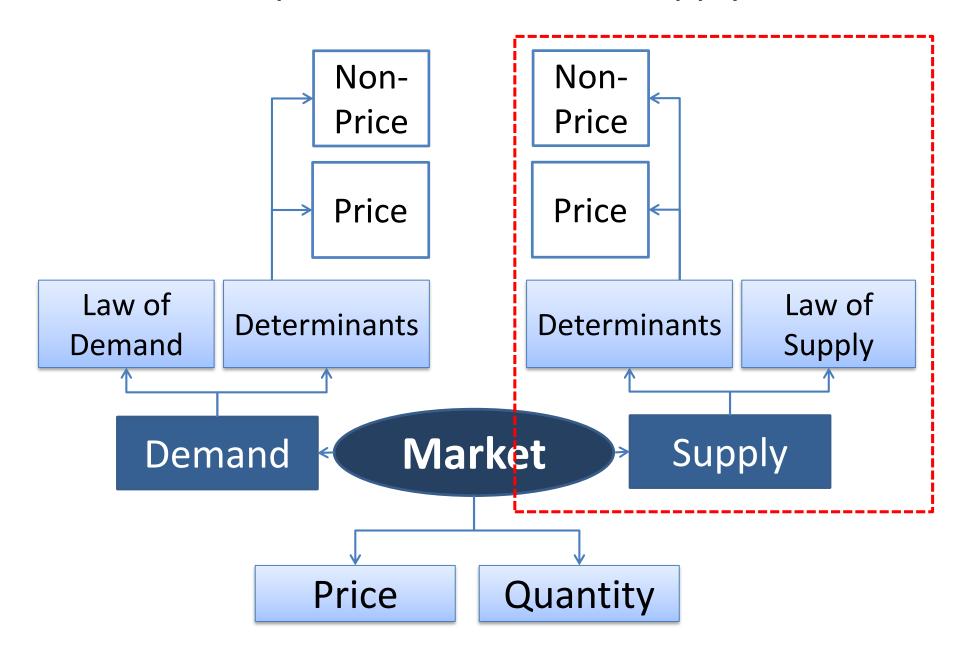
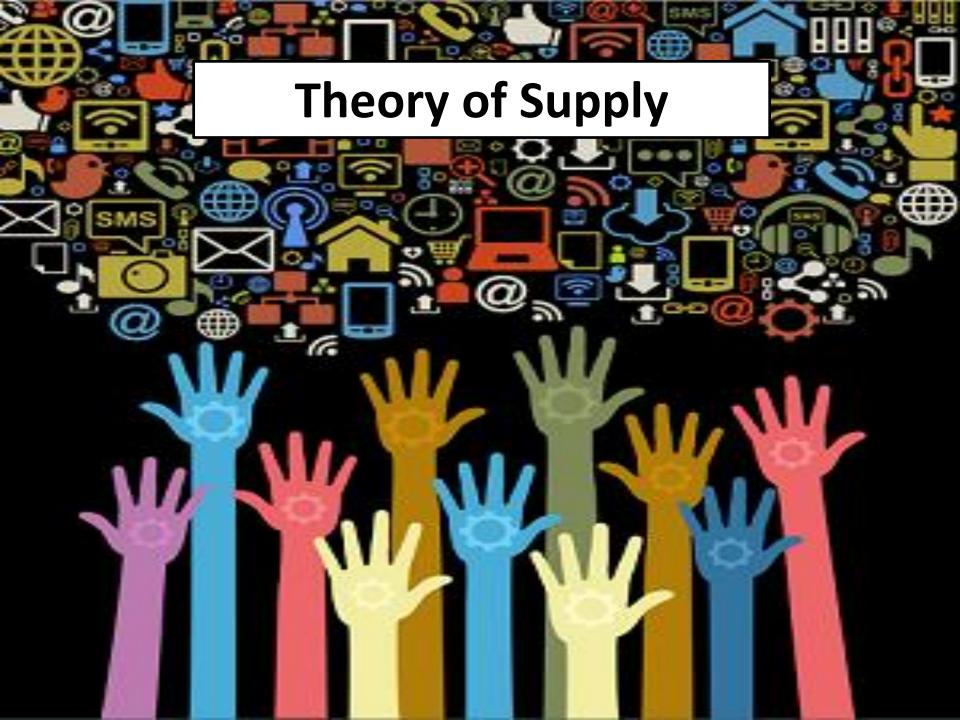
# **Theory of Supply**

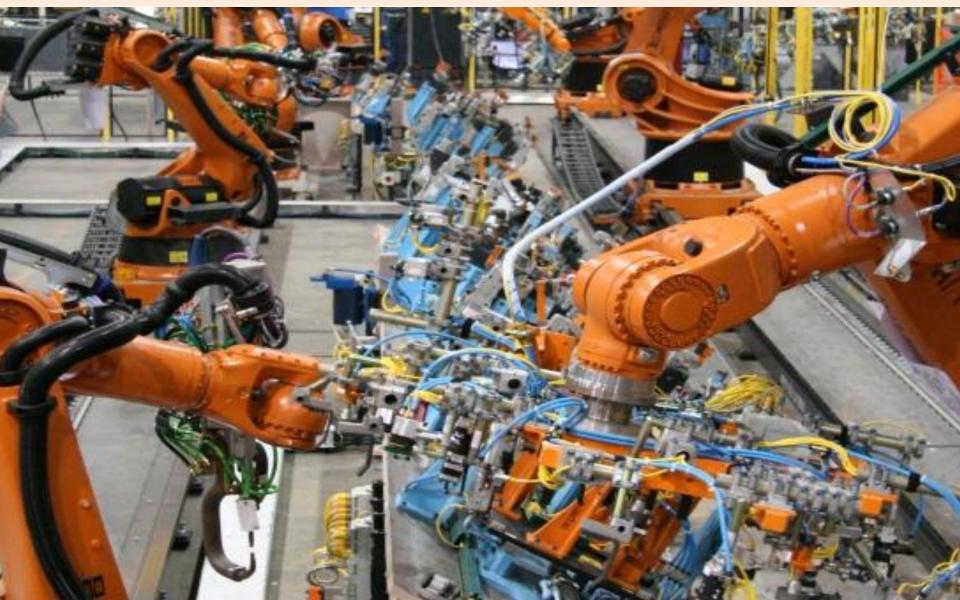


## Chapter 2: Demand and Supply





Why do producers choose to produce some goods and services but not others?



## Lesson Objectives

- 1. Define what is supply
- 2. Explain the law of supply
- 3. Differentiate between individual supply & market supply
- 4. Distinguish between change in quantity supplied & change in supply
- 5. Explain how various non-price factors affect supply
- 6. Explain exceptional supply curve



# **Theory of Supply**

Supply of a good refers to the amount of a good a producer is willing and able to sell in a given period of time, at a given price, ceteris paribus (other things remaining constant).

What is the objective of producers?





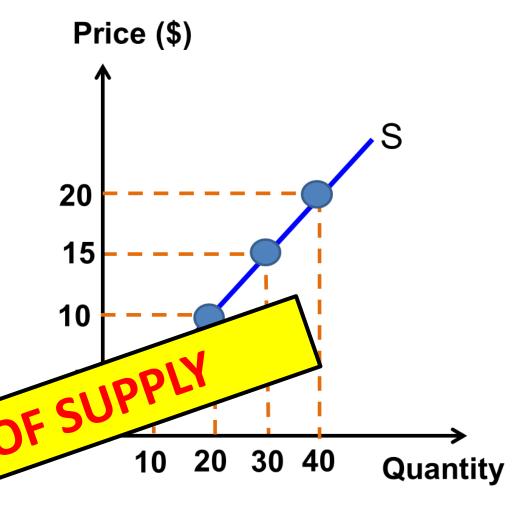
**Revenue - Cost** 

# Supply can be illustrated by the following.....

Price per unit (\$)	Quantity Supplied (units)	
5	10	
10	20	
15	30	
20	40	



Price per unit (\$)	Quantity Supplied (units)	
5	10	
10	20	
15	30	
20	40	

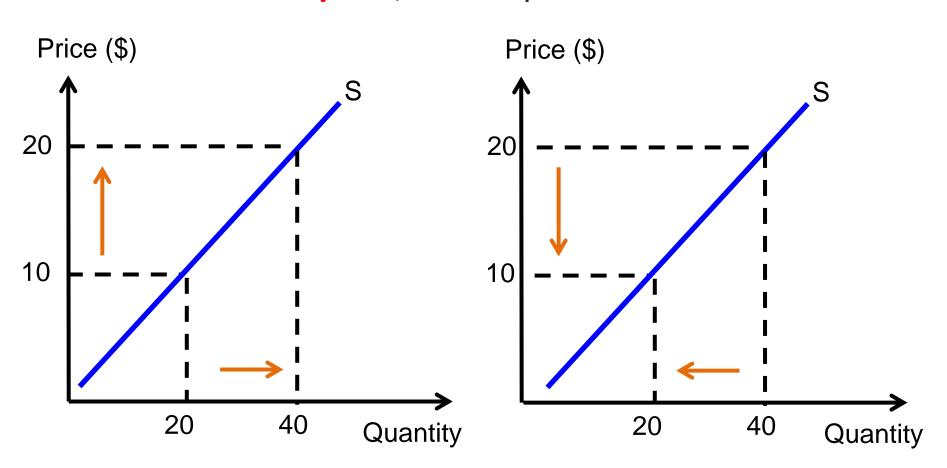


What do y about the relationship between price and quantity supplied?

How does the relationship affect the supply curve?

# The Law of Supply

The law of supply states that in a given time period, the quantity supplied of a product is directly related to its price, ceteris paribus.





3. Individual vs Market Supply

## Individual vs Market Supply

## **Individual Supply**

Refers to the supply for a good or service by an individual producer.

## **Market Supply**

Refers to the **SUM** of the individual supply for a good or service by all the producers in the market.

# **Individual vs Market Supply**

Price (\$) per lesson	Quantity Supplied of Economics Tuition Lesson		
	David	Amy	Market
60	0	2	2
70	2	3	5
80	4	4	8
90	6	5	11
100	8	6	14
110	10	7	17

## **Individual vs Market Supply**



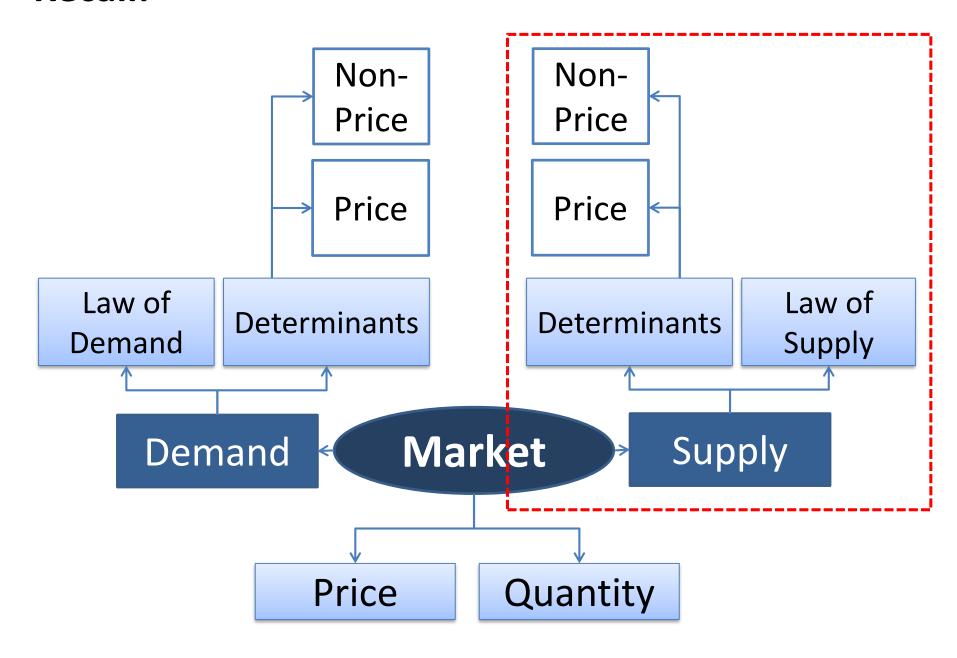


## **Recall:**

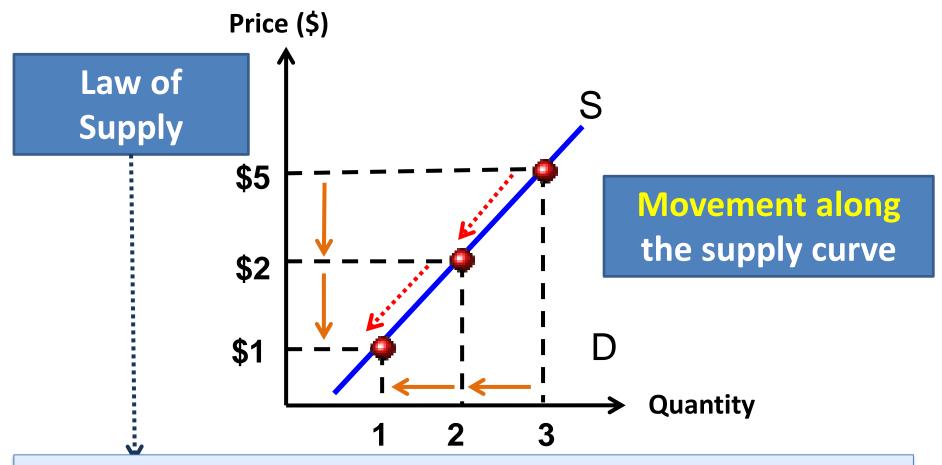
Supply of a good refers to the amount of a good a producer is willing and able to sell in a given period of time, at a given price, ceteris paribus (other things remaining constant)

What affects ability and willingness to sell?

### **Recall:**



## **Change in Price of the Good**



Cause: Fall in the price of the good

**Effect:** Fall in the quantity supplied of the good

ceteris paribus...

# Factors affecting SUPPLY

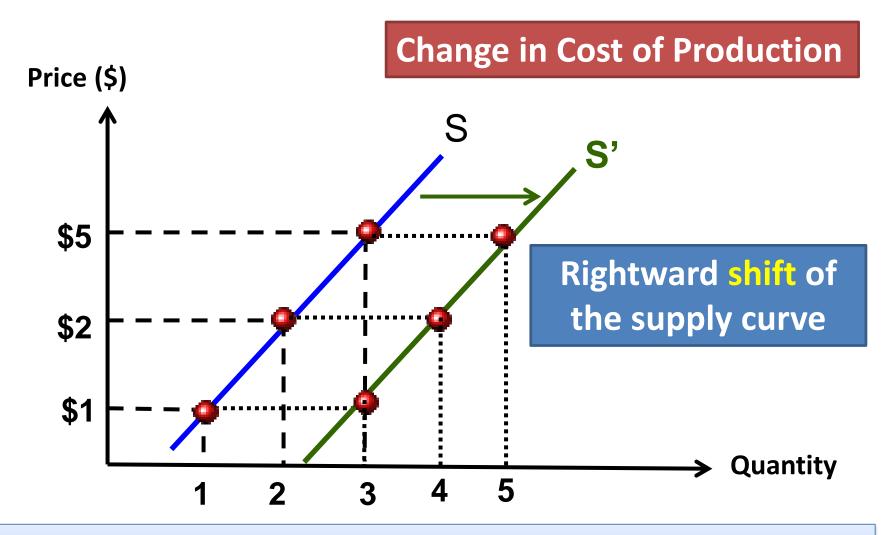
Change in price of the good

Change in non-price factor

Change in price of the good will affect the QUANTITY
SUPPLIED ...

... and cause a movement along the supply curve

## **Change in Non-Price Factor**



An decrease in cost of production will lead to a increase in supply and cause a rightward shift in the supply curve

## Factors affecting SUPPLY

Change in price of the good

Change in non-price factor

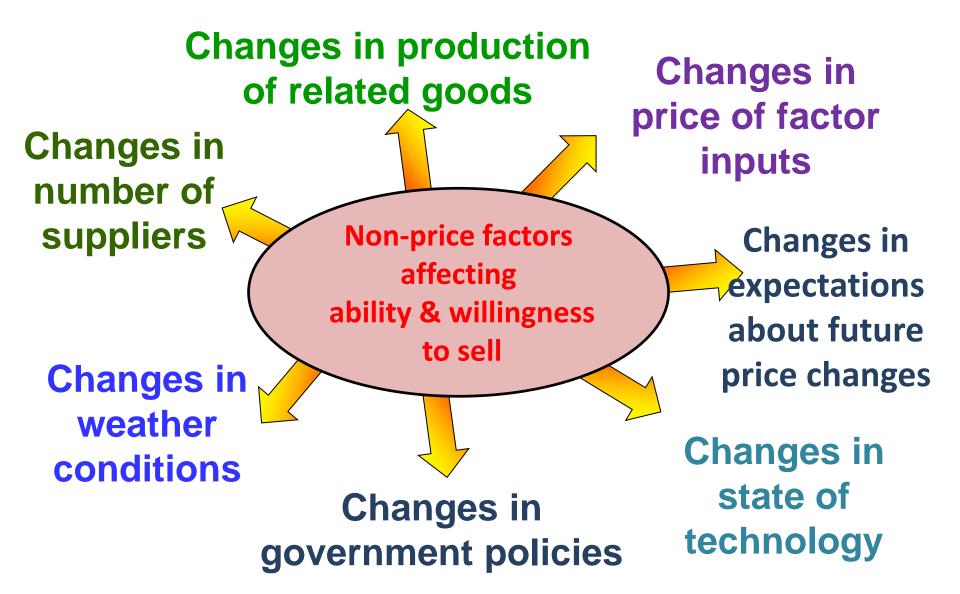
Change in price of the good will affect the QUANTITY
SUPPLIED ...

Change in non-price factors will affect the SUPPLY ...

... and cause a movement along the supply curve

... and cause a shift in the supply curve

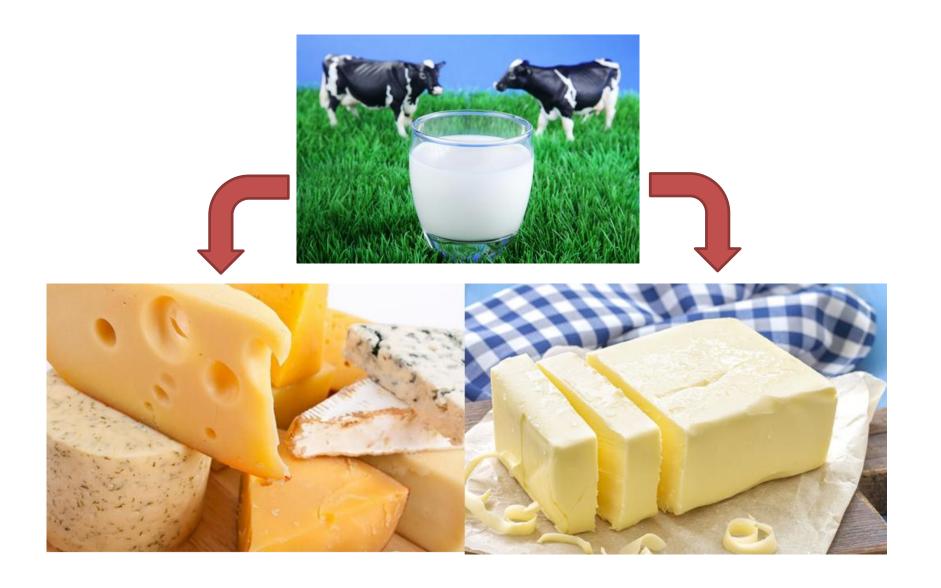
# **Non-Price Supply Factors**



### CHANGES IN PRODUCTION OF RELATED GOODS







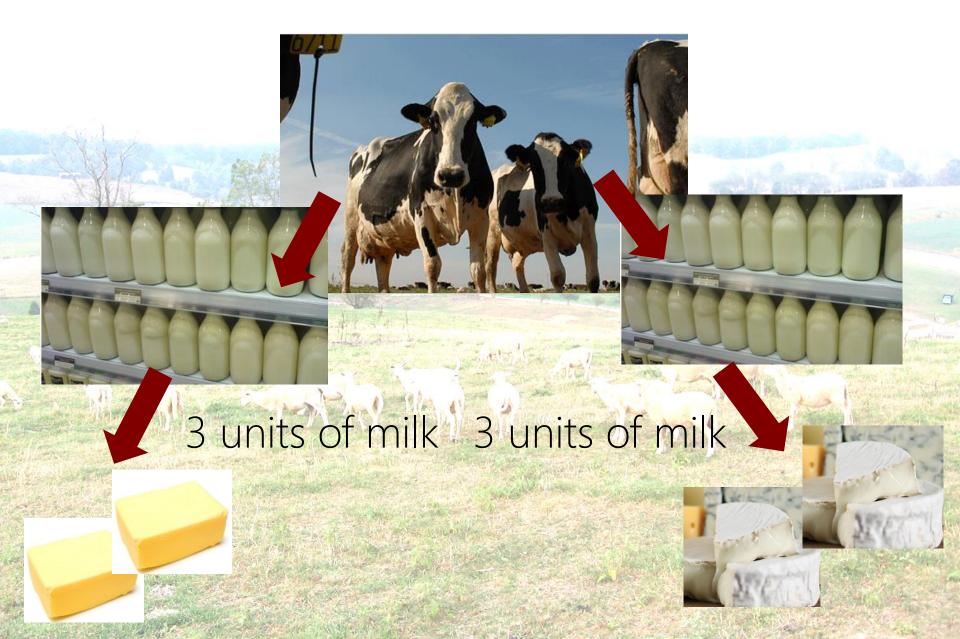
## PRODUCTS IN COMPETITIVE SUPPLY

# Changes in Production of Related Goods: Products in Competitive Supply

When a product is in competitive supply, it uses some of the same resources used to produce another product.

Also known as substitutes in supply.

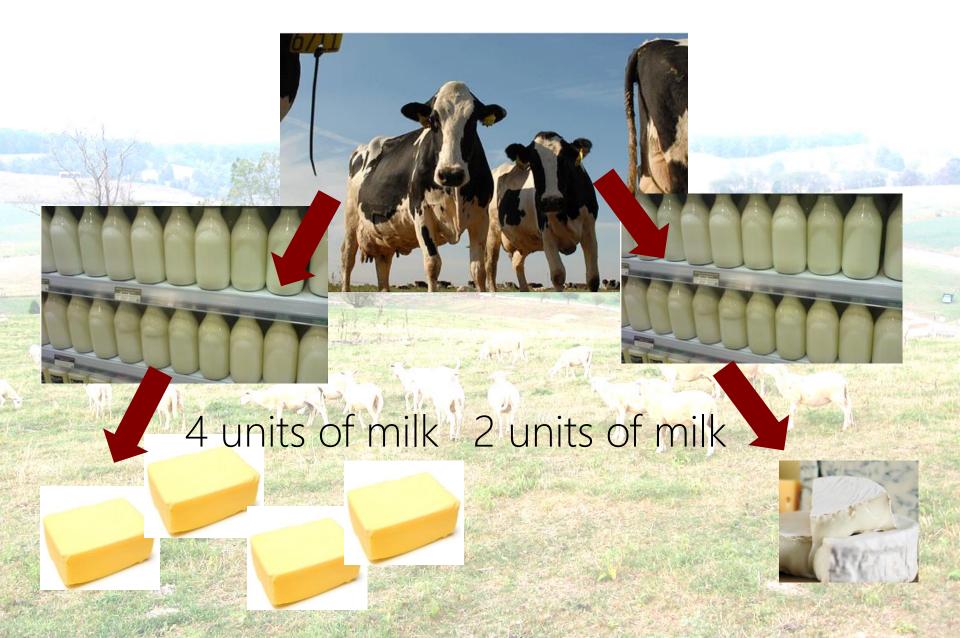
## About the cow, its milk, butter & cheese



# What happens if the price of butter increases?

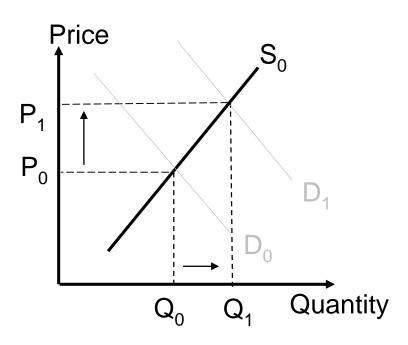


## About the cow, its milk, butter & cheese

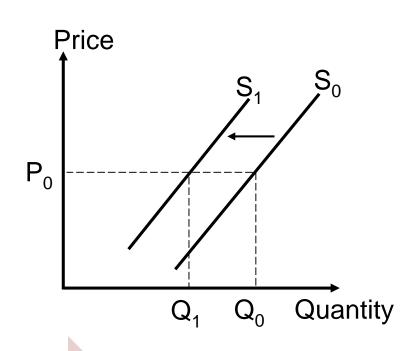


# Changes in Production of Related Goods: Products in Competitive Supply

#### Market for Butter



Market for Cheese



♠ price of butter

Producers produce more butter

(**★** quantity supplied)

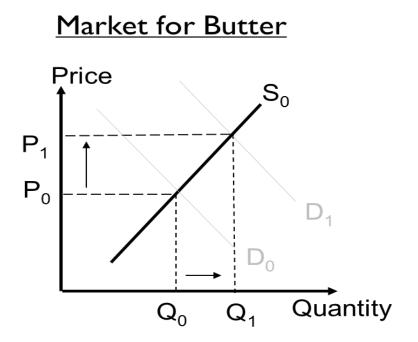
Diverts resources away from cheese

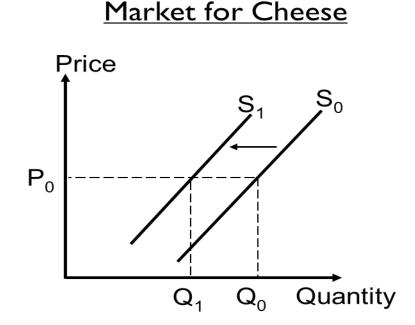
**▼ supply** of cheese

Supply curve shifts leftwards

# Changes in Production of Related Goods: Products in Competitive Supply

For goods in competitive supply, increased production of one will mean diverting some resources away from producing the other.



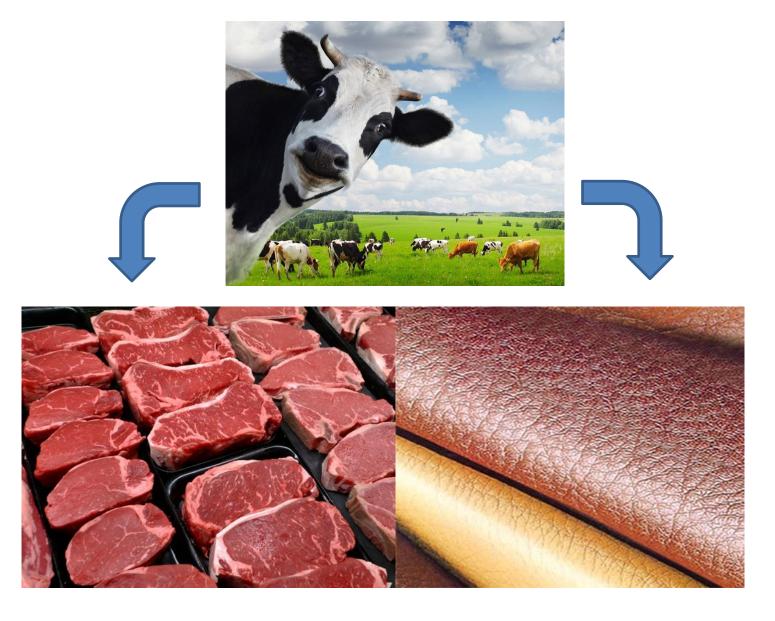


### How US Biofuel Policy Is Destroying Guatemala' Food Supply

A New York Times report highlights how biofuel policy in the US and Europe has produced a food crisis in Guatemala. The country was once self-sufficient in corn production but their domestic corn supplies has dropped nearly 30% between 1995 and 2005.

In 2007, the US expanded its biofuel standards and began relying on corn to meet them, driving up demand. Larger farms and industrial producers also took up much of Guatemala's available cropland to produce sugar cane, vegetable oil, and other crops to meet increased global demand for biofuel, due to European as well as U.S. policies.

This left farmers with less and less land to work and the average Guatemalan — whose diet is heavily corn-based — with no where else to turn for affordable food. And because the UN Food Program in Guatemala's primary food supplement is a mix of corn and soy, it cannot afford to help all Guatemalan children in need. Its policy is to buy corn locally, but no extra corn is grown here anymore. And Guatemalans cannot go back to the land because so much of it is being devoted to growing crops for biofuel.

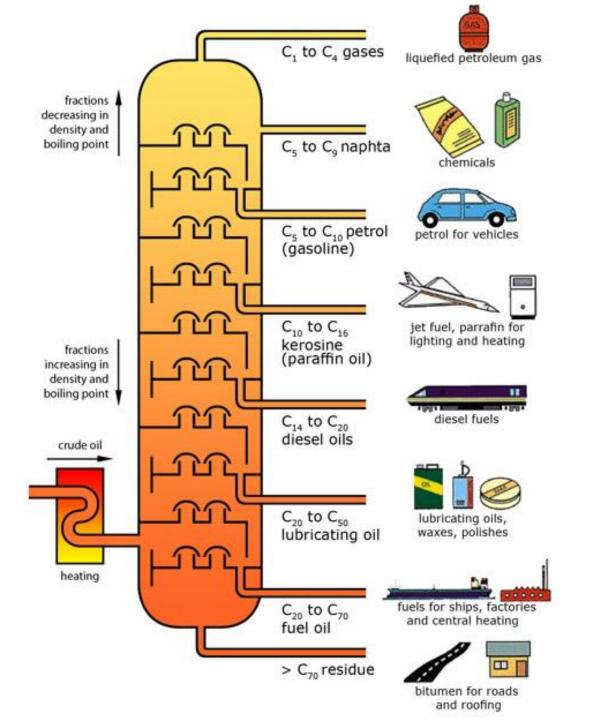


## PRODUCTS IN JOINT SUPPLY

# Changes in Production of Related Goods: Products in Joint Supply

Products in joint supply are two goods where producing more of one good leads to an increase in the production of the other good. i.e. one is a by-product of the other.

E.g. benzene and petrol, beef and leather



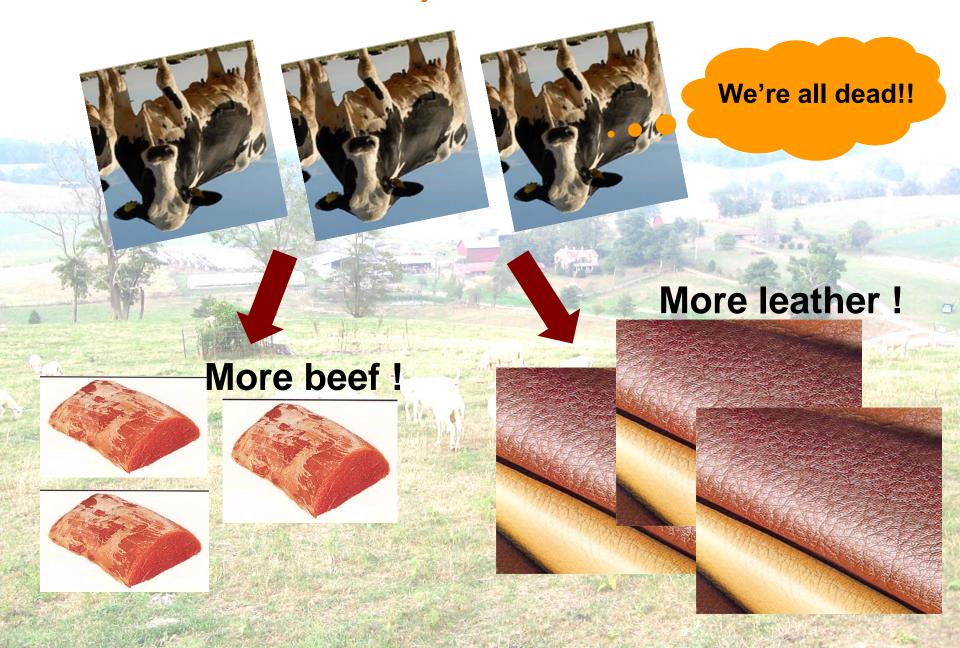
# About the cow, its meat & hide ...



# What happens if the price of beef increases?

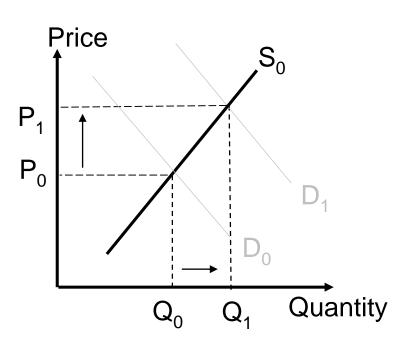


## About the cow, its meat & hide ...

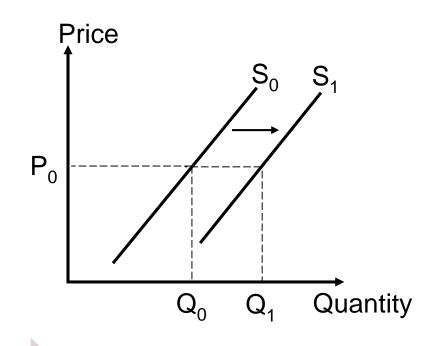


# Changes in Production of Related Goods: Products in Joint Supply

Market for Beef



Market for Leather



♣ Price of beef

Producers produce more beef

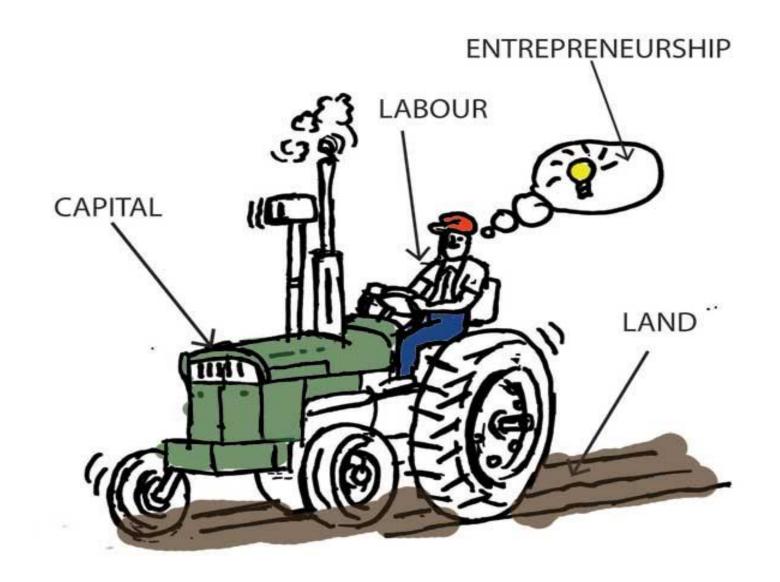
(**★quantity supplied**)

Leads to increased production of leather

**↑** supply of leather

Supply curve shifts rightwards

### **CHANGES IN PRICE OF FACTOR INPUTS**



## **Changes in Price of Factor Inputs**

 Factor prices refer to the cost of factors of production (e.g. wages, rent payments, raw material prices etc.)

How does a change in factor prices affect willingness & ability to sell?

#### **Recall:**

Objective of producers is to maximise profits







## **Changes in Price of Factor Inputs**

 Factor prices refer to the cost of factors of production (e.g. wages, rent payments, raw material prices etc.)



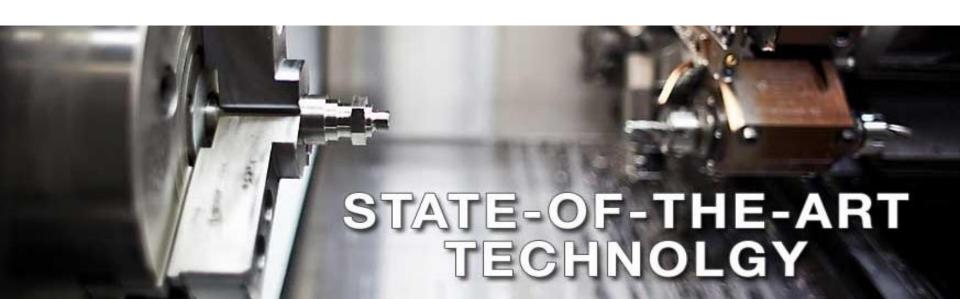
.. and vice versa

## CHANGES IN EXPECTATIONS ABOUT FUTURE PRICE CHANGES

- If the seller expects the price of a good to rise in the future, the seller will store the goods now in order to sell more in the future.
- On the other hand, if the price of the good is expected to drop in the near future, sellers will earn more by placing goods on the market immediately before the price falls.
- Expectations of higher prices will reduce supply now, and expectations of lower prices will have the opposite effect.

#### **CHANGES IN STATE OF TECHNOLOGY**

- Technological changes take place over time as a result of innovation and enterprise.
- With improved production methods, factors of production will be more productive. The production of goods would increase, giving rise to increases in supply.

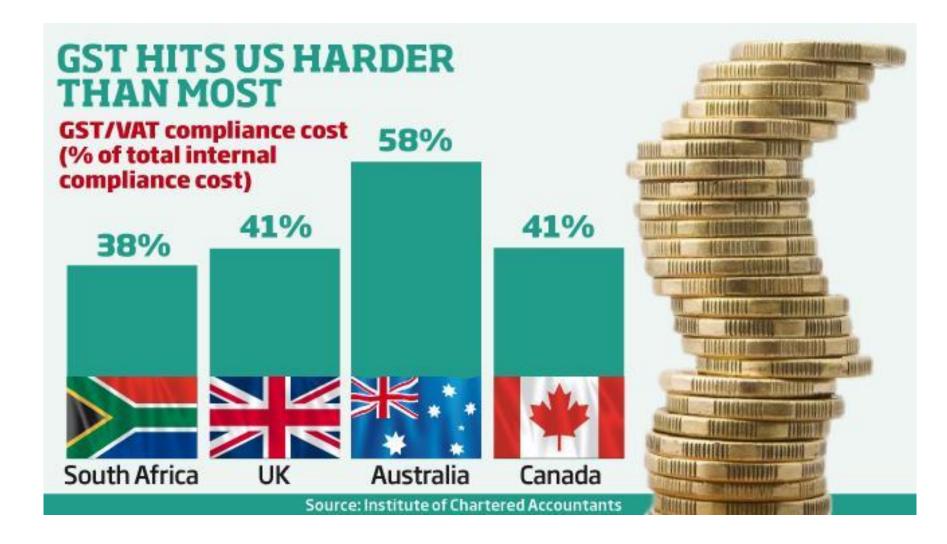


### **CHANGES IN GOVERNMENT POLICIES**



### **Changes in Government Policies**

- The imposition of indirect taxes and granting of subsidies will bring about changes in supply.
  - A tax imposed on a good increases the cost of supplying that good, forcing suppliers to cut back on production and shifting the supply curve to the left.
  - Subsidies have the opposite effect. They lower the cost of production and supply is increased, shifting the supply curve to the right.



KATE TAYLOR RETAIL

Tech

Finance

RETAIL

blame.

Pepsi is laying off up to 10 decrease supply of soda blaming a 2-month-old soda tax

PepsiCo is laying off 80 to 100 workers at distribution plants serving Philadelphia. According to the company, a soda tax that is cutting the area's soda consumption is to

MAR. 2, 2017, 3:16 AM

The layoffs, which account for roughly 20% of Pepsi's 423 Philadelphia employees, will begin Wednesday and be spread out over the next few months, the Philadelphia Inquirer reported.



Soda tax  $\rightarrow$  raises cost

As the quantity demanded or change in demand?

began changing their purchasing habits, as the price of two-liter bottles and 12 packs of cans nearly doubled.

How is the soda droi sup some some sola market and the labour market related? In the solar in the solar related? In the solar in the solar in the solar solar in the solar solar in the solar



## Australia's west set for hot, dry spell in risk to wheat outlook

Colin Packham

2 MIN READ





SYDNEY (Reuters) - Australia's west coast is facing hot, dry weather over the next three months, the country's bureau of meteorology said on Thursday, denting the outlook for wheat production in the world's fourth-largest exporter.



### Climate Change 'Already Affecting Food Supply' - UN

Climate change has already cut into the global food supply and is fuelling wars and natural disasters. The scientists said there was enough evidence that climate change is affecting food production on land and sea. The rate of increase in crop yields is slowing, raising doubts as to whether food production will keep up with the demand of a growing population. Changes in temperature and rainfall patterns could lead to food price rises of between 3% and 84% by 2050.

"We need yields to grow to meet growing demand, but already climate change is slowing those yields," said Michael Oppenheimer, a Princeton professor.

Other food sources are also under threat. Fish catches in some areas of the tropics are projected to fall by between 40% and 60%.

"Almost everywhere you see the warming effects have a negative affect on wheat and there is a similar story for corn as well." Lobell said. Wheat is the first big staple crop to be affected by climate change, because it is sensitive to heat and is grown around the world, from Pakistan to Russia to Canada. Projections suggest that wheat yields could drop 2% a decade.

### **CHANGES IN NUMBER OF SUPPLIERS**

- Increase suppliers of a product increase supply, thus shifting the supply curve to the right.
- On the other hand, if suppliers leave the industry, market supply will fall, shifting the supply curve to the left.
- Suppliers may enter or leave an industry due to business outlook.

## **Non-Price Supply Factors**

Changes in Moduction Changes in price of of related poods
Changes in

number of Suppliers T

P

ch ons nges

Changes in Weather conditions

Changes in Government policies

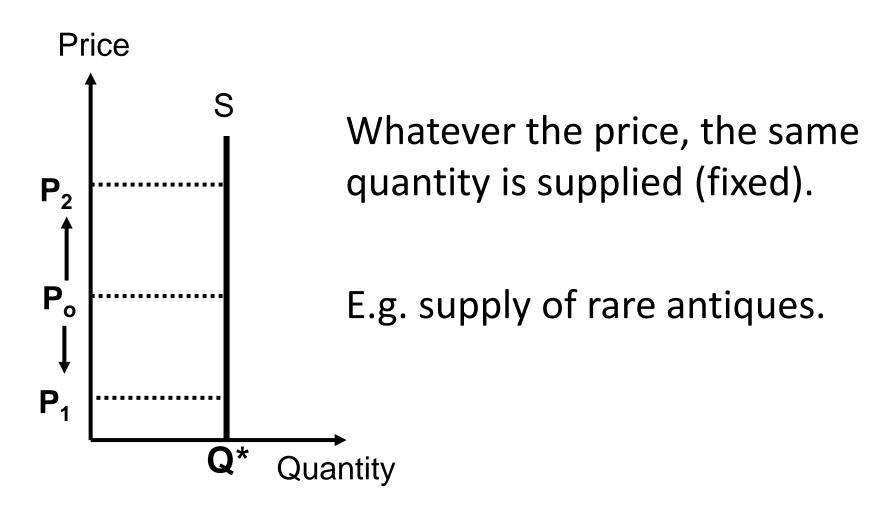
Changes in state of Technology

## 6. Exceptional Supply Curves





## **Vertical Supply Curve**



# Rare diamond up for grabs

40-carat emerald-cut diamond may fetch up to \$600,000 at auction here tomorrow

#### By May YIP

ONE of the world's rarest diamonds will go under the hammer at the Hilton Hotel tomorrow.

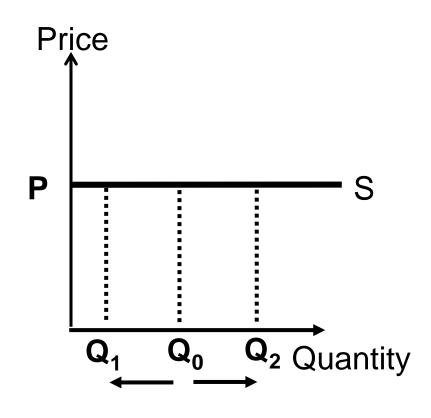
Mined in Russia and set in an 18K white gold necklace laced with smaller diamonds, the 40carat emerald-cut diamond is expected to fetch an estimated price of between \$400,000 and \$600,000, said its auctioneer, First State Auctions.

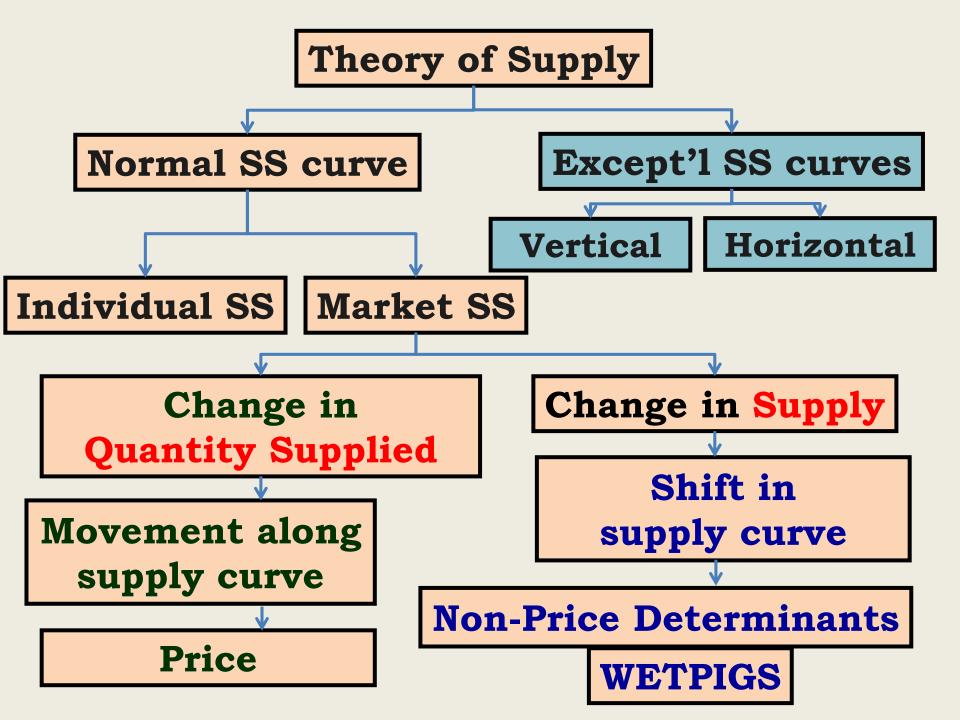


PHOTO: JOYCE FANG

## **Horizontal Supply Curve**

- A horizontal supply curve, also termed as perfectly elastic supply curve.
- At the given price, the firms are able and willing to supply an infinitely large quantity.
- E.g. agricultural products like vegetables





### **Next Leson: Price Determination**

