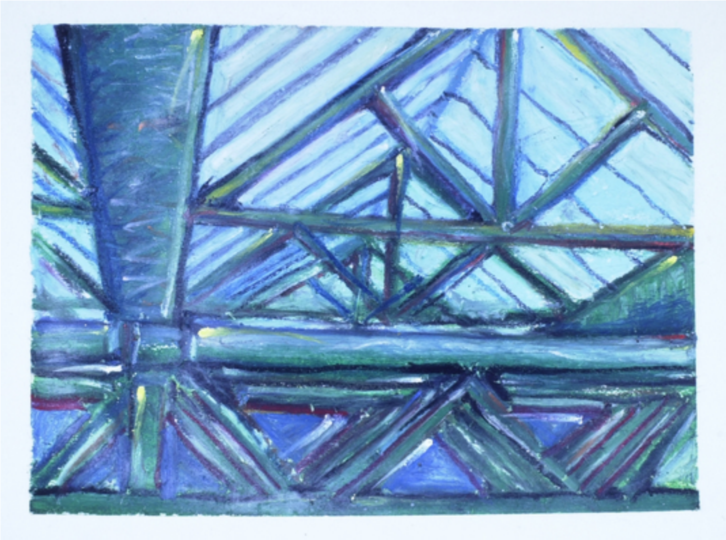

# Demand and Supply

Fei DING
HKUST ECON

# Announcements

- Assigned reading:
  – Textbook, Chapter 3, 4
- Problem set 1 due Thursday Sep. 20.
- Quiz 0 will be held Wed. Sep. 26 8-8:30pm.
- Problem set 2
  - Ch3: 7-9, 14, 20-23, 26-27
  - Due date will be announced on CANVAS.

# Hong Kong Property Market

Centa-City Leading Index CCL

# Hong Kong Property Market

- Keep rising since the introduction of the 1st quantitative easing (QE1) by US Federal Reserve Banks (the Fed) in Dec. 2008 until March 2010.
  - QE2: From November 2010 to June 2011
  - QE3: From September 2012 until 2014
- Other countries, such as UK and China, take similar actions as QEs.
- **Consequence: Huge amount of liquidity (money) flowing all over the world!!!**

# Hong Kong Property Market

- Invest in assets, instead of holding money, to protect your wealth.
  - How does this affect the property market in HK?
- Any other reasons that push up the price of HK properties???

The following is a summary of the *Wall Street Journal* article "Heat Rises in Hong Kong Property Market" on Sep. 18, 2012.

"…Hong Kong's average property prices have doubled over the last four years… In a lot of Hong Kong property markets, the bubble that has been building is fueled by mainland Chinese money coming over the border and purchasing the properties here… Since 2009, the HK government has been 1) tightening mortgage rules for people with more than one mortgage, 2) raising transaction taxes on property transactions, and 3) reintroducing the selling of affordable subsidized public housing for qualified families… but **price is still going up**…"

# Hong Kong's property prices will not always go up, *SCMP* July 14, 2018:

"…Hong Kong is in the middle of one of the most sustained real estate bull runs in the city's history. But eventually gravity asserts itself. This time will not be any different…All those spicy measures set up by the government have failed to cool the market. They have served as no more than a signpost that prices are going crazy. New ones now being discussed will not prove any more effective. Put your trust in gravity, not the government."

# Homebuyers getting cold feet in Hong Kong's property market amid growing uncertainties, *SCMP* Aug. 17, 2018:

"…Buyers are starting to have second thoughts on flats, which some analysts say could signal a turn of sentiment in a market that has become used to ever-rising prices, cheap loans and stiff competition for tight supply. A gloomy outlook appears to be settling in as <u>banks raise mortgage rates, the US-China trade war brings uncertainties, stock markets struggle and Hong Kong government measures to cool prices start to bite</u>."

# Hong Kong Property Market

- How do government measures affect demand and/or supply of HK property market?
- What more can be done to successfully suppress the property price?
- Can you show me what happened or will happen on a demand-supply picture?

# Markets and Prices

- A **market** is a platform or meeting place where buying and selling take place through voluntary exchange.
  - HKSE – IT network linking buyers and sellers.
  - Costs for using markets: setup, legal system, negotiation and settlement rules, etc.
- The **money price** of a good is the amount of money needed to buy it.
- The **relative price** of a good—the ratio of its money price to the money price of the next best alternative good—is its *opportunity cost*.

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# Competitive Markets

- A **competitive market** has many buyer and many sellers selling identical goods.
  - No bargaining power
  - All price takers
  - Full information
- Examples?
  - It is just an economic benchmark!
- Outcome:
  - Equilibrium price obtained from demand & supply curves.
  - Social welfare is maximized.

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# What is Demand?

- We have 120 students.
  - 60 want to sell beers.
  - 60 want to buy beers.
  - Under free negotiation, what price and quantity will be traded?
- Demand is about the "**willingness to pay**" at different prices.
- Why is demand curve downward sloping?

# Demand

If you demand something, then you

1. Want it,
2. Can afford it, and
3. Have made a definite plan to buy it.

*Wants* are the unlimited desires or wishes people have for goods and services. Demand reflects a decision about which wants to satisfy.

The **quantity demanded** of a good or service is the amount that consumers plan to buy during a particular time period, and at a particular price.

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# Law of Demand

Other things remaining the same, the higher the price of a good, the smaller is the quantity demanded, and vice versa.

## Substitution Effect

When the relative price (opportunity cost) of a good or service rises, people seek substitutes for it, so the quantity demanded of the good or service decreases.

## Income Effect

When the price of a good or service rises relative to income, people cannot afford all the things they previously bought, so the quantity demanded of the good or service decreases.

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# Demand Curve and Demand Schedule

The term **demand** refers to the entire relationship between the price of the good and quantity demanded of the good.

A **demand curve** shows the relationship between the quantity demanded of a good and its price when all other influences on consumers' planned purchases remain the same.

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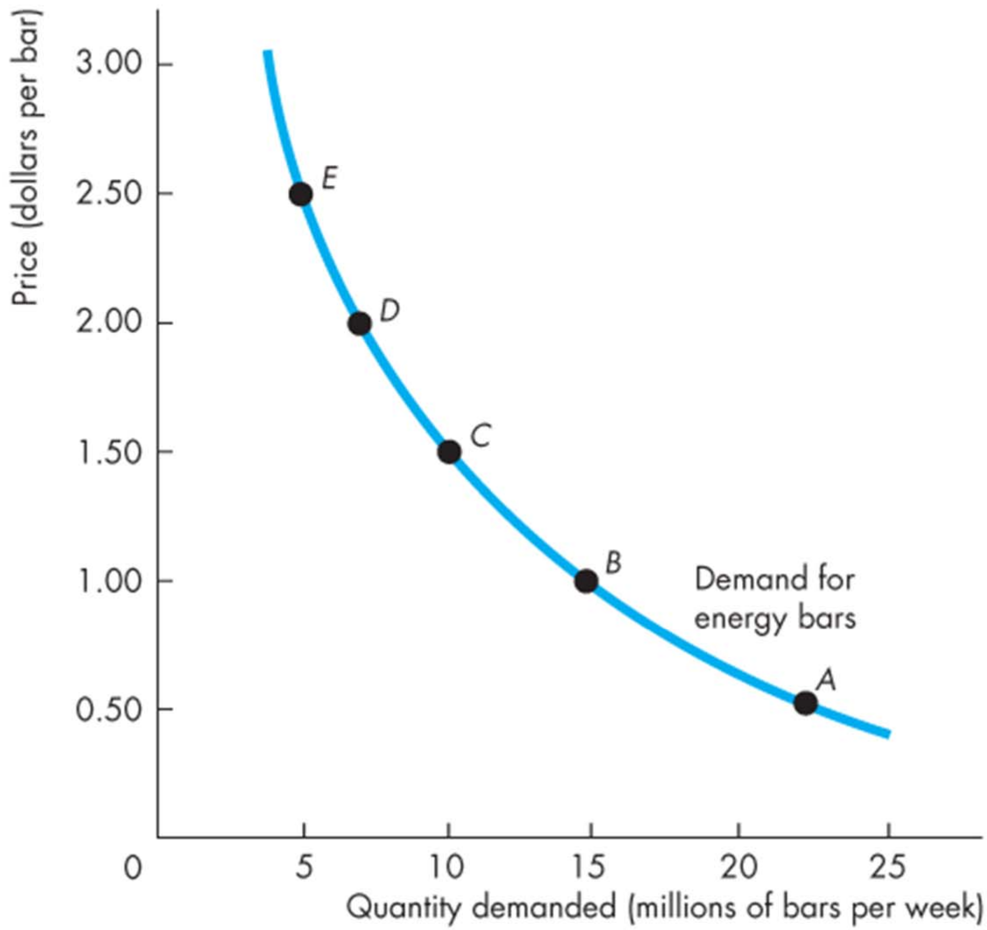
# Demand Curve

| | Price (dollars per bar) | Quantity demanded (millions of bars per week) |
|---|---|---|
| *A* | 0.50 | 22 |
| *B* | 1.00 | 15 |
| *C* | 1.50 | 10 |
| *D* | 2.00 | 7 |
| *E* | 2.50 | 5 |

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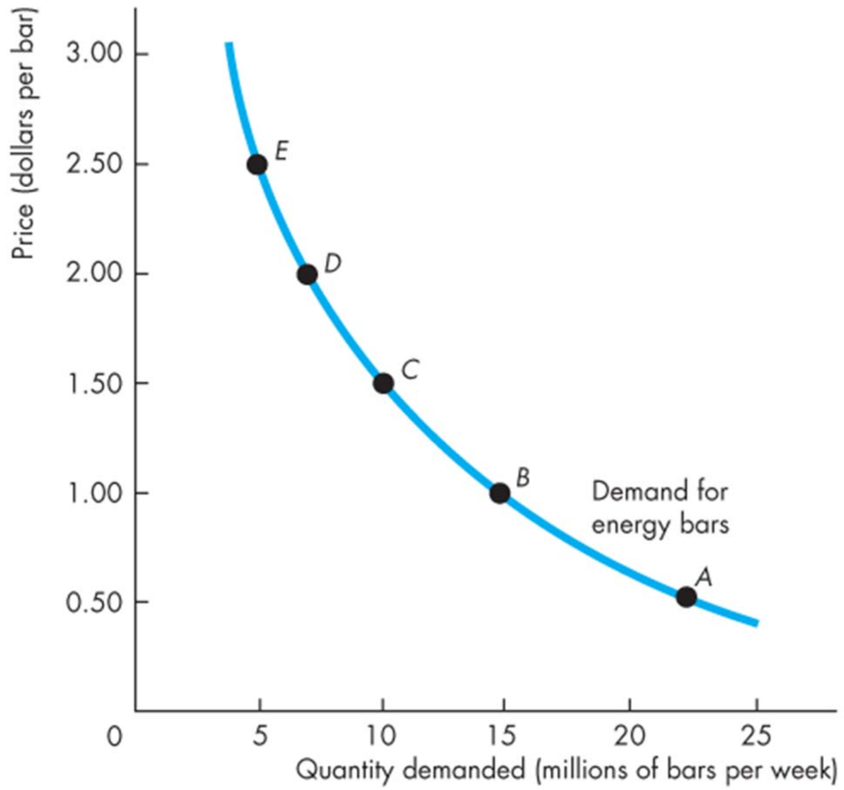
# Demand – Marginal Benefit

## Willingness and Ability to Pay

A demand curve is also a *willingness-and-ability-to-pay* curve.

The smaller the quantity available, the higher is the price that someone is willing to pay for another unit.

Willingness to pay measures *marginal benefit*.

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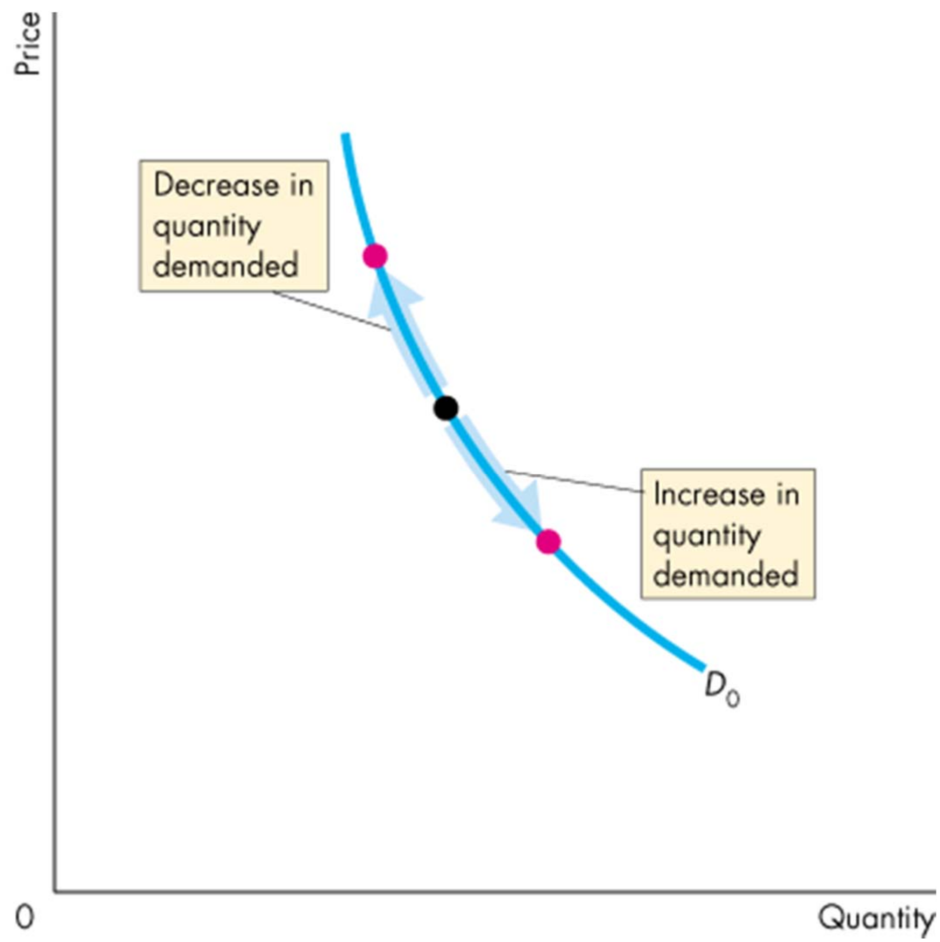
# Change in Quantity Demanded

## Movement Along the Demand Curve

When the price of the good changes and <u>other things remain the same</u>, the quantity demanded changes and there is a <u>movement along</u> the demand curve.

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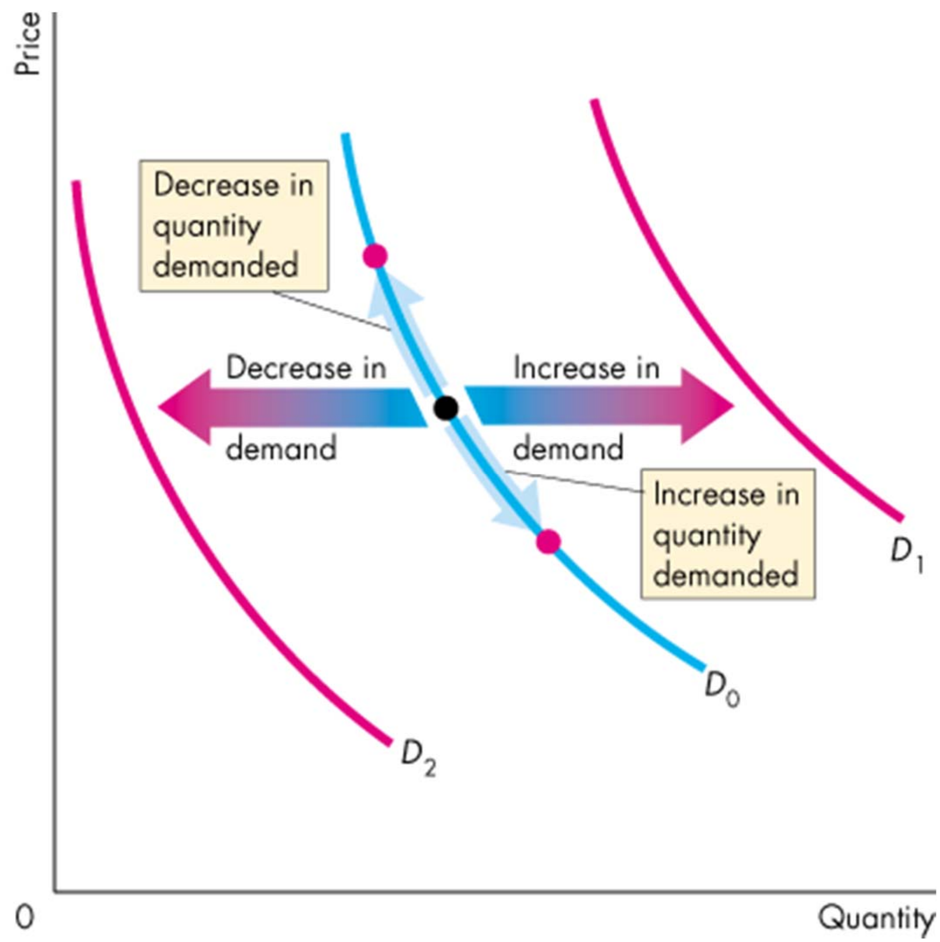
# Shifting vs. Moving along the Curve

## A Shift of the Demand Curve

If the price remains the same but one of the other influences on buyers' plans changes, demand changes and the demand curve <u>shifts</u>.

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# Change in Demand

When some influence on buying plans other than the price of the good changes, there is a **change in demand** for that good.

The quantity of the good that people plan to buy changes at each and every price, so there is a new demand curve.

When demand *increases*, the demand curve shifts *rightward*.

When demand *decreases*, the demand curve shifts *leftward*.

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# What changes Demand

Six main  factors that change demand are

- The prices of related goods
- Expected future prices
- Income
- Expected future income and credit
- Population
- Preferences

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# What changes Demand

## Prices of Related Goods

A **substitute** is a good that can be used in place of another good.

A **complement** is a good that is used in conjunction with another good.

When the price of a substitute for an energy bar rises or when the price of a complement of an energy bar falls, the demand for energy bars increases.

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# What changes Demand

## Expected Future Prices

If the price of a good is expected to rise in the future, current demand for the good increases and the demand curve shifts rightward.

## Income

When income increases, consumers buy more of *most* goods and the demand curve shifts rightward.

A **normal good** is one for which demand increases as income increases.

An **inferior good** is a good for which demand decreases as income increases.

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# What changes Demand

## Expected Future Income and Credit

When income is expected to increase in the future or when credit is easy to obtain, the demand might increase now.

## Population

The larger the population, the greater is the demand for all goods.

## Preferences

People with the same income have different demands if they have different preferences.

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# What is Supply?

- The PPF is related to supply.
  - Possibility vs. Willingness
- Why is supply curve upward sloping?
- Supply is about the "**minimum amount you will accept**" for providing a given quantity of goods.
- Short-run vs. long-run
  - Short: at least one input is fixed.
  - Long: all inputs can be altered.

# Supply

If a firm supplies a good or service, then the firm

1. Has the resources and the technology to produce it,
2. Can profit from producing it, and
3. Has made a definite plan to produce and sell it.

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

The **quantity supplied** of a good or service is the amount that producers plan to sell during a given time period at a particular price.

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# Law of Supply

Other things remaining the same, the higher the price of a good, the greater is the quantity supplied; and vice versa.

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 (Chapter *2,* page 35).

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

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# Supply Curve and Supply Schedule

The term **supply** refers to the entire relationship between the quantity supplied and the price of a good.

The **supply curve** shows the relationship between the quantity supplied of a good and its price when all other influences on producers' planned sales remain the same.

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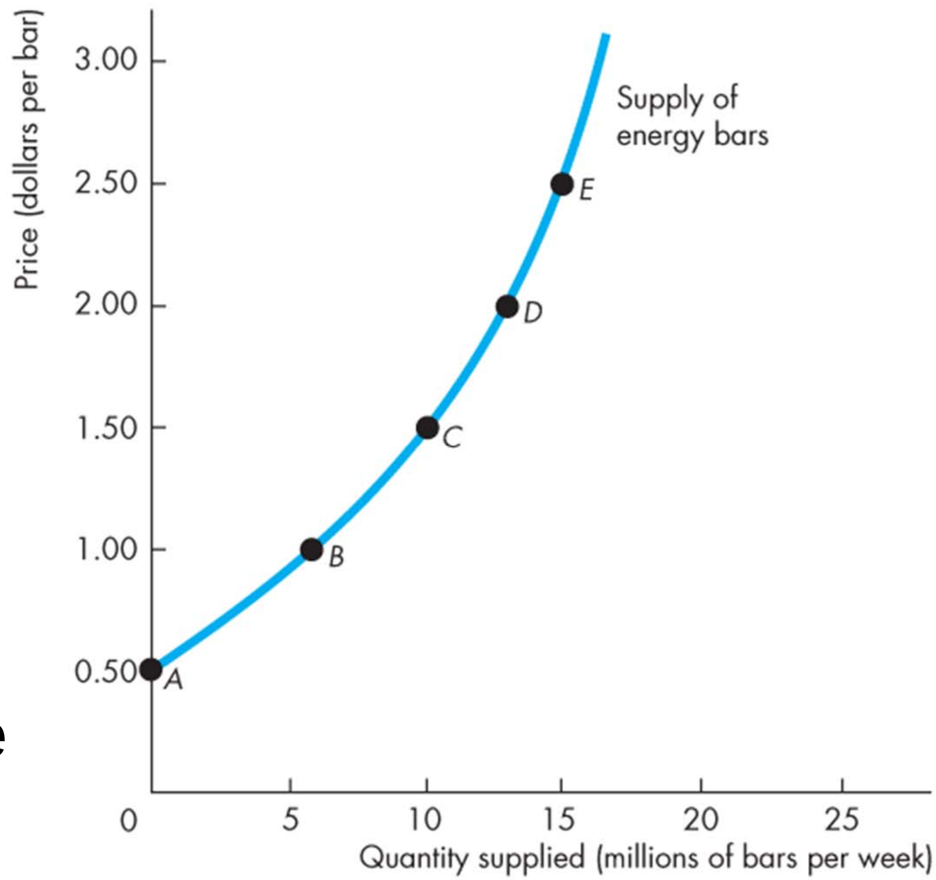
# Supply Curve

A supply curve of energy bars

| | Price (dollars per bar) | Quantity supplied (millions of bars per week) |
|---|---|---|
| *A* | 0.50 | 0 |
| *B* | 1.00 | 6 |
| *C* | 1.50 | 10 |
| *D* | 2.00 | 13 |
| *E* | 2.50 | 15 |

A rise in the price, other things remaining the same, brings an increase in the quantity supplied.

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# Supply – Marginal Cost

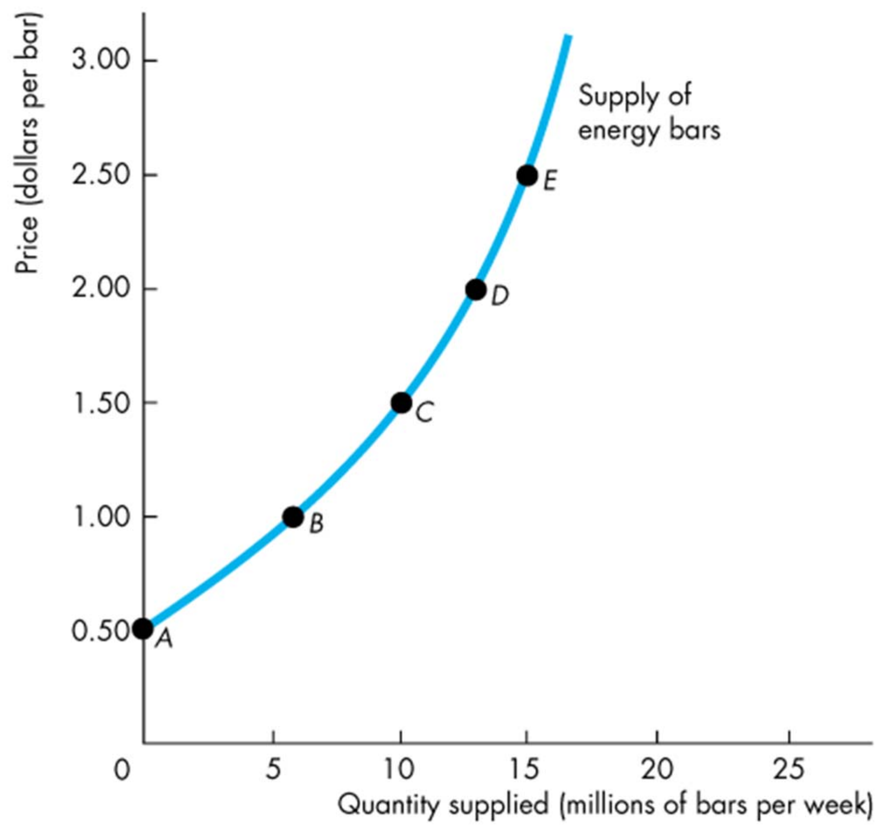
## Minimum Supply Price

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.

This lowest price is <u>*marginal cost*</u>.

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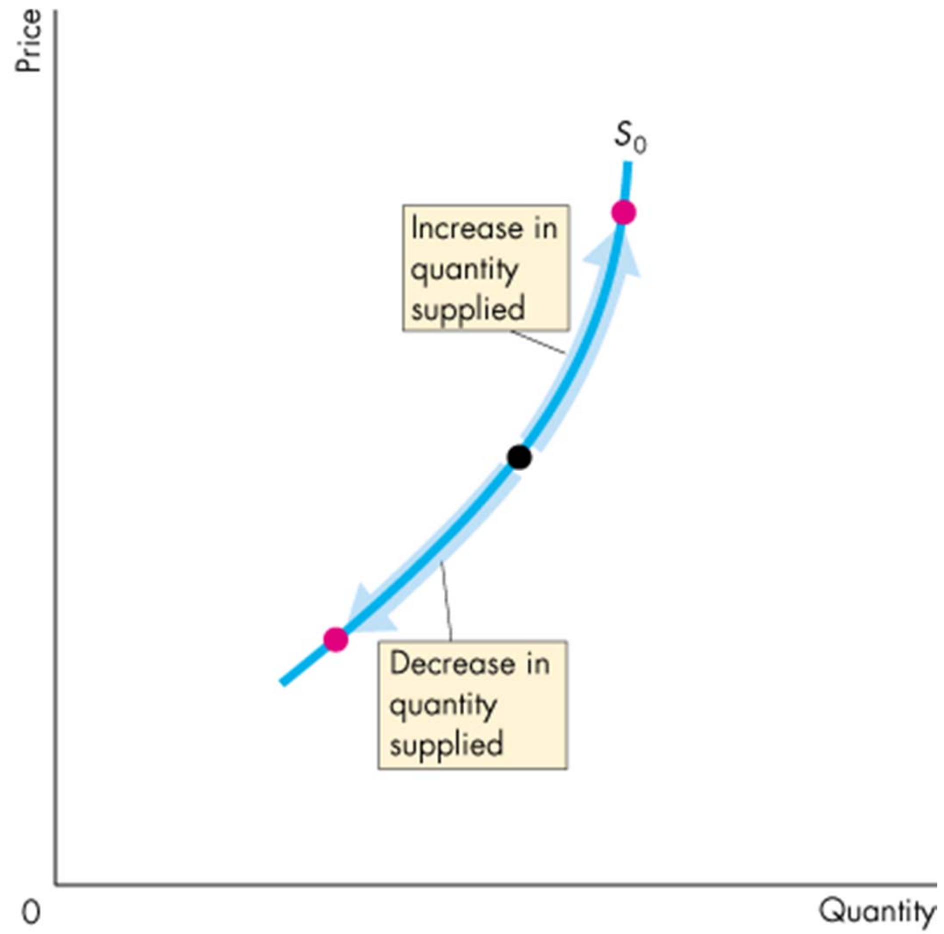
# Moving along the Supply Curve

When the price of the good changes and other influences on sellers' plans remain the same, the quantity supplied changes and there is a movement along the supply curve.

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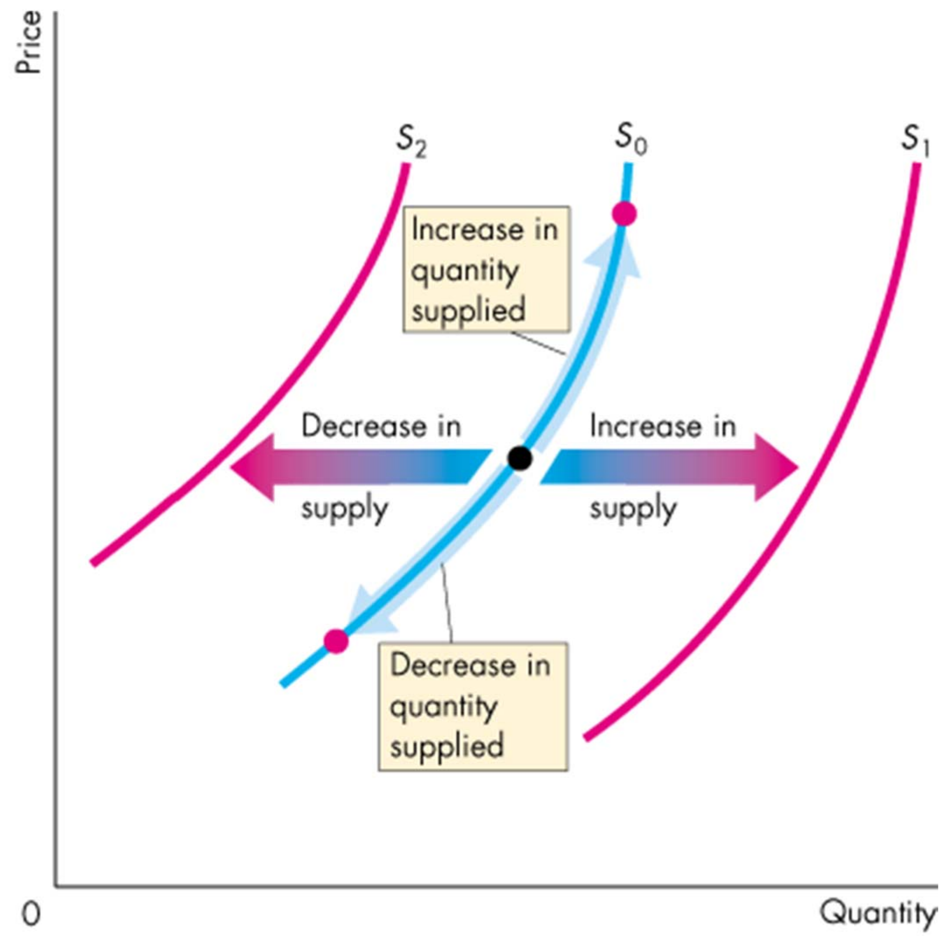
# Shifting the Supply Curve

If the price remains the same but some other influence on sellers' plans changes, supply changes and the supply curve shifts.

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## Change in Supply

When some influence on selling plans other than the price of the good changes, there is a **change in supply** of that good.

The quantity of the good that producers plan to sell changes at each and every price, so there is a new supply curve.

When supply *increases*, the supply curve shifts *rightward*.

When supply *decreases*, the supply curve shifts *leftward*.

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# What changes Supply

The six main factors that change supply of a good are

- The prices of factors of production
- The prices of related goods produced
- Expected future prices
- The number of suppliers
- Technology
- State of nature

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# What changes Supply

## Prices of Factors of Production

If the price of a factor of production used to produce a good rises, the minimum price that a supplier is willing to accept for producing each quantity of that good rises.

So a rise in the price of a factor of production decreases supply and shifts the supply curve leftward.

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# What changes Supply

## Prices of Related Goods Produced

A *substitute in production* for a good is another good that can be produced using the same resources.

The supply of a good increases if the price of a substitute in production falls.

Goods are *complements in production* if they must be produced together.

The supply of a good increases if the price of a complement in production rises.

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# What changes Supply

## Expected Future Prices

If the price of a good is expected to rise in the future, supply of the good today decreases and the supply curve shifts leftward.

## The Number of Suppliers

The larger the number of suppliers of a good, the greater is the supply of the good. An increase in the number of suppliers shifts the supply curve rightward.

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# What changes Supply

## Technology

Advances in technology create new products and lower the cost of producing existing products.

So advances in technology increase supply and shift the supply curve rightward.

## The State of Nature

The state of nature includes all the natural forces that influence production—for example, the weather.

A natural disaster decreases supply and shifts the supply curve leftward.

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# Market Equilibrium

*Equilibrium* is a situation in which opposing forces balance each other. Equilibrium in a market occurs when the price balances the plans of buyers and sellers.

The **equilibrium price** is the price at which the quantity demanded equals the quantity supplied.

The **equilibrium quantity** is the quantity bought and sold at the equilibrium price.

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

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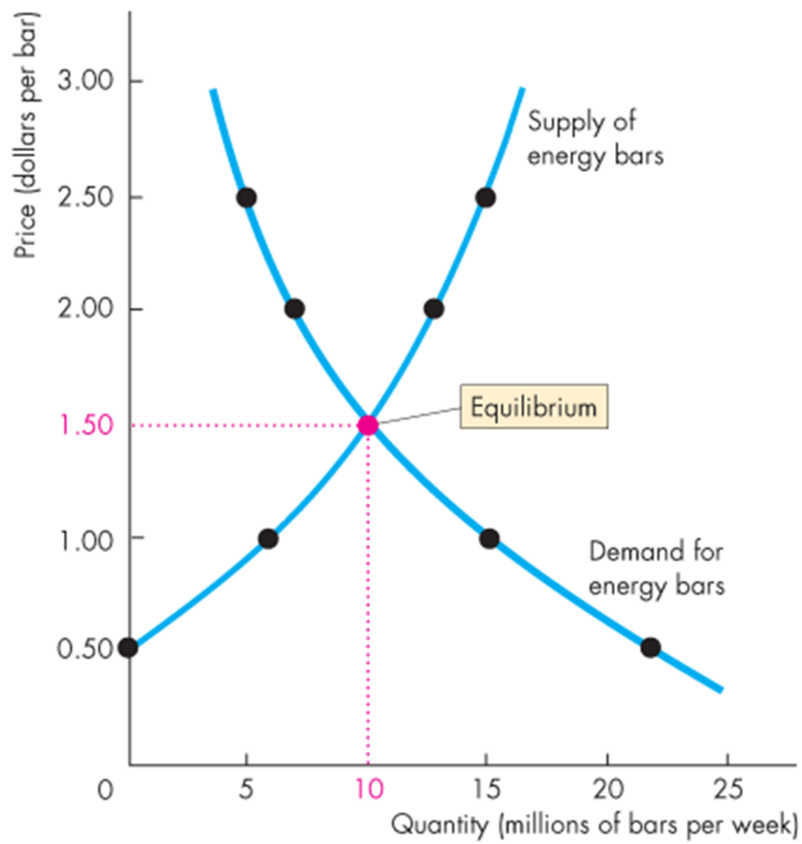
# Market Equilibrium

The market equilibrium—the price at which quantity demanded equals quantity supplied.

| Price (dollars per bar) | Quantity demanded (millions of bars per week) | Quantity supplied (millions of bars per week) |
|---|---|---|
| 0.50 | 22 | 0 |
| 1.00 | 15 | 6 |
| **1.50** | **10** | **10** |
| 2.00 | 7 | 13 |
| 2.50 | 5 | 5 |

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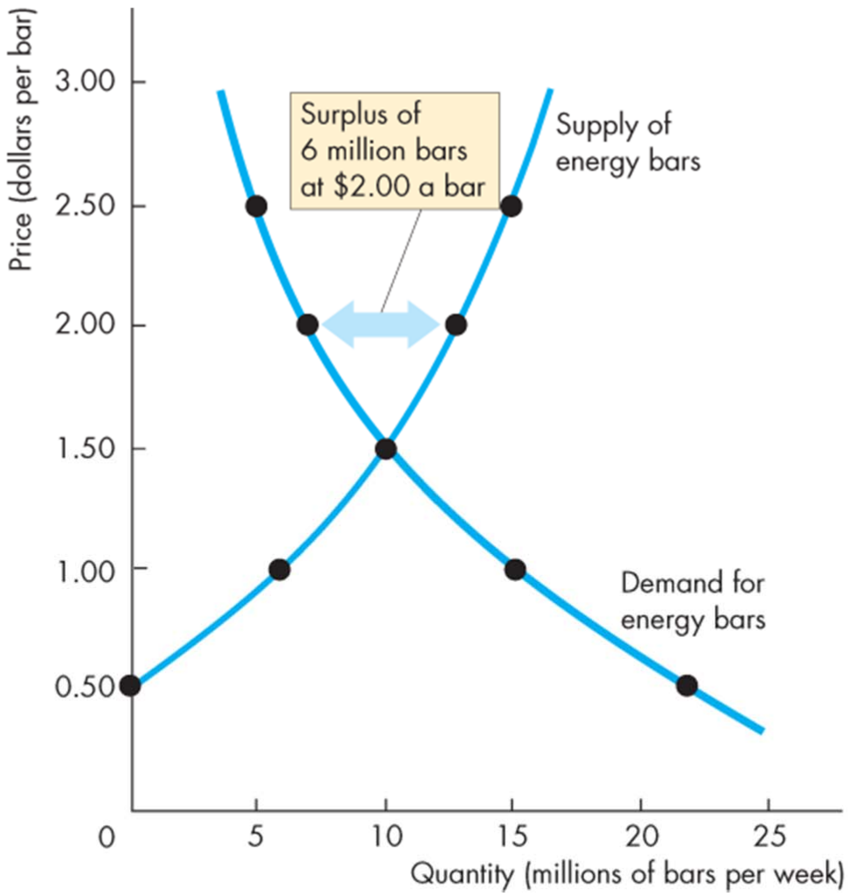
# Market Equilibrium

## Price as a Regulator

| Price (dollars per bar) | Quantity demanded | Quantity supplied | Shortage (–) or surplus (+) |
|---|---|---|---|
| | (millions of bars per week) | | |
| 0.50 | 22 | 0 | –22 |
| 1.00 | 15 | 6 | –9 |
| 1.50 | 10 | 10 | 0 |
| 2.00 | 7 | 15 | +6 |
| 2.50 | 5 | 5 | +10 |




If the price is $2.00 a bar, the quantity supplied *exceeds* the quantity demanded.

There is a *surplus* of 6 million energy bars.

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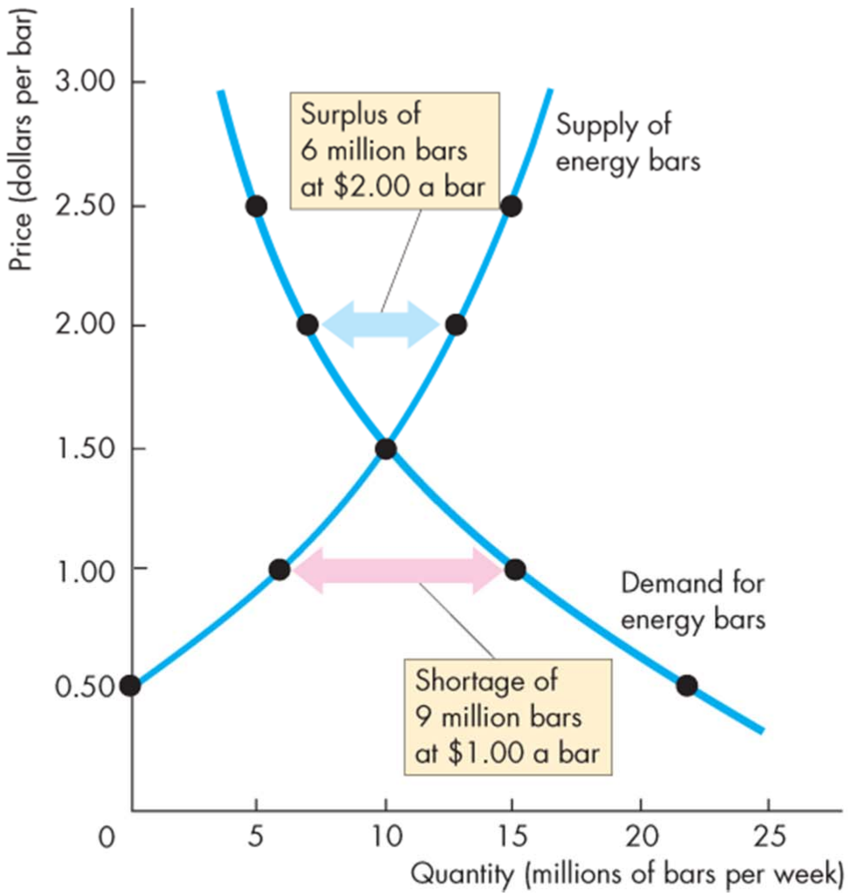
# Market Equilibrium

| Price (dollars per bar) | Quantity demanded | Quantity supplied | Shortage (–) or surplus (+) |
|---|---|---|---|
| | (millions of bars per week) | | |
| 0.50 | 22 | 0 | –22 |
| **1.00** | **15** | **6** | **–9** |
| 1.50 | 10 | 10 | 0 |
| 2.00 | 7 | 15 | +6 |
| 2.50 | 5 | 5 | +10 |




If the price is $1.00 a bar, the quantity demanded *exceeds* the quantity supplied.

A *shortage* of 9 million bars.

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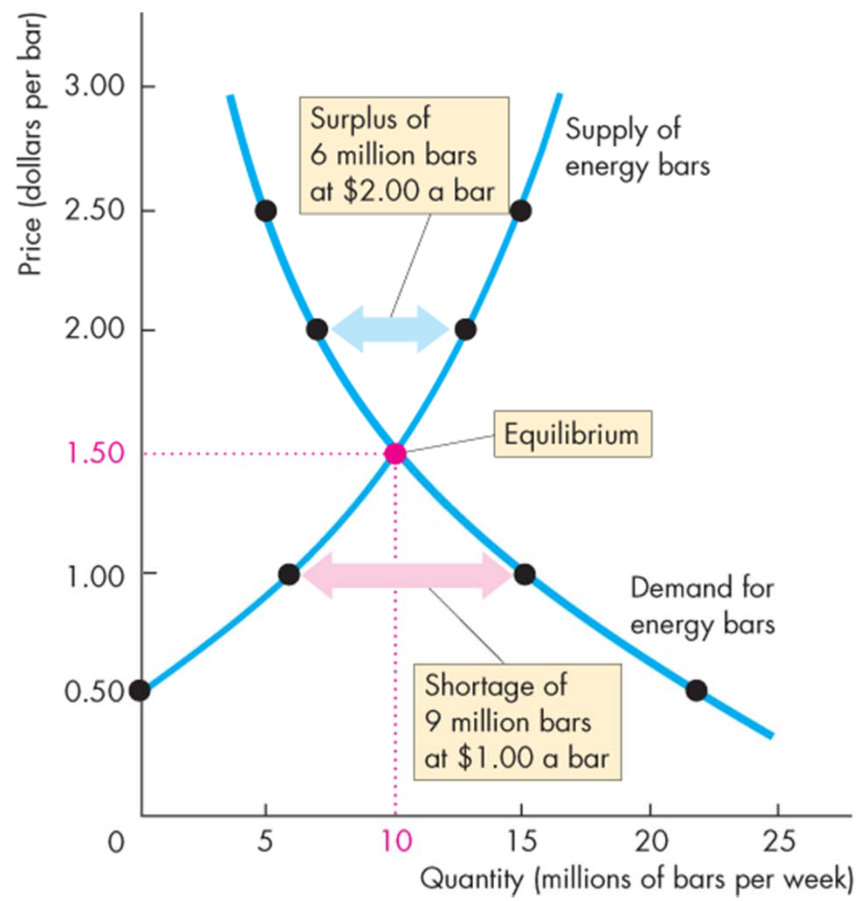
# Market Equilibrium

| Price (dollars per bar) | Quantity demanded | Quantity supplied | Shortage (–) or surplus (+) |
|---|---|---|---|
| | (millions of bars per week) | | |
| 0.50 | 22 | 0 | –22 |
| 1.00 | 15 | 6 | –9 |
| **1.50** | **10** | **10** | **0** |
| 2.00 | 7 | 15 | +6 |
| 2.50 | 5 | 5 | +10 |

If the price is $1.50 a bar, the quantity supplied *equals* the quantity demanded.

No shortage or surplus of bars.

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# Question (1)

- Demand & supply curves tell us

1) The path of price changes.
2) The equilibrium price & quantity trading in the market.
3) How long it takes to reach the equilibrium.
4) All of the above.
5) None of the above.

# Question (1)

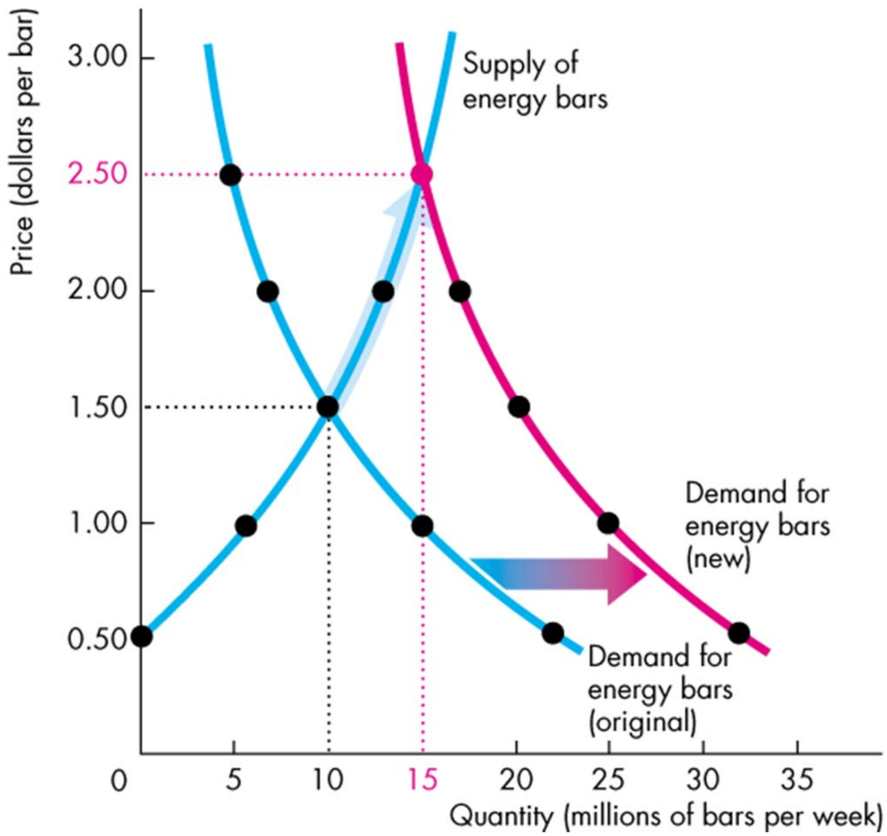
# Predicting Changes in Price and Quantity

## An Increase in Demand

When demand increases the demand curve shifts rightward.

At the original price, there is now a *shortage*.

The price rises, and the quantity supplied increases along the supply curve.

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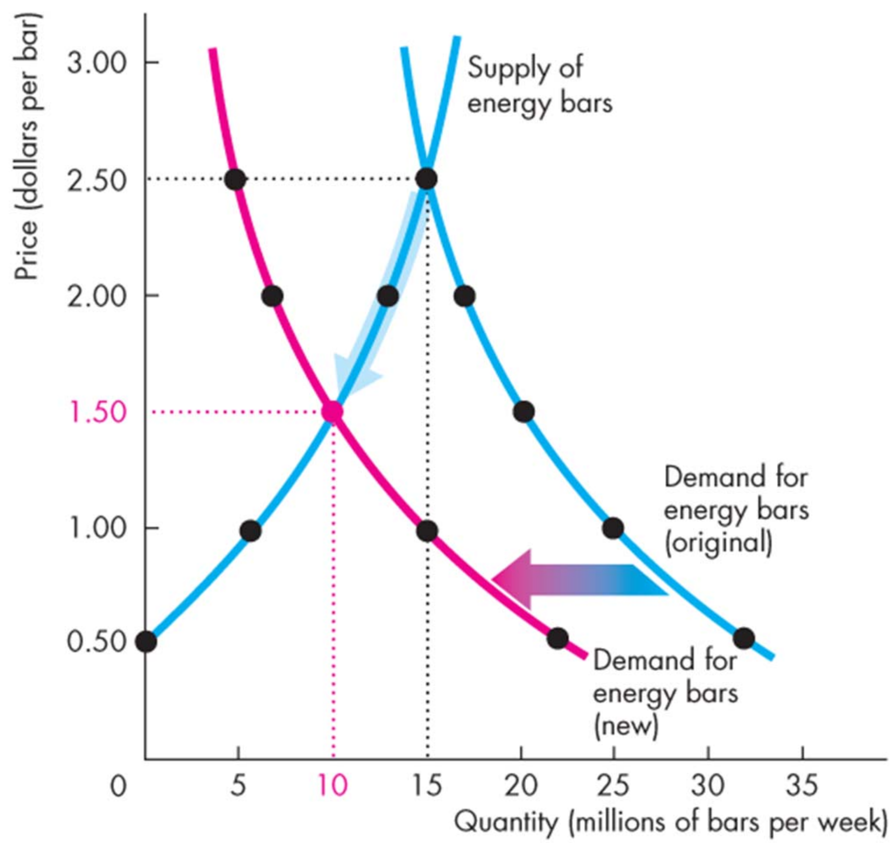
# Predicting Changes in Price and Quantity

## A Decrease in Demand

When demand decreases the demand curve shifts leftward.

At the original price, there is now a *surplus*.

The price falls, and the quantity supplied decreases along the supply curve.

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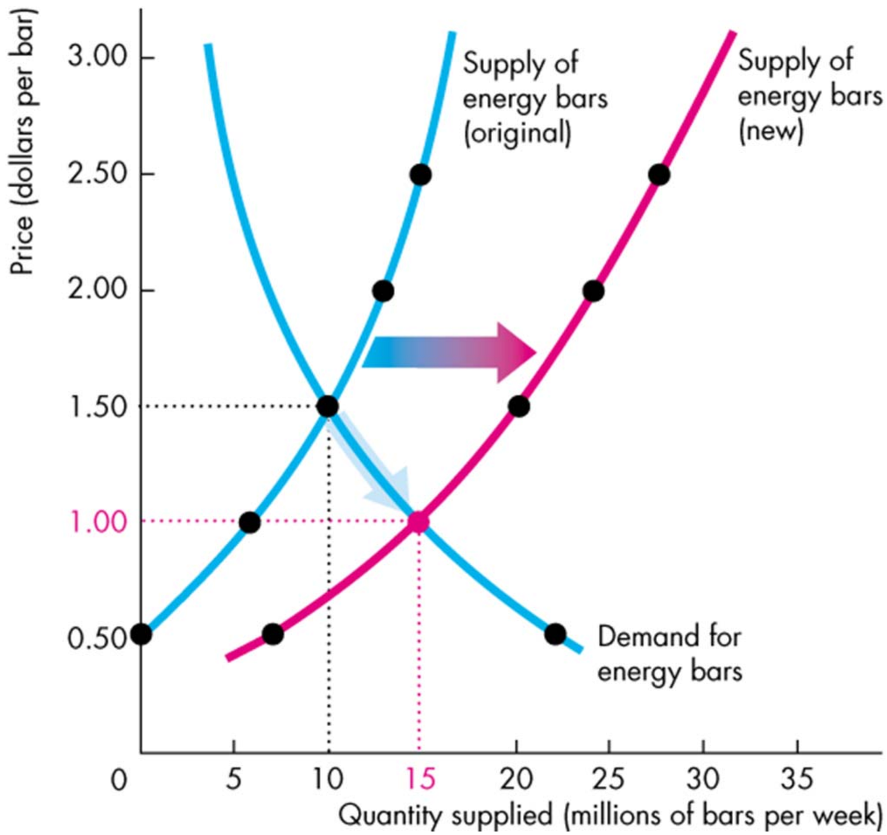
# Predicting Changes in Price and Quantity

## An Increase in Supply

When supply increases the supply curve shifts rightward.

At the original price, there is now a *surplus*.

The price falls, and the quantity demanded increases along the demand curve.

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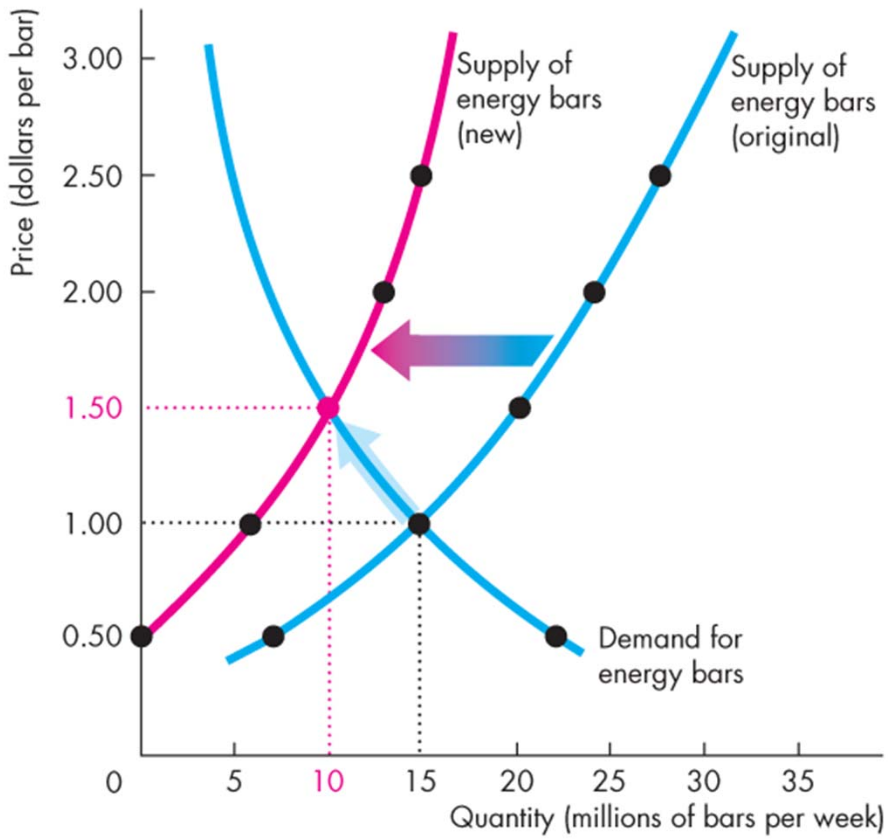
# Predicting Changes in Price and Quantity

## A Decrease in Supply

When supply decreases the supply curve shifts leftward.

At the original price, there is now a *shortage*.

The price rises, and the quantity demanded decreases along the demand curve.

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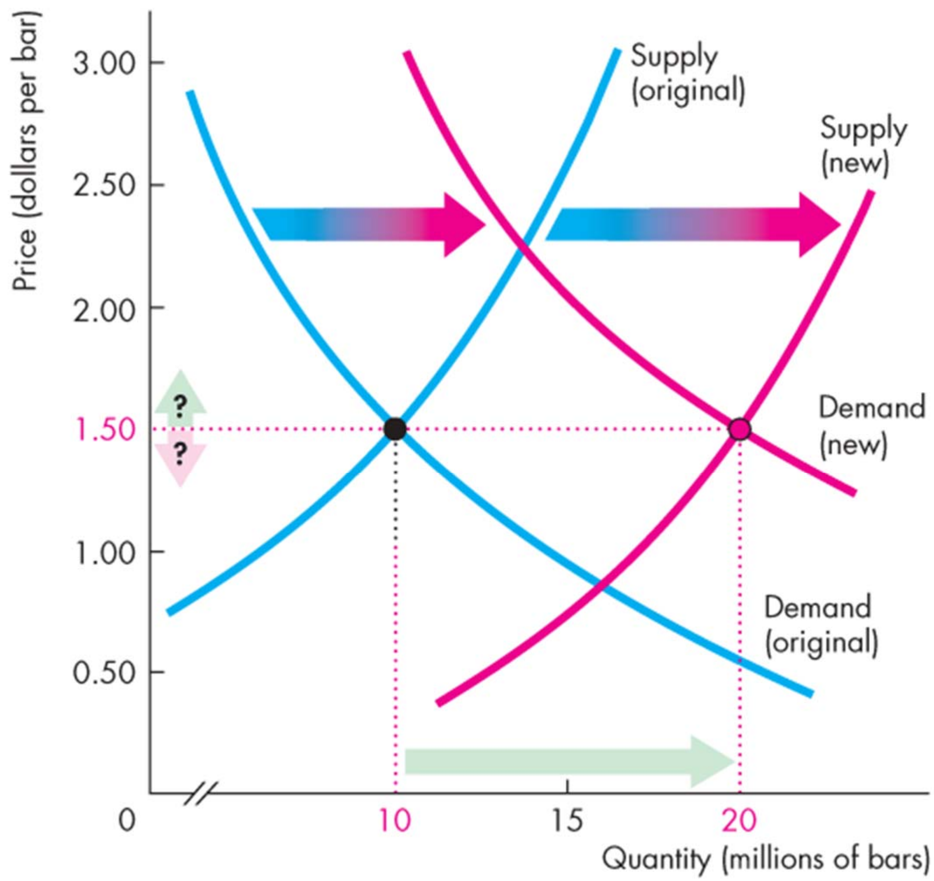
# Predicting Changes in Price and Quantity

## Both Demand and Supply Change in the Same Direction

An increase in demand and an increase in supply *increase* the equilibrium quantity.

The change in equilibrium price is *uncertain* because the increase in demand raises the price and the increase in supply lowers it.




**(a) Increase in both demand and supply**

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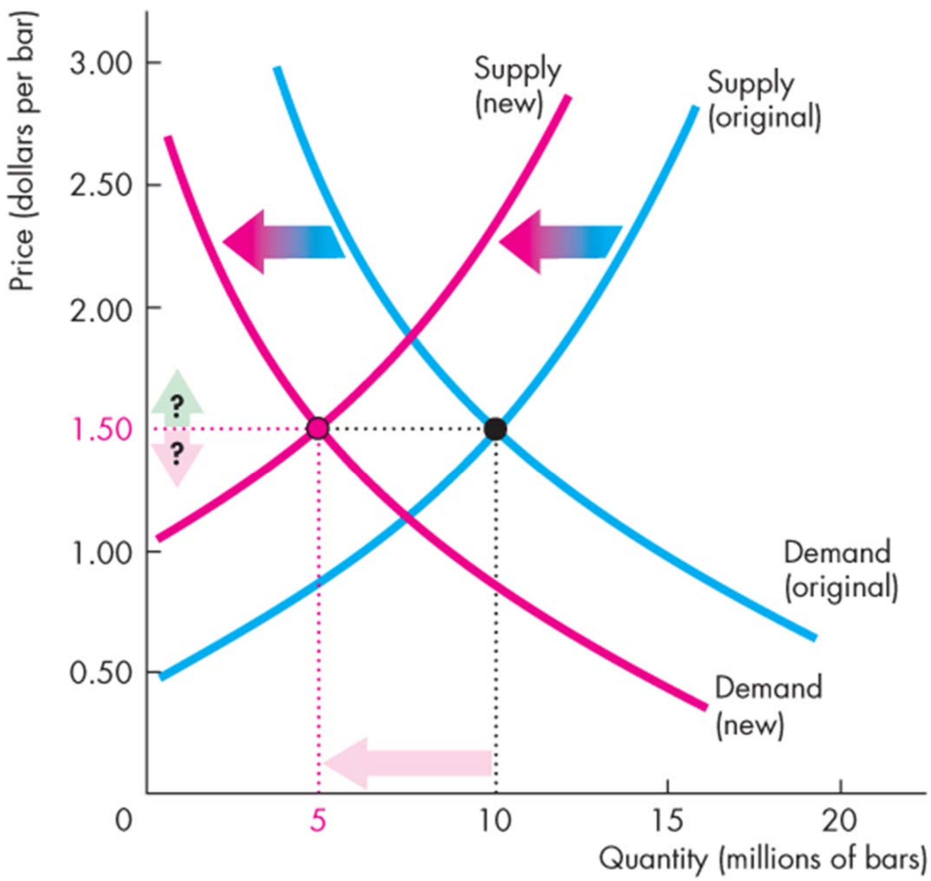
# Predicting Changes in Price and Quantity

A decrease in both demand and supply *decreases* the equilibrium quantity.

The change in equilibrium price is *uncertain* because the decrease in demand lowers the price and the decrease in supply raises the price.




(b) Decrease in both demand and supply

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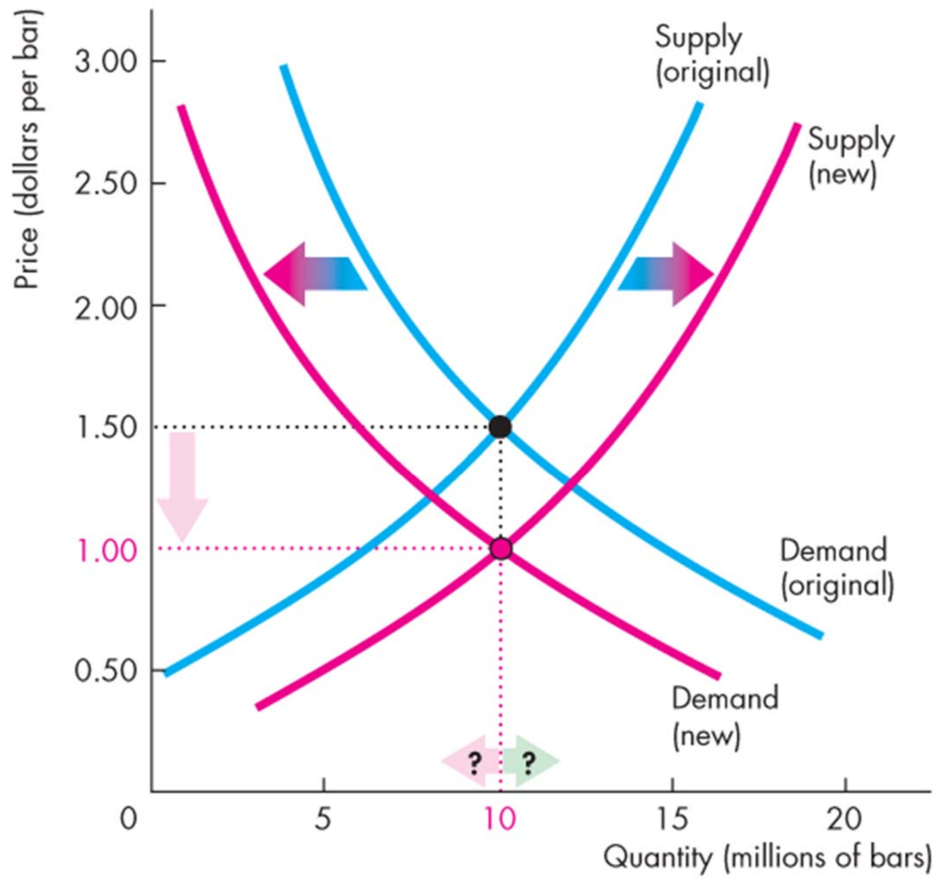
# Predicting Changes in Price and Quantity

## Both Demand and Supply Change in Opposite Directions

A decrease in demand and an increase in supply *lowers* the equilibrium price.

The change in equilibrium quantity is *uncertain* because the decrease in demand decreases the quantity and the increase in supply increases it.




(a) Decrease in demand; increase in supply

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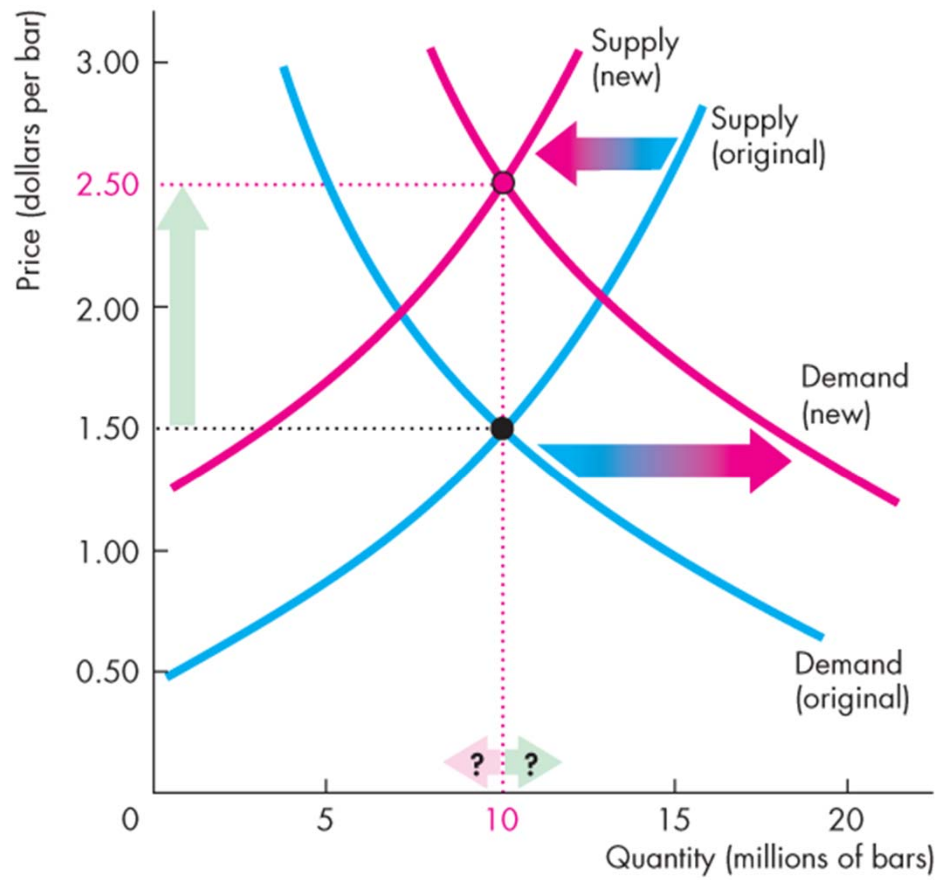
# Predicting Changes in Price and Quantity

An increase in demand and a decrease in supply *raises* the equilibrium price.

The change in equilibrium quantity is *uncertain* because the increase in demand increases the quantity and the decrease in supply decreases it.




**(b) Increase in demand; decrease in supply**

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# Question (2)

- In a competitive market, we observe the equilibrium Q rises but P unchanged. This could be due to

1) Decreasing demand.
2) Increasing supply.
3) Both demand and supply increase.
4) Demand increases and supply decreases.
5) Demand decreases and supply increases.

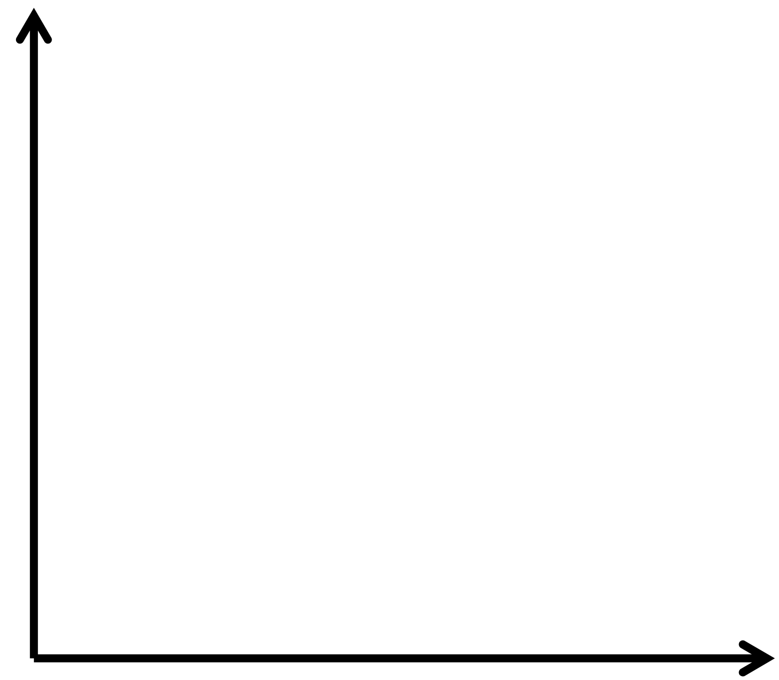
# Question (2)

# HK Property Market – Why so high?

- QEs to fight 2008 crises, money pouring in
- Other reasons that push up the price of HK properties?
- HK gov't introduced "Stamp Duties", hoping to suppress the rising property price.

# Explain the Rise of Property Market

- Impact of hot money on assets?



- What else?

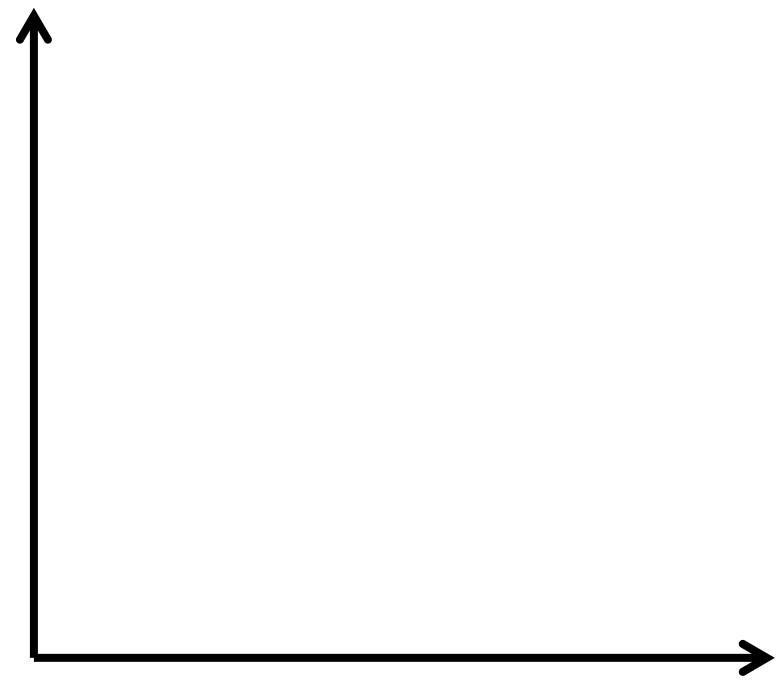
# Government Concerns and Actions

- Reasons gov't hold for intervention:
  - HK property price exceeds the 1997 level.
  - Sharp fall in asset prices in 1997 financial crisis created very negative impacts on the HK economy. Current situation could be a repetition!
  - Hot money can enter and leave quickly!
- Measures:
  - Tax: Property tax on foreign buyers (2009), stamp duties: Both on buyers and sellers
  - Restrictions on mortgage
  - Increase supply of housing

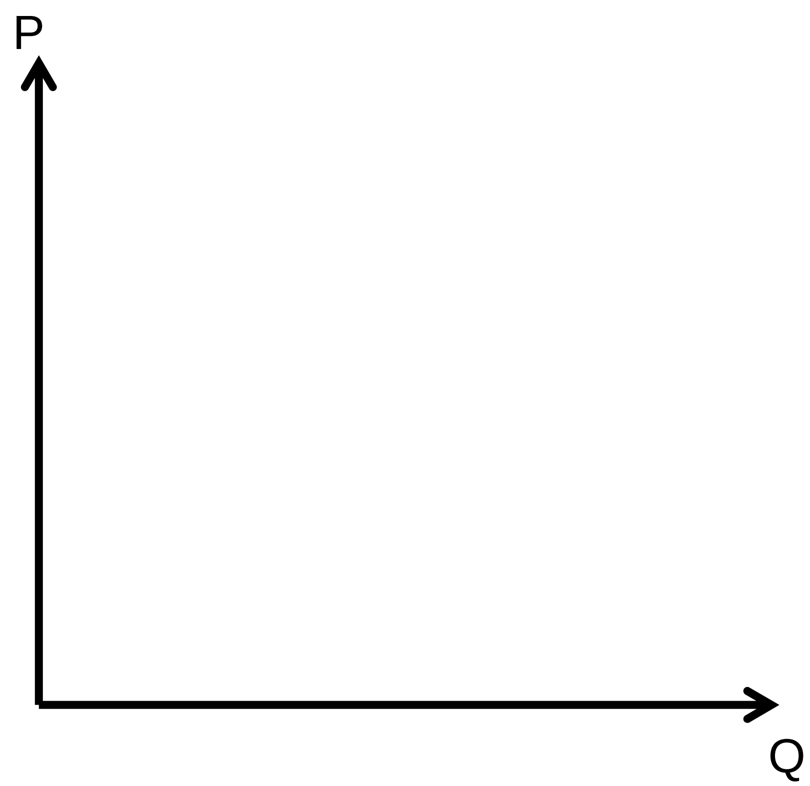
# ECON2103 – Midterm Questions

- How these (different) measures affect demand and/or supply?

# Tax Measures



# Supply Measures



# Summary

- Why the rise of HK property price?
- In HK government's mind

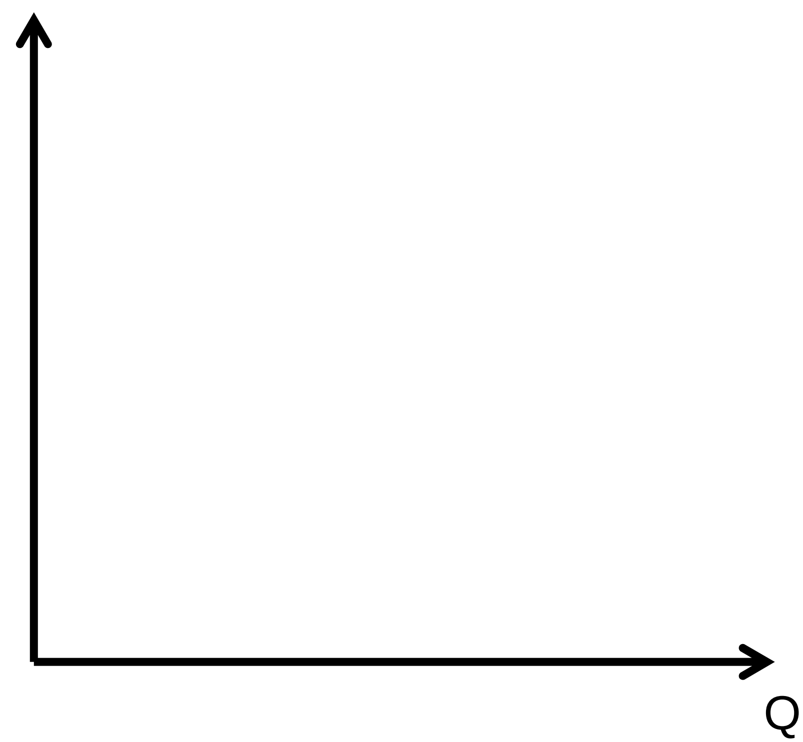
# ECON2103 – Midterm Questions

- Gov’t tax measures significantly decreased the demand in the HK property (sales) market. But we observed:
  - Sale price has not declined too much in HK property (sales) market.
  - Rental price has increased significantly in HK property (rental) market.
- Please provide feasible explanations for these phenomena (from both buyers’ and sellers’ perspectives). What do you learn?

# Part A – Sales

- Demand decreases from D1 to D2, but price has not fallen (too much), why?

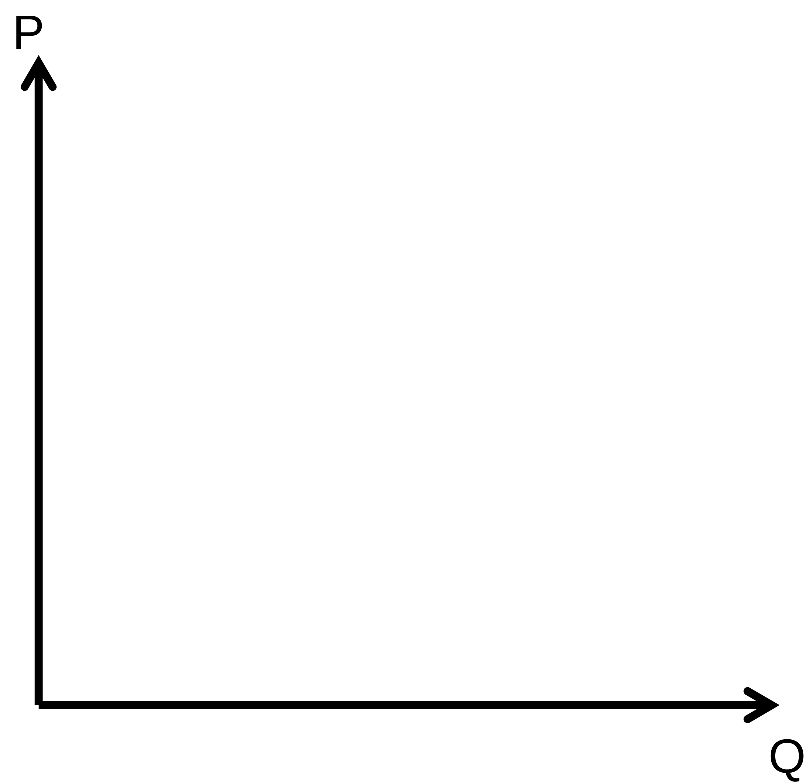
Property - Sales



# Part B – Rental (buyers' side)

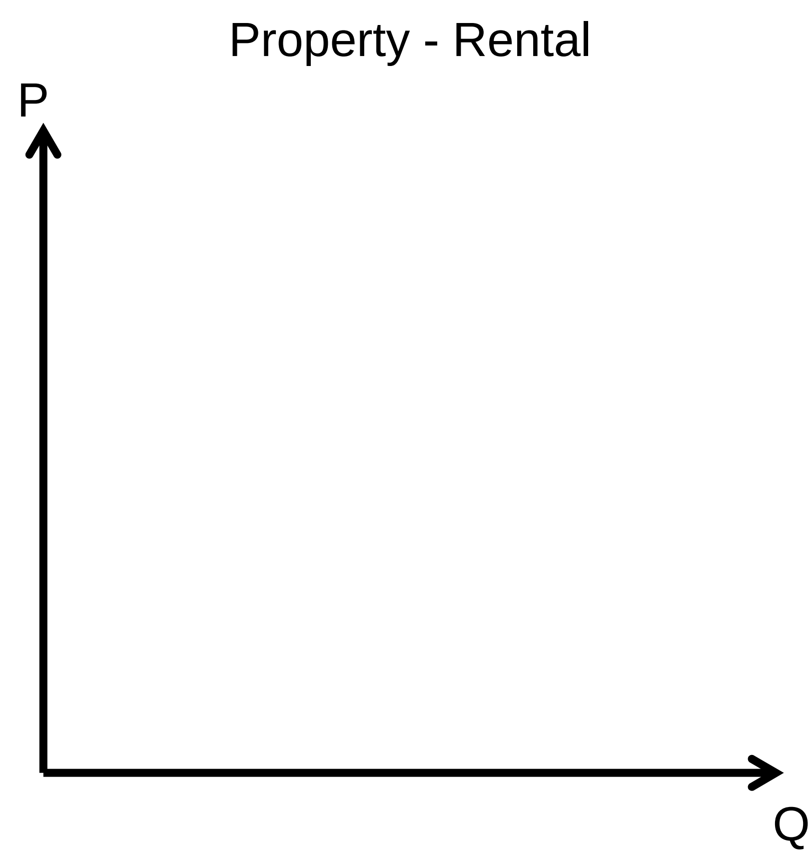
- How to explain P and Q rise sharply?

Property - Rental



# Part C – Rental (sellers' side)

- How to explain P and Q rise sharply?



# Further Discussion

- Recently, more opinions about significant falls in HK property price will appear.
  - More people believe HK gov’t is really committed to do something to suppress property price.
  - More new flats are built, raising mortgage rates, trade war uncertainties, etc.…
- Sellers may be more willing to sell / rent to lock in a good price now before it falls.
  - P goes down.

Thank you very much

End for today ☺

See you next time !