

ECC1000: Principles of Microeconomics



Lecture 2: Demand, Supply, and Market Equilibrium



Outline

- This class discusses the most important resource allocation mechanism: markets
- What is a market?
- What is a (perfectly) competitive market?
- Demand
- Supply
- Market equilibrium



Some preliminary exercise

- Imagine a specific market.
- Write down a factor that you think affects demand or supply in the market, and how it affects demand or supply.
- Discuss it with a person sitting to your left.
- Let's hear what you've written.
- Please keep those for later reference.



What is a market?

- A space where buyers (demand) and sellers (supply) meet (physical or not) for a particular good or service
- The two sides interact to determine the prices and quantities exchanged, called the market equilibrium.
- Markets are perhaps the most important and ancient social institutions in the world.
- Markets are everywhere (even where people try to stop them!)
 - Examples



(Perfectly) competitive market

- Is a market in which
 - the goods being offered for sale are perfect substitutes (to the eyes of buyers, they are the same)
 - there are so many buyers and sellers so that no single buyer or seller can influence the market price (they are price takers)
 - Examples: markets for agricultural products, markets for very liquid financial securities
- In these markets, all relevant information is summarized in demand and supply.



Demand

- Quantity demanded is the amount of a good that a buyer is *willing* and *able* to purchase.
- A person's demand (schedule, curve, function) relates the person's **quantity demanded** to the **price** of a good, holding all other relevant factors fixed.
- Law of demand: Other things equal (*ceteris paribus*), the quantity demanded of a good (generally) falls when the price of the good rises (i.e., demand curve generally slopes down).

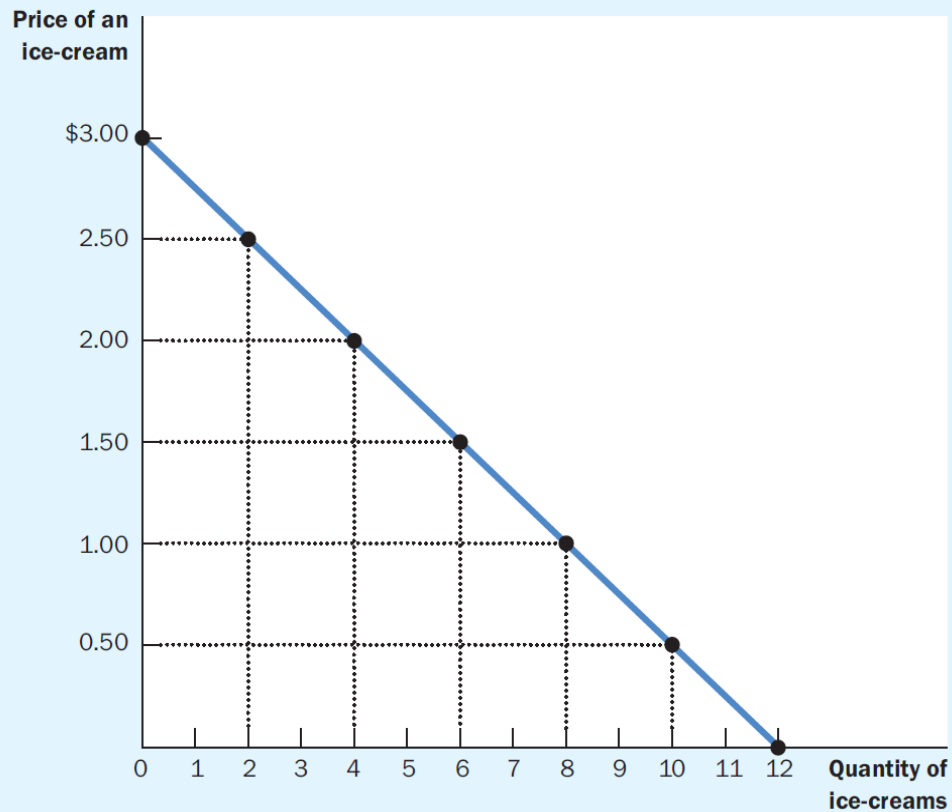
Demand schedule (table)

Table 4.1 Catherine's demand schedule

Price of an ice-cream (\$)	Quantity of ice-creams demanded
0.00	12
0.50	10
1.00	8
1.50	6
2.00	4
2.50	2
3.00	0

Demand curve

Figure 4.1 Catherine's demand curve



Note: Price is on the vertical axis!

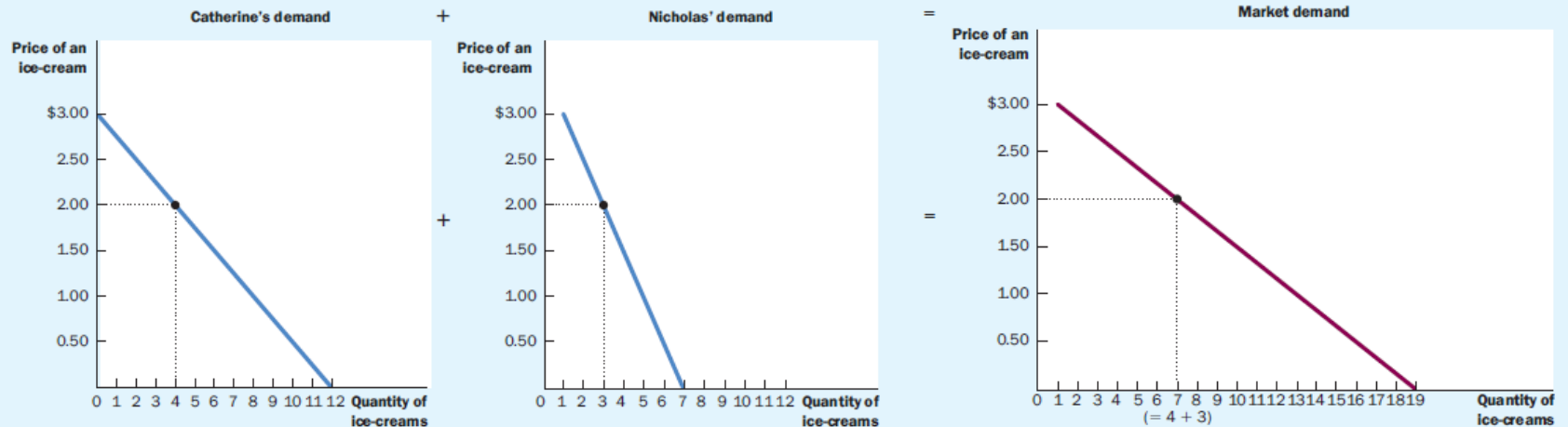


Going from individual demand to market demand

- If we add up each individual's demand at a particular price, we obtain the total market demand at that price.
- If we do this for every possible price, then we derive the market demand curve.
- Market demand is a horizontal sum of individual demands.

Market demand curve

Figure 4.2 Market demand as the sum of individual demands



There are two buyers in the market: Catherine and Nicholas. When price = \$2, total quantity demanded in the market is $4 + 3 = 7$. Horizontally adding up the individual quantities demanded at each price leads to market demand.

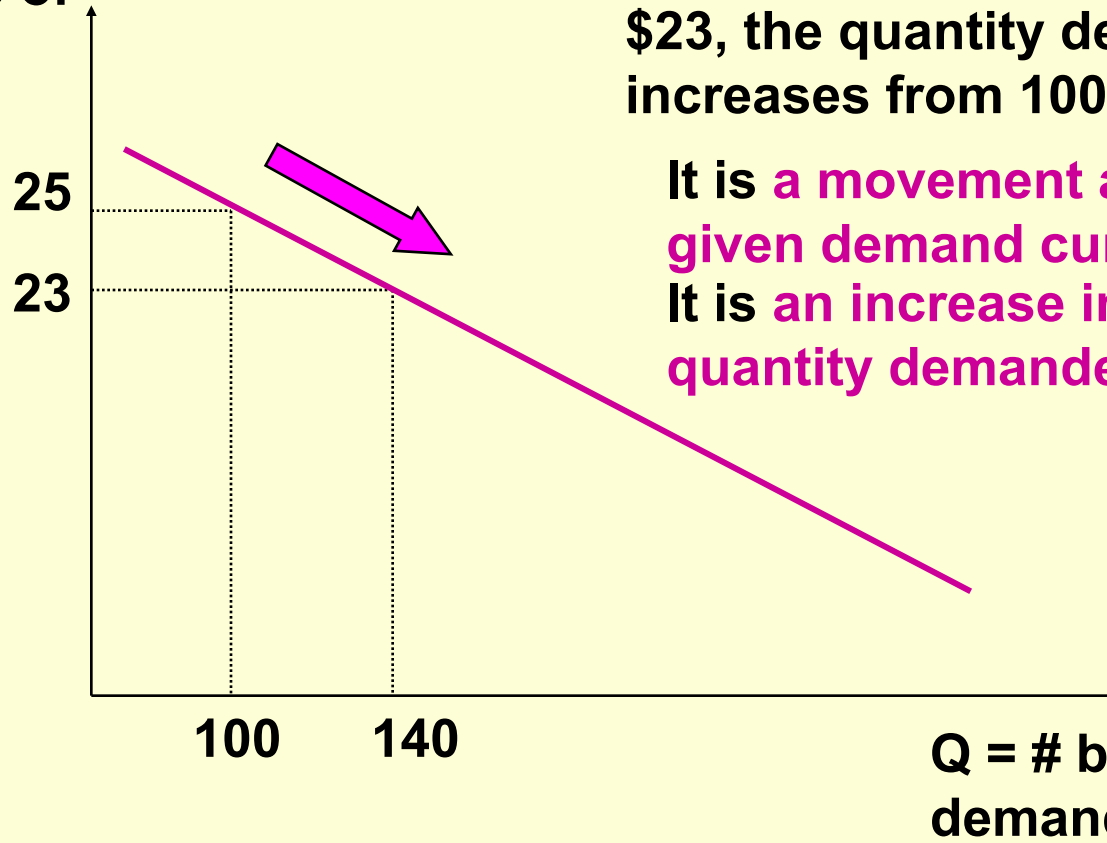


Change in demand

- Demand curve is plotted against price. So when price changes, we see a movement along the given demand curve (the curve itself does not shift!).
- When all other factors (that were held fixed under 'ceteris paribus') change, the entire demand curve shifts.

Movement along the demand curve

**P = Price of
wine (\$)**

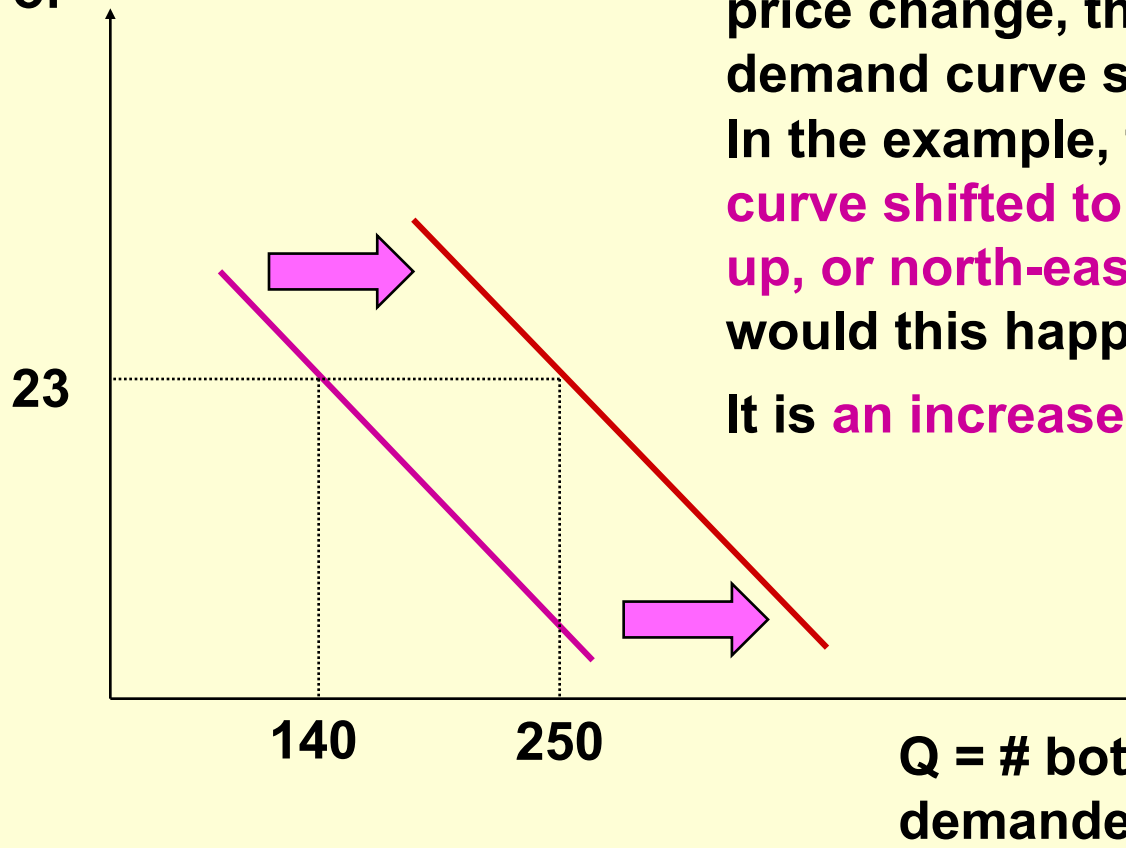


When price falls from \$25 to \$23, the quantity demanded increases from 100 to 140.

**It is a movement along the given demand curve.
It is an increase in the quantity demanded.**

Shifts in demand

P = Price of
wine (\$)



When factors other than price change, the whole demand curve shifts.

In the example, the **demand curve shifted to the right (or up, or north-east)** – when would this happen?

It is **an increase in demand**.



What causes shifts in demand?

- Income: normal vs inferior goods
- Prices of related goods (substitutes vs complements)
- Changes in tastes
- Changes in expectations (about future income or price)
- Number of buyers



Question: French Paradox

- The “French Paradox” (coined in 1991) refers to lower rates of heart disease among the French compared to the Americans although the former consume more fat, smoke more, and do less exercise.
 - See <http://winefolly.com/update/french-paradox-diet/>,
 - Or watch <https://www.youtube.com/watch?v=njm1LkXP2sg>
- How did it affect the American wine industry in the 1990s?



More questions

- A flood led to an increase in the price of strawberry. How would it affect the demand for champagne?
- Consumers expect the price of imported cars to fall as the government plans to reduce the tariff on imported cars. How would it affect the current demand for imported cars?
- Your boss gave you a pay raise. How would it affect your demand for lamb chops?



Supply

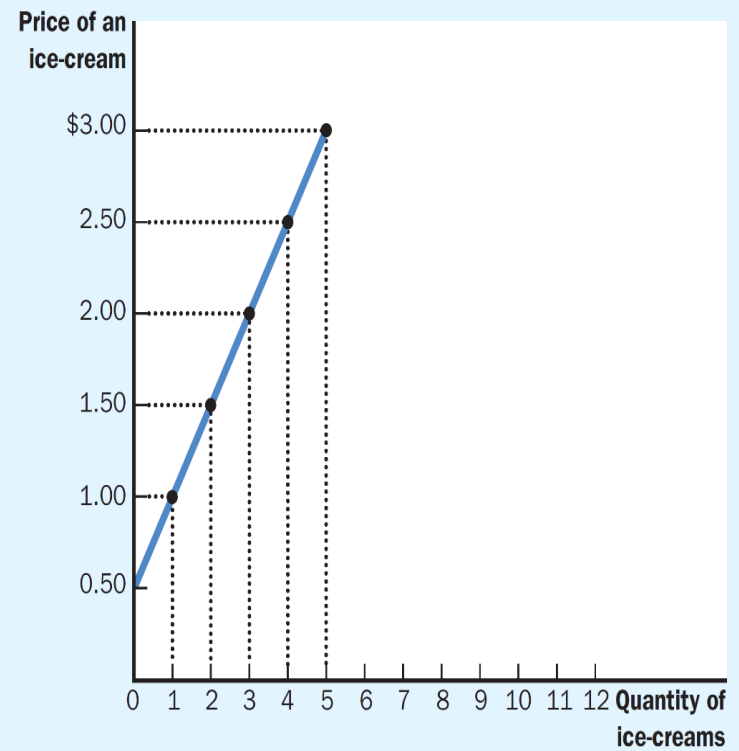
- Quantity supplied is the amount of a good that a seller is *willing* and *able* to sell.
- A seller's supply (schedule, curve, function) relates the seller's **quantity supplied** to the **price** of a good, holding all other relevant factors fixed.
- Law of supply: Other things equal (*ceteris paribus*), the quantity supplied of a good (generally) rises when the price of the good rises (i.e., supply curve generally slopes up).

Supply

Table 4.4 Tony's supply schedule

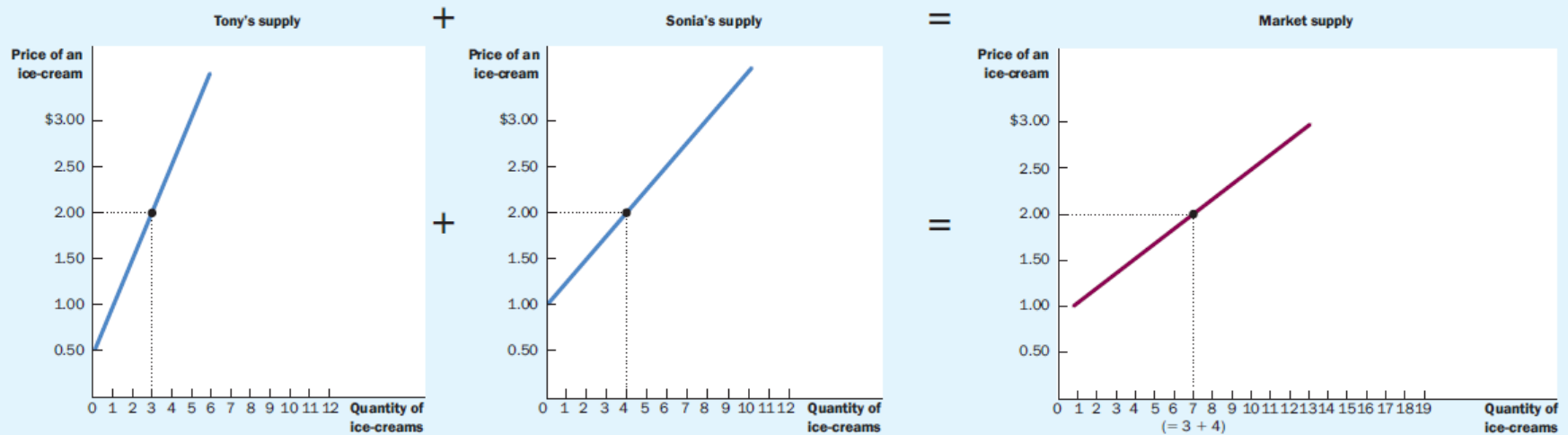
Price of an ice-cream (\$)	Quantity of ice-creams supplied
0.00	0
0.50	0
1.00	1
1.50	2
2.00	3
2.50	4
3.00	5

Figure 4.5 Tony's supply curve



Market supply curve

Figure 4.6 Market supply as the sum of individual supplies



There are two sellers in the market: Tony and Sonia.
When price = \$2, total quantity supplied in the market is $3 + 4 = 7$.
Horizontally adding up the individual quantities supplied at each price leads to market supply.

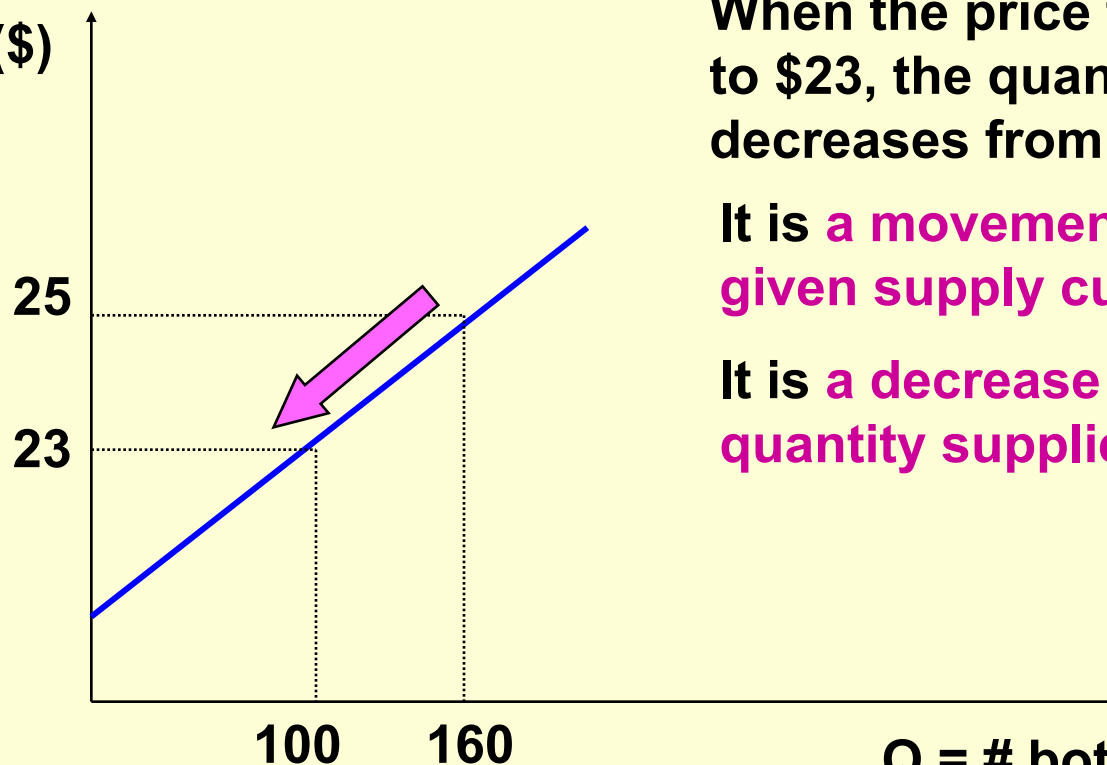


Change in supply

- Supply curve is plotted against price. So when price changes, we see a movement along the given supply curve (the curve itself does not shift!).
- When all other factors (that were held fixed under 'ceteris paribus') change, the entire supply curve shifts.

Movement along the supply curve

**P = Price
of wine (\$)**



When the price falls from \$25 to \$23, the quantity supplied decreases from 160 to 100.

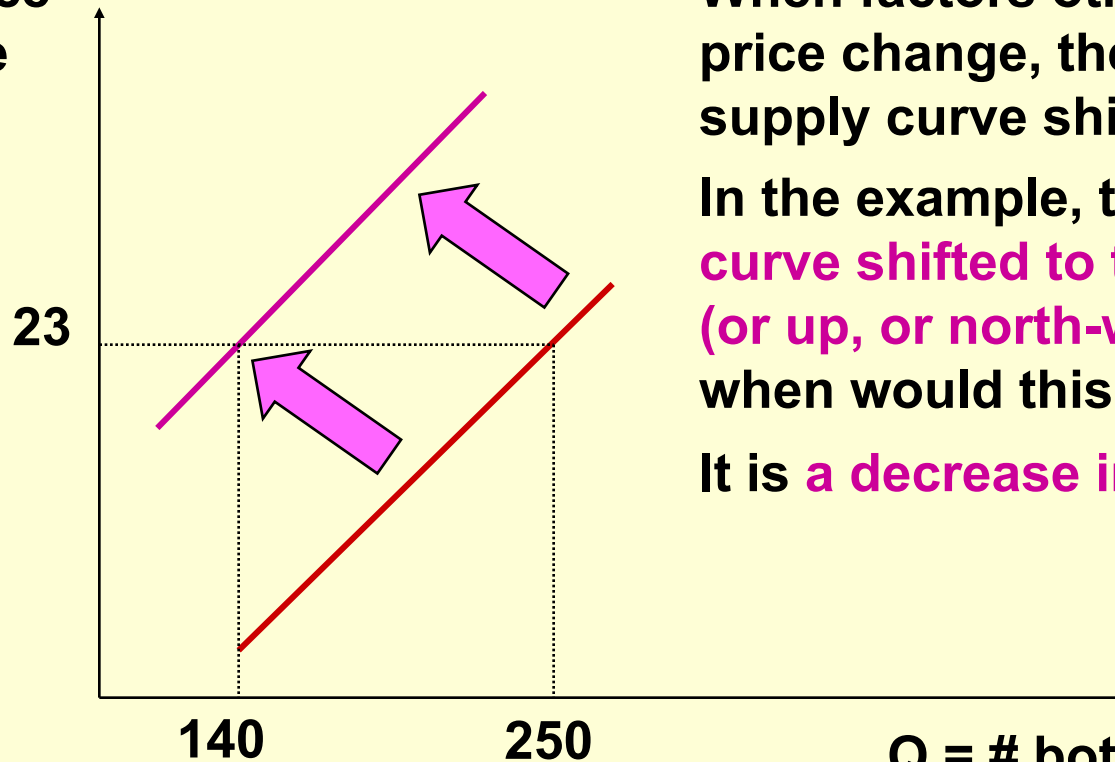
It is a movement along the given supply curve.

It is a decrease in the quantity supplied.

**Q = # bottles of wine
supplied per day**

Shifts in supply

P = Price
of wine



When factors other than price change, the whole supply curve shifts.

In the example, the **supply curve shifted to the left (or up, or north-west) – when would this happen?**

It is **a decrease in supply.**



What causes shifts in supply?

- Input prices
- Technology (by changing the costs of production)
- Expectations (about input prices or output prices)
- Number of sellers



Question

- During the first decade of the 21st century, there was ‘grape glut’ in much of the wine-growing regions in the world.
- The *Forbes* article “Grape glut” states that a tax break led more grapevines to be planted in Australia. How would it affect the supply of wine in Australia?
- Read <http://www.forbes.com/global/2006/0724/051.html>



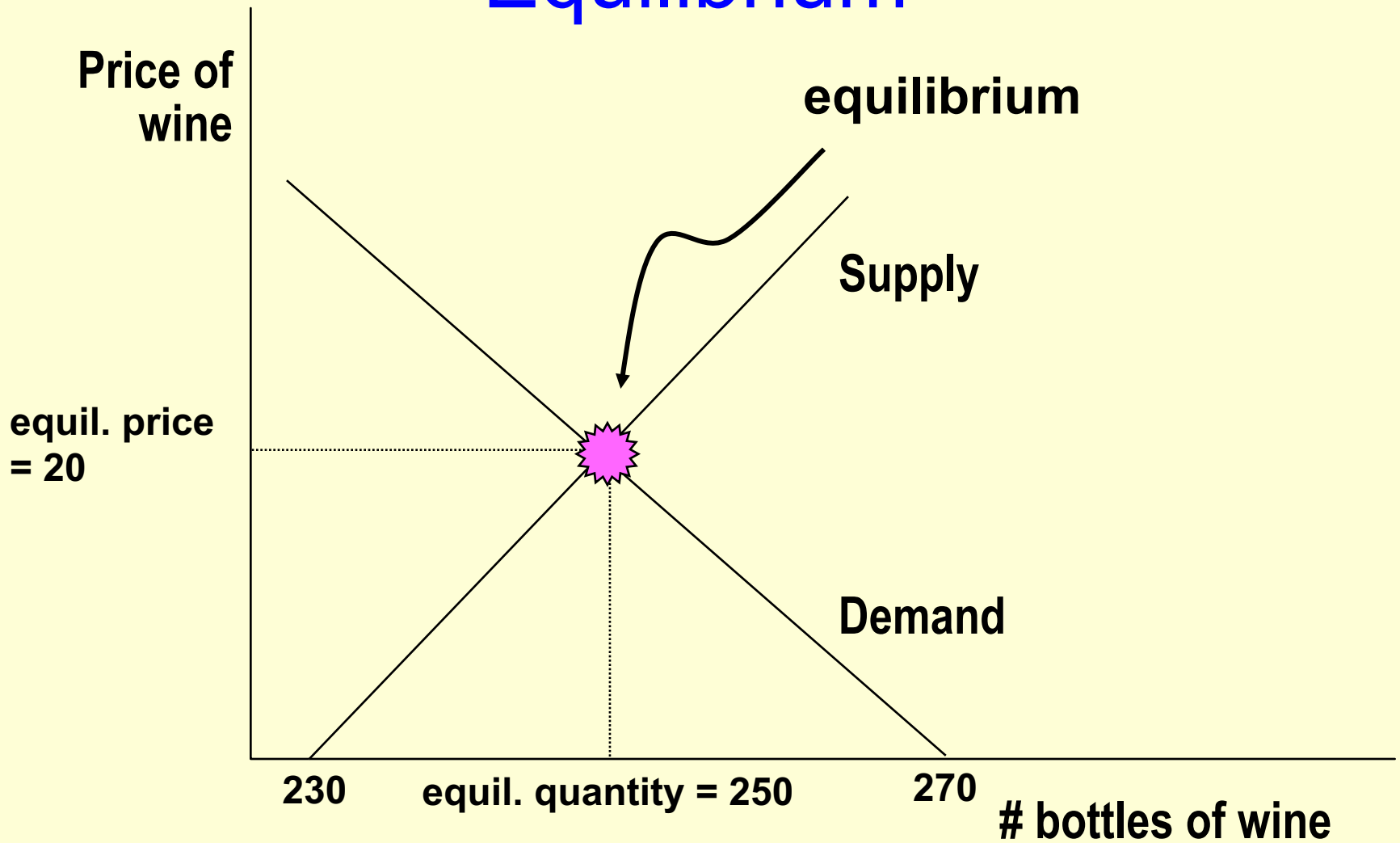
Demand and supply together: market equilibrium

- Equilibrium is a situation in which demand and supply are in balance.
- When the market is in equilibrium, the price is called an equilibrium price and the quantity, an equilibrium quantity.

A numerical example

- The demand curve for wine is given by $Q^D = 270 - P$ where Q^D is quantity demanded and P is price.
- The supply curve for wine is given by $Q^S = 230 + P$ where Q^S is quantity supplied.
- Find the equilibrium price and quantity.

Equilibrium

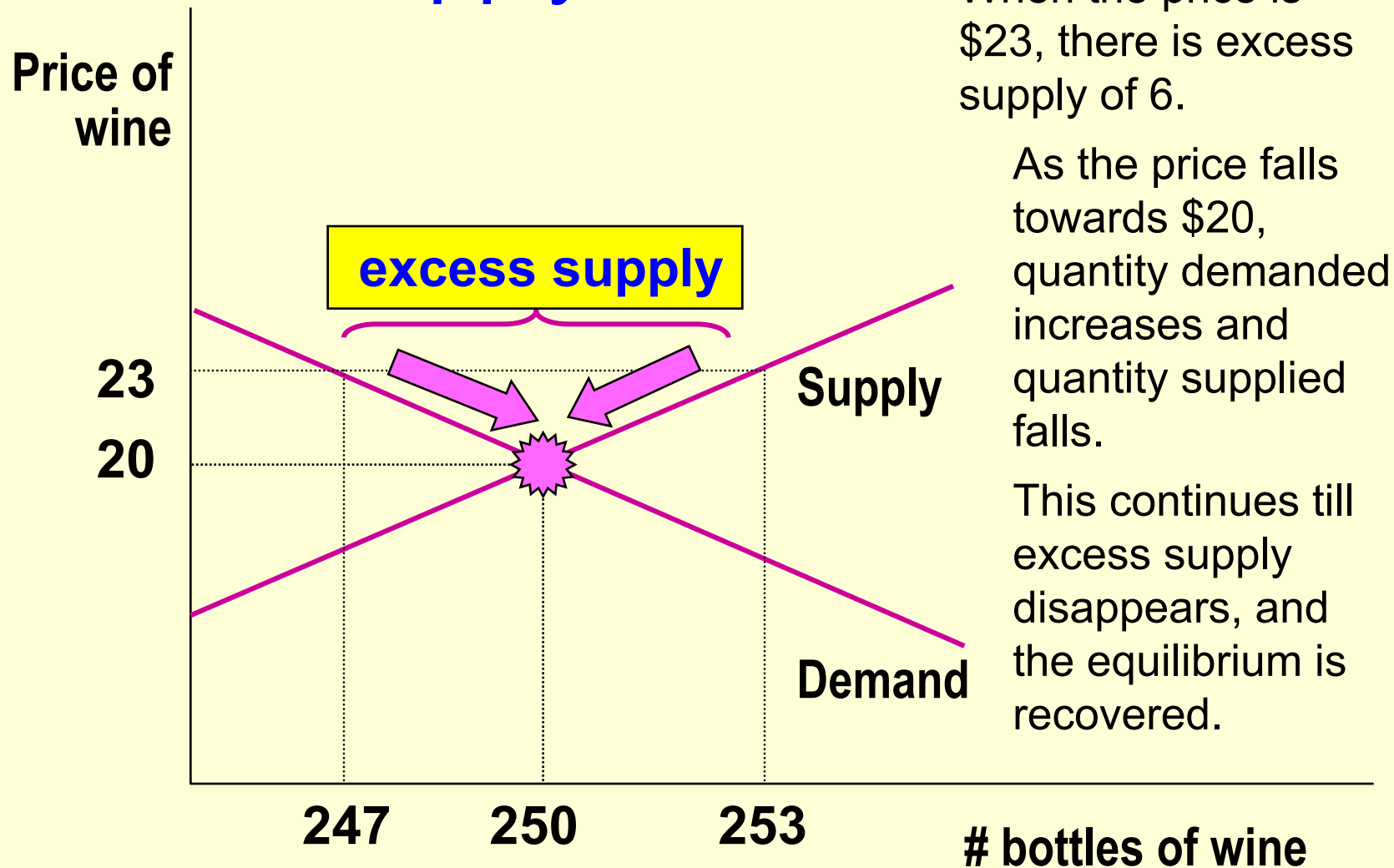




Markets not in equilibrium

- **Excess Supply (or surplus)**
- Price is above the equilibrium price.
- Sellers are unable to sell all they want to sell at the going price.
- Quantity supplied exceeds quantity demanded.
- Sellers are willing to charge less, to which buyers respond by increasing quantity demanded until the equilibrium is recovered.

Excess supply

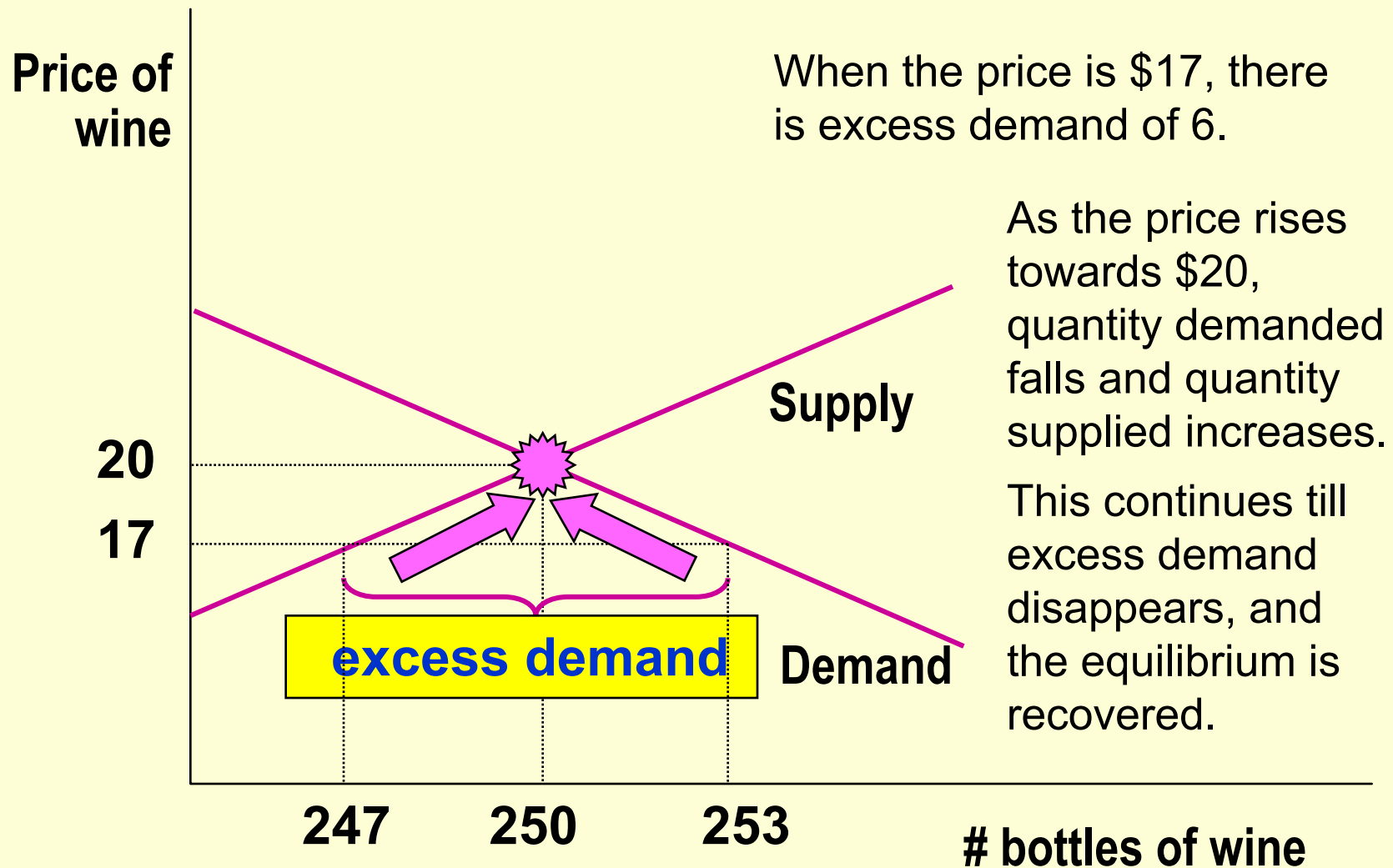




Markets not in equilibrium

- **Excess Demand (or shortage)**
- Price is below the equilibrium price.
- Buyers are unable to buy all they want at the going price.
- Quantity demanded exceeds quantity supplied.
- Buyers are willing to pay more, to which producers respond by producing more until the equilibrium is recovered.

Excess demand

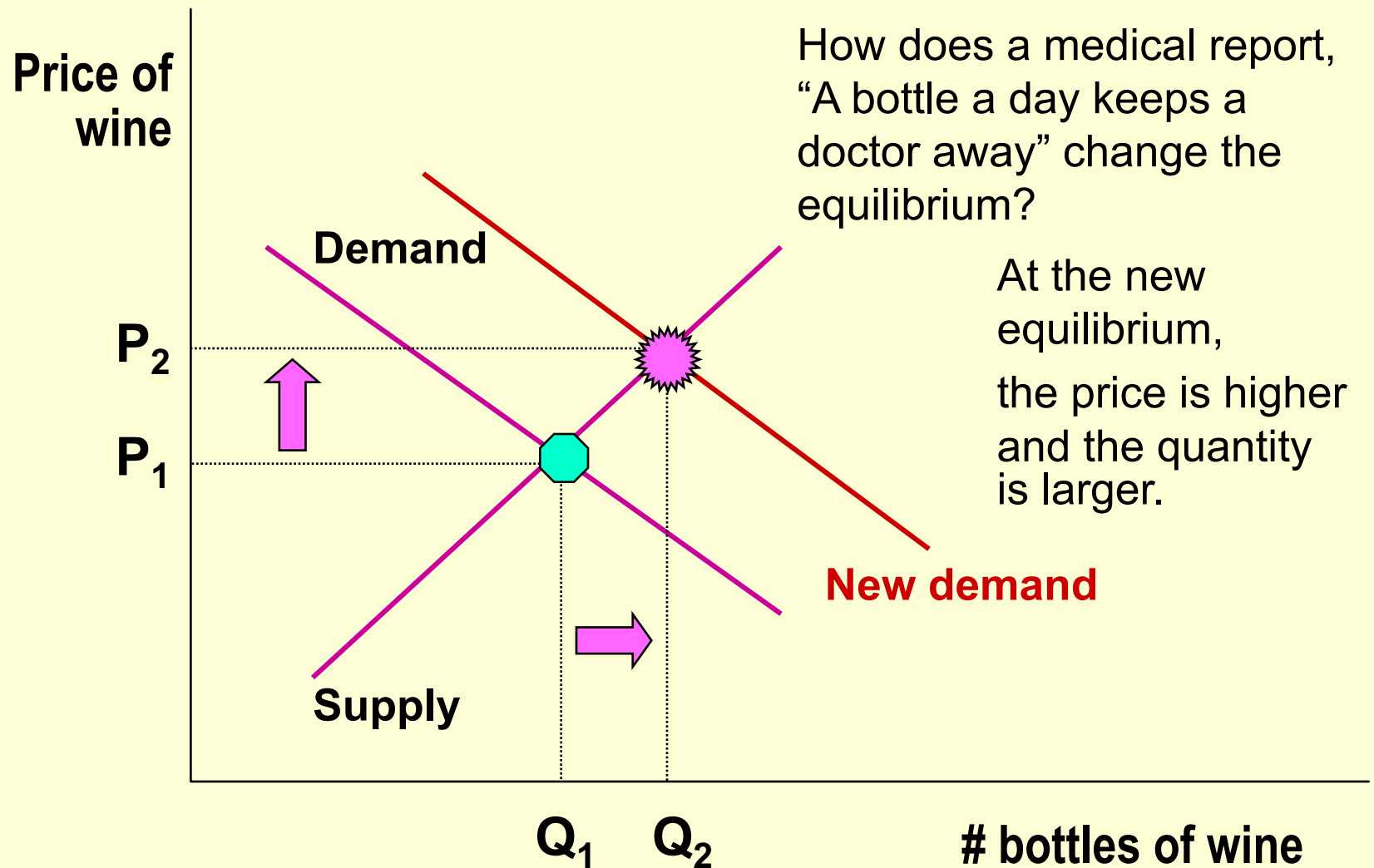




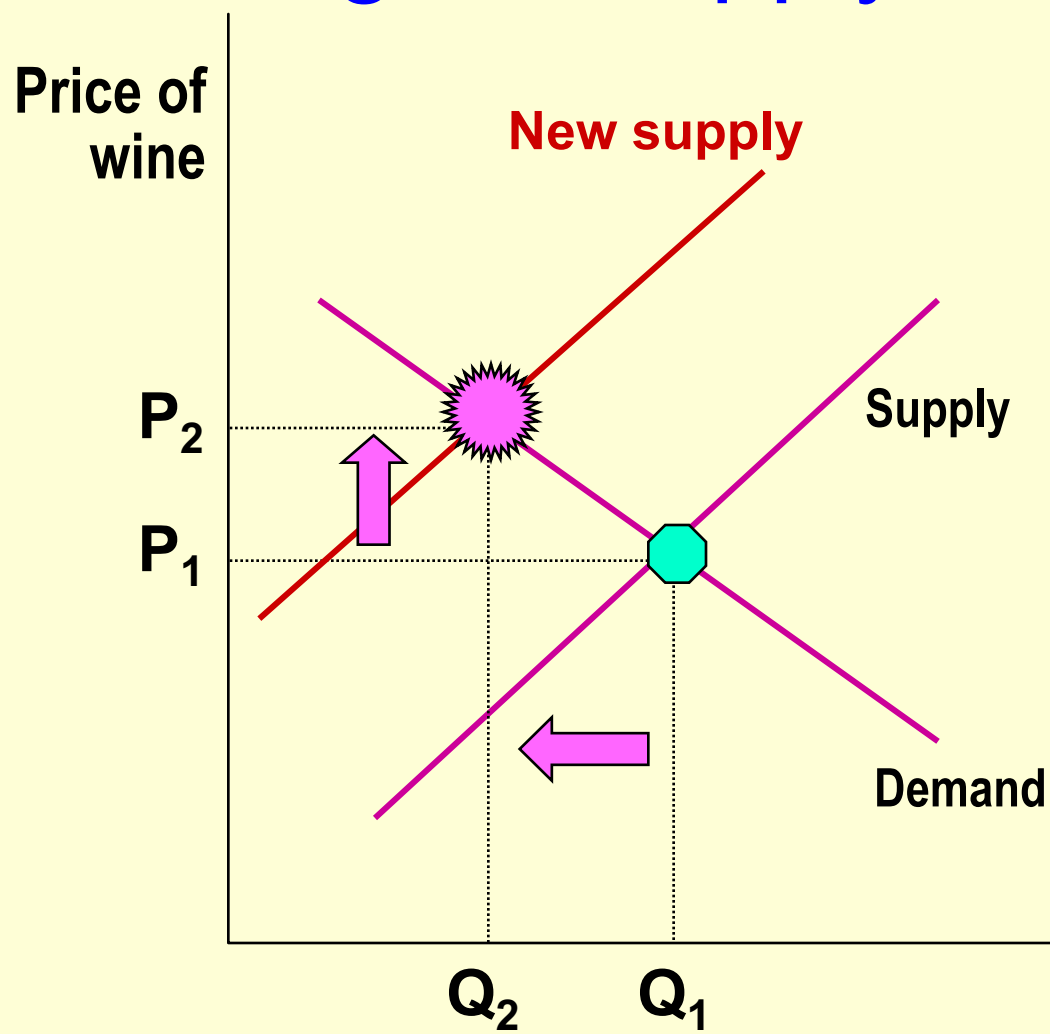
Changes in equilibrium

- Decide whether the event shifts the supply or demand curve (or both).
- Decide whether the curve(s) shift(s) to the left or right.
- Determine how the shift affects equilibrium price and quantity.

A change in demand



A change in supply



A phylloxera (insect that kills grapevines) outbreak led to an increase in the price of grapes. How does it affect the wine market?

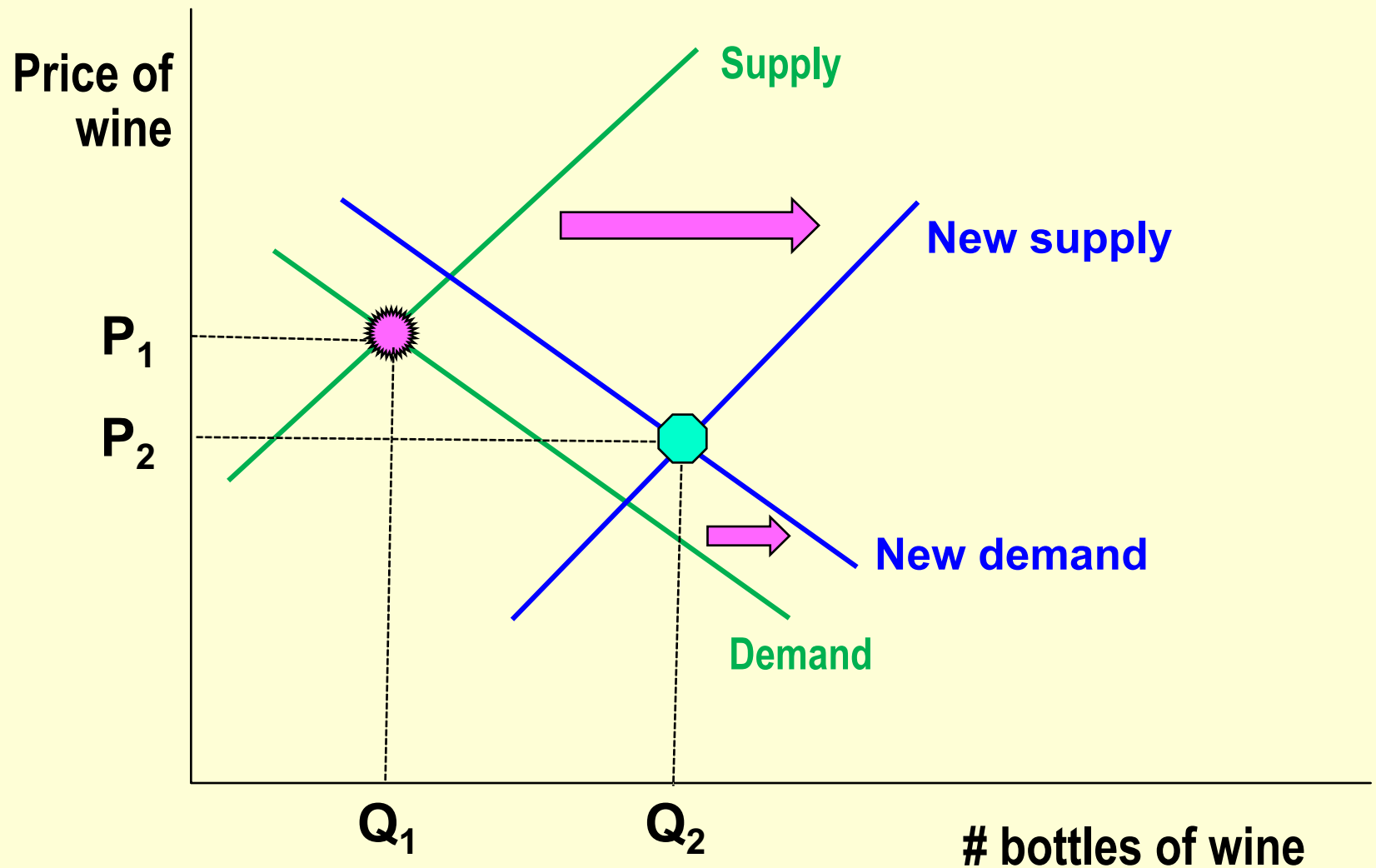
At the new equilibrium, the price is higher and the quantity is smaller.



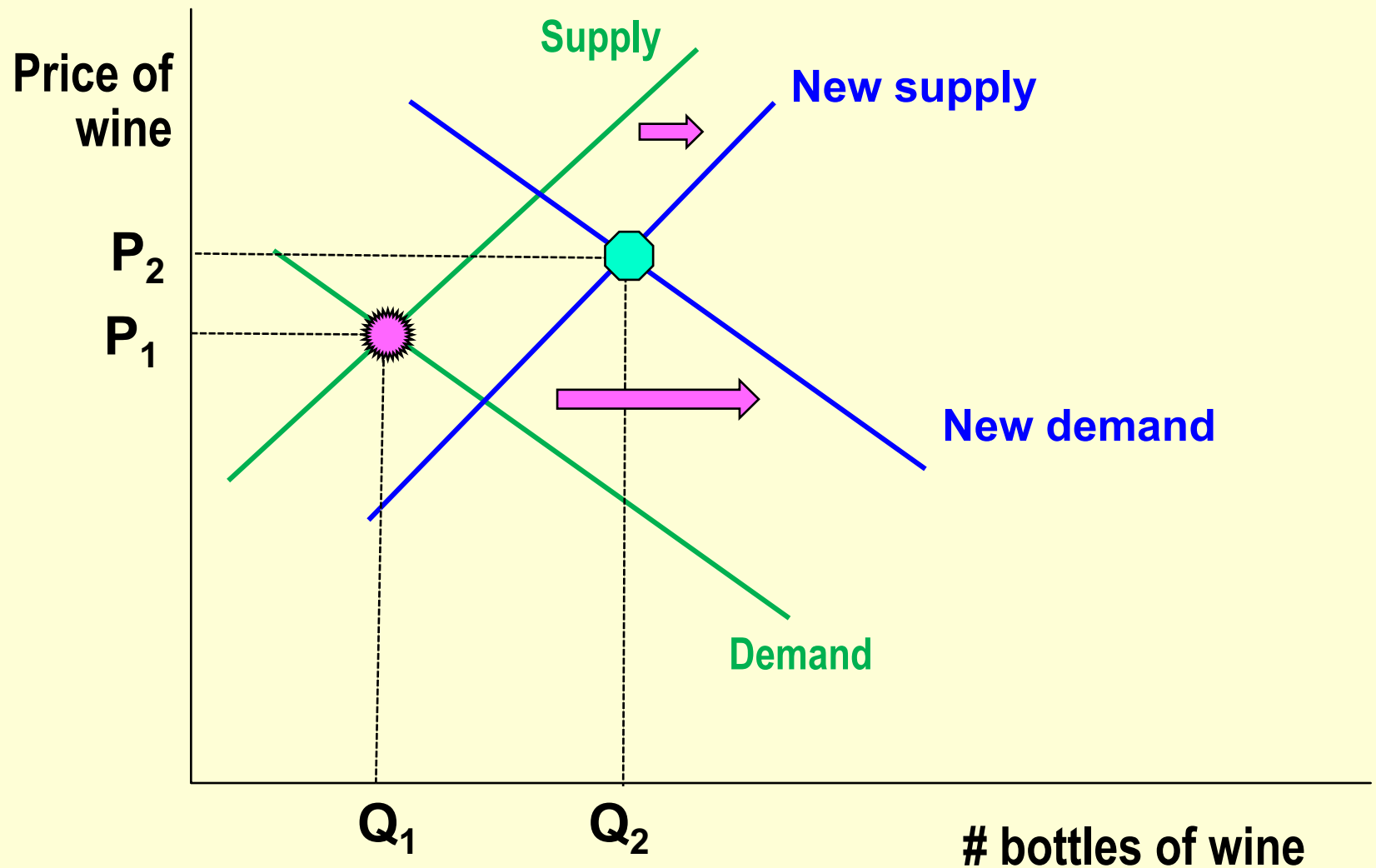
A change in both supply and demand: example

- The market for wine in Japan in the 1990s
- The demand increased thanks to health concerns (think of the French Paradox!) and fashion. With the expectation of further increase in demand, wine import in Japan also increased.
- How would these change the equilibrium price and quantity from the pre-1990s level?

Supply increases more than demand



Demand increases more than supply





Preliminary exercise revisited

- Go back to the market and the two factors that you wrote down.
- How do they affect demand or supply?
 - Movement along the curve?
 - Shifts of the curve?
- Why is the distinction important? Read the following and comment:

Recent bumper crop of grapes led many French winemakers to worry that the price of wine will fall. A knowledgeable figure in the industry is quoted to have said, “(No worries!) The decrease in price will increase demand, which will in turn increase price again...”.



Recap and what's to come

- In markets where buyers and sellers are price-takers, the two forces of demand and supply determine the allocation of goods and services.
- Changes in price of a good lead to movements along a given demand (or supply) curve.
- The whole demand (or supply) curve shifts when factors other than price change.
- Market equilibrium is where demand and supply are in balance.
- Next week, we discuss elasticities, one of the most important (and useful) concepts in studying markets.