

Perfect Competition

Tasks:

- **Describe** characteristics of perfect competition
- **Explain** relationships between price, marginal revenue, marginal cost, economic profit, and elasticity of demand
- **Describe** a firm's supply function
- **Describe** and **determine** the optimal price and output
- **Explain** factors affecting long-run equilibrium

Perfect Competition

Five factors determine market structure

- The number and relative size of firms supplying the product.
- The degree of product differentiation.
- The power of the seller over pricing decisions.
- The relative strength of the barriers to market entry and exit.
- The degree of non-price competition.

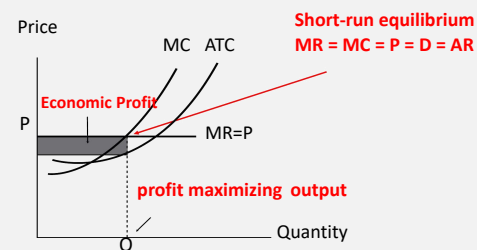
Perfect Competition

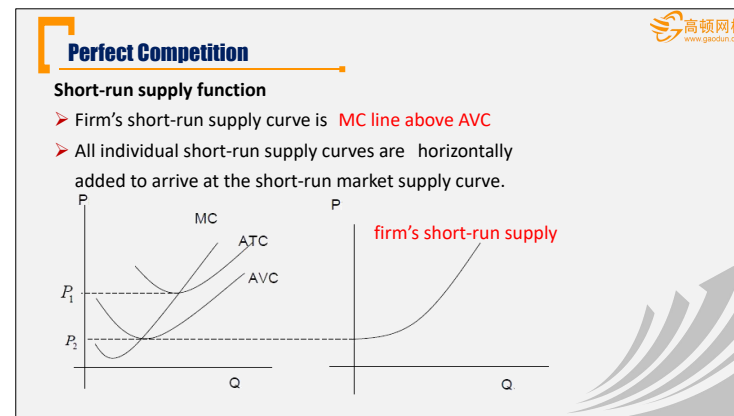
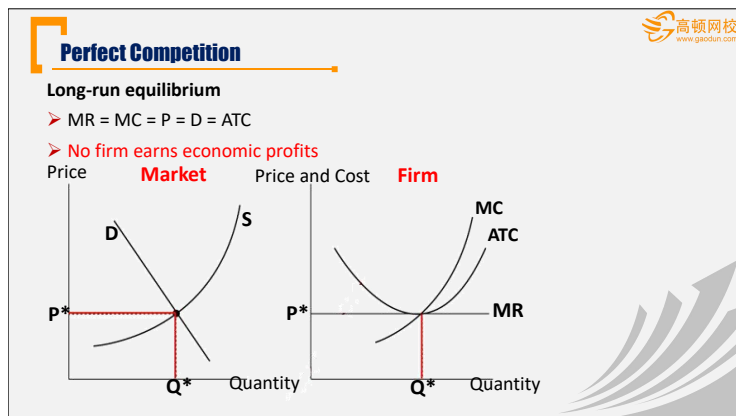
Characteristics of perfect competition

- There are a **large number** of potential buyers and sellers.
- The products offered by the sellers are virtually **identical**.
- There are **few** barriers to entry and exit.
- Sellers have no market-pricing power(**price taker**).
- Non-price competition is **absent**.

Perfect Competition

- Profit maximization input: **MC = MR**





Practice

If companies earn economic profits in a perfectly competitive market, over the long run the supply curve will most likely:

- shift to the left.
- shift to the right.
- remain unchanged.

Answer: B

The economic profit will attract new entrants to the market and encourage existing companies to expand capacity.

Summary

- **Importance:** ★ ★ ★
- **Content:**
 - Characteristics of perfect competition
 - Profit maximization in the short run and long run
 - Short run supply
- **Exam tips:**
 - 必须掌握完全竞争市场特征
 - 必须理解完全竞争企业的短期和长期均衡
 - 必须理解完全竞争企业的短期供应线

Monopolistic Competition

Tasks:

- **Describe** characteristics of monopolistic competition
- **Explain** relationships between price, marginal revenue, marginal cost, economic profit, and elasticity of demand
- **Describe** pricing strategy under monopolistic competition
- **Describe** and **determine** the optimal price and output
- **Explain** factors affecting long-run equilibrium

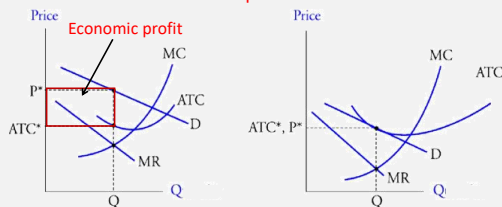
Monopolistic Competition

Characteristics of monopolistic competition

- A large number of buyers and sellers.
- Differentiated products.
- Firms are free to enter and exit.
- Some pricing power.
- Suppliers differentiate their products through advertising and other non-price strategies.

Monopolistic Competition

- **Profit maximization input:** $MC = MR$
- **Long-run equilibrium**
 - $P = ATC$
 - No firm earns economic profits



Monopolistic Competition

Monopolistic Versus Perfect Competition

- Monopolistic competition firms face **downward-sloping**, **highly elastic** demand curves; Perfect competition firms face **horizontal** demand curve.
- Because firms are free to enter and exit. Long-run equilibrium, both monopolistic competition firms and perfect competition firms **earn no economic profits**.

Monopolistic Competition

Monopolistic Versus Perfect Competition

- Long-run equilibrium quantity of monopolistic competition industry is less than optimal (perfect competition industry).
- Product differentiation has costs, it has positive value to consumers.

Monopolistic Competition

Perfect Competition

Summary

- Importance:** ☆ ☆
- Content:**
 - Characteristics of monopolistic competition
 - Profit maximization in the short run and long run
 - Monopolistic Versus perfect competition
- Exam tips:**
 - 掌握垄断竞争的特征
 - 理解垄断竞争企业的短期和长期盈利最大化均衡
 - 对比垄断竞争和完全竞争

Monopoly

Tasks:

- Describe** characteristics of monopoly
- Explain** relationships between price, marginal revenue, marginal cost, economic profit, and elasticity of demand
- Describe** pricing strategy under monopolistic competition
- Describe** and **determine** the optimal price and output
- Explain** factors affecting long-run equilibrium

Monopoly

Characteristics of monopoly(垄断)

- There is a single seller of a highly differentiated product.
- The product offered by the seller has no close substitute.
- Entry into the market is very difficult, with high costs and significant barriers to competition.
- The firm has considerable pricing power.
- The product is differentiated through non-price strategies such as advertising.

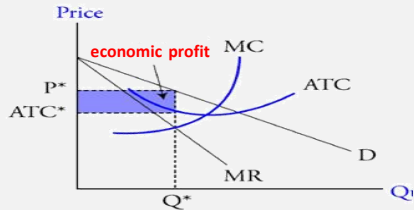
Monopoly

Type of barriers to entry

- Government licensing and legal barriers
- Resource control
- **Natural monopoly(自然垄断)**: Production is based on significant economies of scale and declining cost structure in the market.
 - Examples: electric power generation, natural gas distribution, and the water and sewer industries.

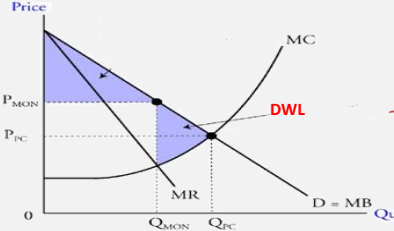
Monopoly

- Firms face downward-sloping, inelastic demand curve.
- Profit maximization input: **MC=MR**
- Economic profits can exist in the short / long run due to high entry barriers.



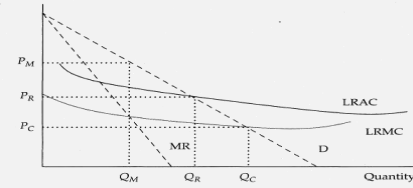
Monopoly

- Monopoly firm produce **less total output** and charge a **higher price** than perfect competitive firm to maximize profits. DWL in monopoly industry.



Monopoly

- Government interference improves resource allocation by regulating the prices monopolies.
- **Average cost pricing**: $P = ATC$, no economic profit.
- **Marginal cost pricing**: $P = MC$, government subsidy.



Practice

A government entity that regulates an authorized monopoly will most likely base regulated prices on:

- A. marginal cost
- B. long run average cost.
- C. first degree price discrimination.

Answer: B

This allows the investors to receive a normal return for the risk they are taking in the market.



Summary

➤ **Importance:** ☆ ☆ ☆

➤ **Content:**

- Characteristics of monopoly
- Types of barriers to entry and natural monopoly
- Profit maximization in the short run and long run
- Government regulation on monopoly

➤ **Exam tips:**

- 掌握垄断市场的特征
- 重点掌握垄断市场的盈利最大化均衡和政府垄断管制策略



Price Discrimination

Tasks:

- **Describe** price discrimination, and its types



Price Discrimination

➤ **Price discrimination(价格歧视):** Charging different consumers different prices for same product or service.

- Customers with different price elasticities of demand for same product.
- Prevent one who bought the product with the low price from reselling it to another who is willing to pay the higher price.



Price Discrimination

- **First-degree price discrimination(一级价格歧视):**
Charge each customer the highest price the customer is willing to pay.
 - Consumer surplus reduced to **zero**.
 - Total surplus **maximized** (social optimal quantity)

Price Discrimination

- **Second-degree price discrimination(二级价格歧视):**
Monopolist offers a menu of quantity based pricing options designed to induce customers to self-select based on how highly they value the product.
 - Volume discounts, volume surcharges
- **Third-degree price discrimination(三级价格歧视):**
Customers are segregated by demographic or other traits.

Price Discrimination

- Compared with monopoly industry, price discrimination reduces allocation inefficiency by increasing output, and DWL is smaller.
- Consumer surplus: **decrease**.
- Producer surplus: **increase**.
- Company's profits can be increased by price discrimination.

Practice

- Which of the following is the least likely outcome when a monopoly adopts perfect price discrimination because of the customers' differing demand elasticities?
- A. The monopolist shares the total surplus with consumers.
 - B. The price for marginal unit becomes less than the price for other units.
 - C. The output increases to the point at which price equals the marginal cost.
- Answer: A**
- In a monopoly, perfect price discrimination results in the total surplus being kept by the producer, the monopolist.

Summary

- Importance: ☆ ☆
- Content:
 - Prerequisites of price discrimination
 - Types of price discrimination
- Exam tips:
 - 了解价格歧视的先决条件，价格歧视对消费者剩余，生产者剩余，和社会总剩余的影响
 - 了解价格歧视的三种类型

Oligopoly

Tasks:

- Describe characteristics of Oligopoly
- Explain relationships between price, marginal revenue, marginal cost, economic profit, and elasticity of demand
- Describe pricing strategy under Oligopoly
- Describe and determine the optimal price and output
- Explain factors affecting long-run equilibrium
- Describe industry concentration measures

Oligopoly

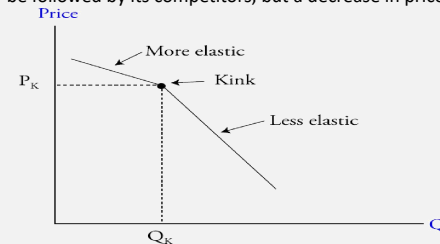
Characteristics of oligopoly(寡头)

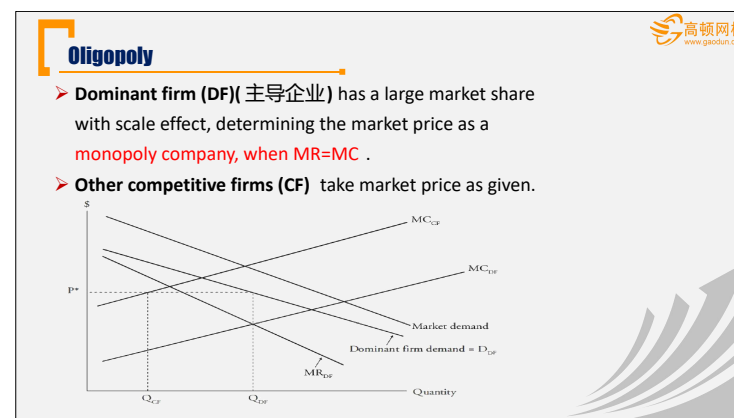
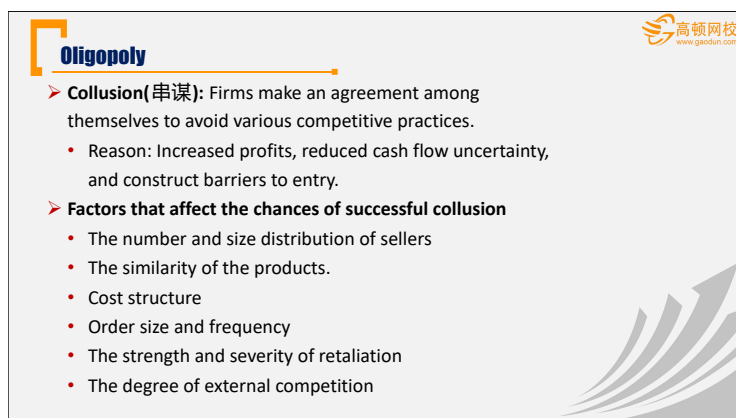
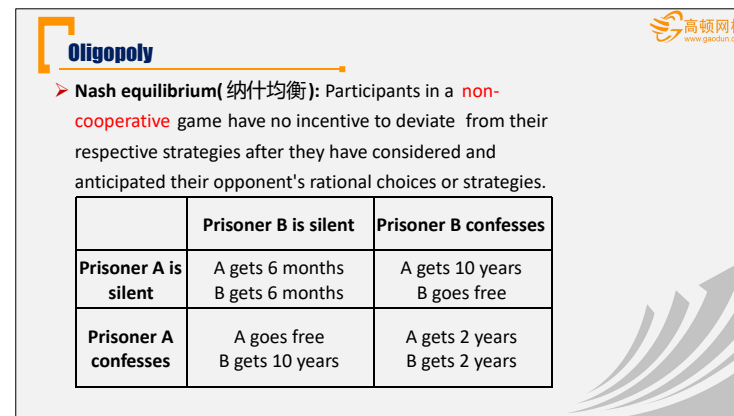
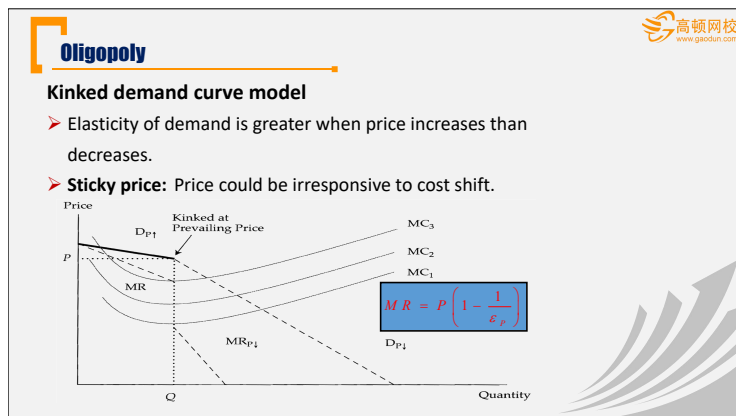
- A small number of potential sellers.
- Products close or differentiated.
- Entry into the market is difficult.
- Substantial pricing power.
- Products are highly differentiated through marketing, features, and other non-price strategies.

Oligopoly

Kinked demand curve model(拐折需求线模型)

- Assumption: An increase in a firm's product price will not be followed by its competitors, but a decrease in price will





Industry Concentration Measures

- **N firms concentration ratio**(N 个公司集中值): Sum of the market shares of the largest N firms in a market.
 - It doesn't show the potential entry threat.
 - It is **unaffected** by mergers.
 - It doesn't consider the elasticity of demand.
- **HHI (Herfindahl-Hirschman Index)**(赫芬达尔-赫希曼指数): Sum of the squared market share of each firm.
 - It doesn't show the potential entry threat.
 - It doesn't consider the elasticity of demand.



Practice

Collusion is less likely in a market when:

- A. the product is homogeneous.
- B. companies have similar market shares.
- C. the cost structures of companies are similar.

Answer: B

When companies have similar market shares, competitive forces tend to outweigh the benefits of collusion.



Summary

- **Importance:** ☆☆☆
- **Content:**
 - Characteristics of oligopoly
 - Kinked demand curve model, Nash equilibrium, Dominant firm model
 - Industry concentration measures
- **Exam tips:**
 - 了解寡头市场特征, 拐折需求线模型, 主导企业模型
 - 重点掌握纳什均衡, 影响串谋的因素, 和市场集中计算方法



Gross Domestic Product (GDP)

Tasks:

- **Calculate** and **Explain** gross domestic product (GDP)
- **Compare** the sum-of-value-added and value-of-final-output methods of calculating GDP
- **Compare** nominal and real GDP
- **Calculate** and **Interpret** the GDP deflator
- **Compare** GDP, national income, personal income, and personal disposable income



Gross Domestic Product (GDP)

➤ Gross domestic product (GDP)(国内生产总值):

The total market value of the goods and services produced in a country within a certain time period.

➤ Key points of GDP

- In a given period of time
- Newly goods and services produced
- Market value
- Exceptions: rent of own house, government services
- Final goods and services

Gross Domestic Product (GDP)

Measure of GDP

- **Aggregate Output(总产量) (AO):** The value of all the goods and services produced in a specified period of times.
- **Aggregate Income(总收入) (AI):** The value of all the payments earned by the suppliers of factors used in the production of goods and services.
- **Aggregate Expenditure (总开支)(AE):** The total amount spent on the goods and services produced in the domestic economy during the period.

Aggregate Output = Aggregate Income = Aggregate Expenditure

Gross Domestic Product (GDP)

➤ Value of Final Output (终值法) and Sum of Value Added (增加值叠加法) Method

	Receipts at Each Stage	Value Added at Each Stage	
Receipts of farmer from miller	0.15	0.15	Value added by farmer
Receipts of miller from baker	0.46	0.31	Value added by miller
Receipts of baker from retailer	0.78	0.32	Value added by baker
Receipts of retailer from final customer	1.00	0.22	Value added by retailer
	1.00	1.00	

Gross Domestic Product (GDP)

- **Nominal GDP(名义GDP):** GDP measured by current prices.
- **Real GDP(实际GDP):** GDP measure by constant prices.

$$\text{Nominal GDP}_t = \sum_{i=1}^N P_{i, \text{current year}} \times Q_{i, \text{current year}}$$

$$\text{Real GDP}_t = \sum_{i=1}^N P_{i, \text{base year}} \times Q_{i, \text{current year}}$$

- **GDP deflator(GDP平减指数)**
= (Nominal GDP / Real GDP) X 100

Gross Domestic Product (GDP)

Using the expenditure approach

$$GDP = C + I + G + (X - M)$$

- C: Consumer spending on final goods and services
- I: Gross private domestic investment (e.g., plant and equipment) and changes in inventory(inventory investment)
- G: Government spending on final goods and services
- X: Exports
- M: Imports

Gross Domestic Product (GDP)

➤ National income

- = employees' wages and benefits
- + corporate and government profits pre-tax
- + interest income
- + unincorporated business owners' income
- + rent
- + indirect business taxes
- subsidies

Gross Domestic Product (GDP)

➤ Personal Income

- = National Income
- Indirect business taxes
- Corporate income taxes
- Undistributed corporate profits
- + Transfer payments

➤ Personal Disposable Income

- = Personal Income - Personal tax

Summary

➤ Importance: ★ ★ ★

➤ Content:

- Definition and measures of GDP
- Value of final output versus sum of value added methods
- Nominal and real GDP, and GDP deflator
- National, personal, and personal disposable income

➤ Exam tips:

- 掌握GDP定义和计算方法
- 区别名义GDP和实际GDP, 计算GDP平减指数
- 了解国家收入, 个人收入, 和个人可支配收入

Aggregate Demand

Tasks:

- Explain the fundamental relationship among saving, investment, the fiscal balance, and the trade balance
- Explain the IS and LM curves and how they combine to generate the aggregate demand curve

Saving, Investment, Fiscal Balance and Trade Balance

- Using the expenditure approach: $GDP = C + I + G + (X - M)$
- Using the income approach: $GDP = C + S + T$
 - S: Household and business savings
 - T: Taxes
- $S - I = (G - T) + (X - M)$
 - $G - T$: fiscal balance
 - ✓ $G - T > 0$, government deficit
 - ✓ $G - T < 0$, government surplus
 - $X - M$: net exports, or trade balance
 - ✓ $X - M > 0$, trade surplus
 - ✓ $X - M < 0$, trade deficit

Aggregate Demand

IS Curve

- Aggregate income (AI) = Aggregate expenditure (AE)

$$C + S + T = C + I + G + (X - M) \quad (1)$$

$$S = I + (G - T) + (X - M) \quad (2)$$

- To simplify we ignore the government and foreign sector

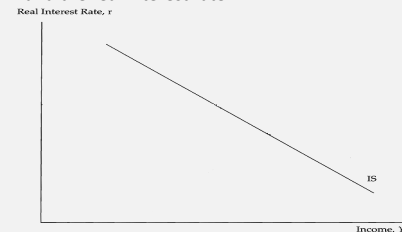
$$S(Y) = I(r) \quad (3)$$

- Marginal propensity to consume (MPC)(边际消费倾向):
The proportion of additional income spent on consumption.

Aggregate Demand

IS Curve

- IS curve presents an inverse relationship between income and the real interest rate.



Aggregate Demand

➤ Quantity theory of money(货币数量理论):

$$MV = PY$$

- M: Money supply
- V: Velocity of money in transactions
- P: Price level
- Y: Real GDP

➤ Monetarists consider that velocity of money and real GDP change only slowly.

- Money neutrality: Change of money supply only cause fluctuation of price level and doesn't affect real output in long run.

Aggregate Demand

Keynes's demand for money theory:

$$M_s / P = M_d (r, Y)$$

➤ Transactions demand for money (交易性货币需求):

Money held to finance transactions, **transaction demand rising with larger GDP**.

➤ Precautionary demand for money(预防性货币需求):

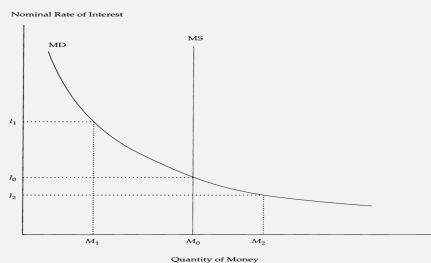
Provide a buffer against unforeseen events that might require money, **precautionary demand rising with larger GDP**.

➤ Speculative demand for money (投机性货币需求):

Money held to take advantage of the potential opportunities or risks, **speculative demand rising with lower interest rate**.

Aggregate Demand

➤ Supply of money is determined by the central bank and is not affected by changes in interest rates.

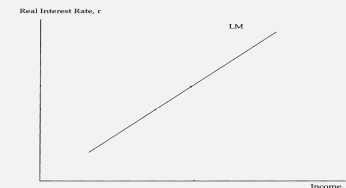


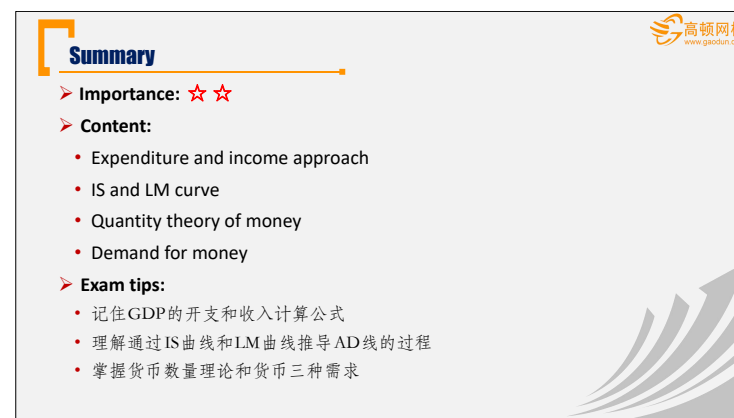
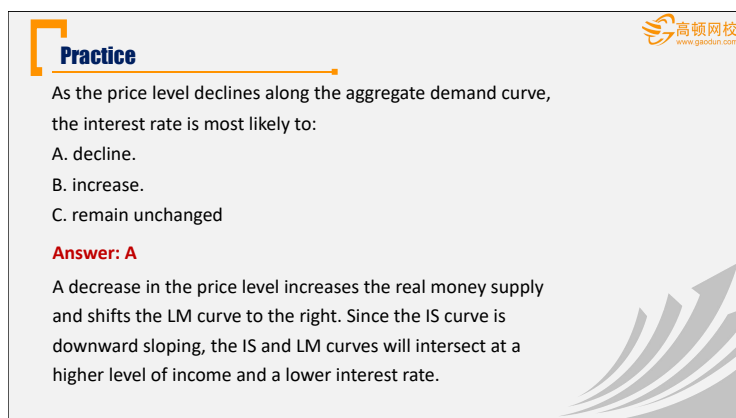
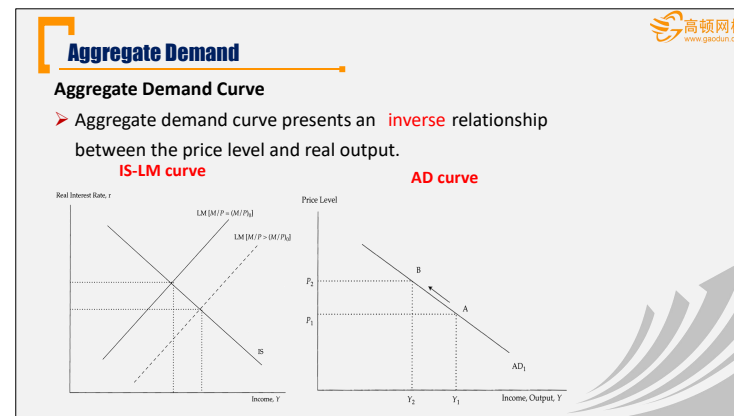
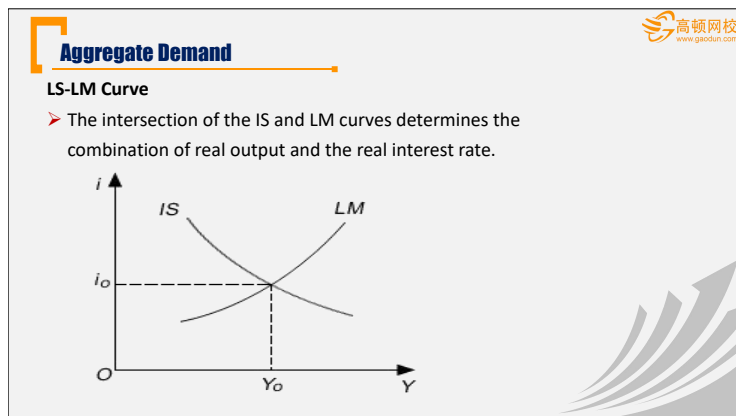
Aggregate Demand

LM Curve

➤ $M_d (r, Y)$ increases with the decrease of interest rate and the rise of GDP.

➤ LM curve presents an **positive** relationship between income and the real interest rate.





Aggregate Supply and Macroeconomic Equilibrium

Tasks:

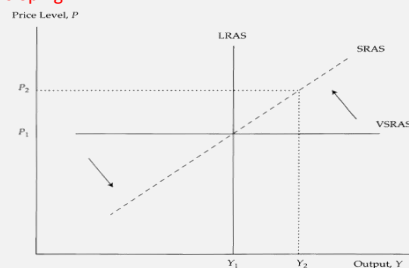
- **Explain** the aggregate supply curve in the short run and long run
- **Explain** causes of movements along and shifts in aggregate demand and supply curves
- **Describe** macroeconomic equilibrium

Aggregate Supply

- **Very short run(超短期):** Companies increase or decrease output to some degree without changing price.
 - Very short-run aggregate supply (VSRAS) curve is **perfectly elastic**.
- **Long run(长期):** Wages and other input prices change proportionately so that higher aggregate price level has no impact on aggregate supply.
 - Long-run aggregate supply (LRAS) curve is **perfectly inelastic**.
 - ✓ The level of output as **potential GDP** (潜在GDP)
 - ✓ **Full employment GDP** (充分就业GDP)
 - ✓ Natural rate of unemployment(自然失业率)

Aggregate Supply

- **Short-run aggregate supply (SRAS)(短期):** curve is **upward sloping**.



Shifts in Aggregate Demand and Aggregate Supply

Factors that shift the aggregate demand

- Fiscal policy
- Monetary policy
- Household wealth
- Consumer and business expectations
- Capacity utilization
- The exchange rate
- Growth in global economy

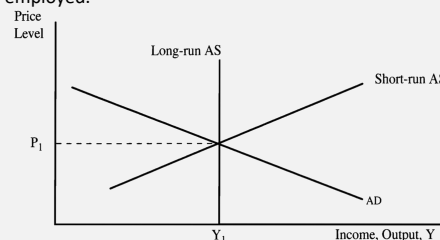
Shifts in Aggregate Demand and Aggregate Supply

Factors that shift the short-run aggregate supply

- Nominal wages
- Input prices, including the price of natural resources
- Expectations about future output prices and the overall price level
- Business taxes and subsidies
- The exchange rate.

Shifts in Aggregate Demand and Aggregate Supply

- Under long-run full employment equilibrium, the economy is at **potential real GDP**. Both labor and capital are fully employed.



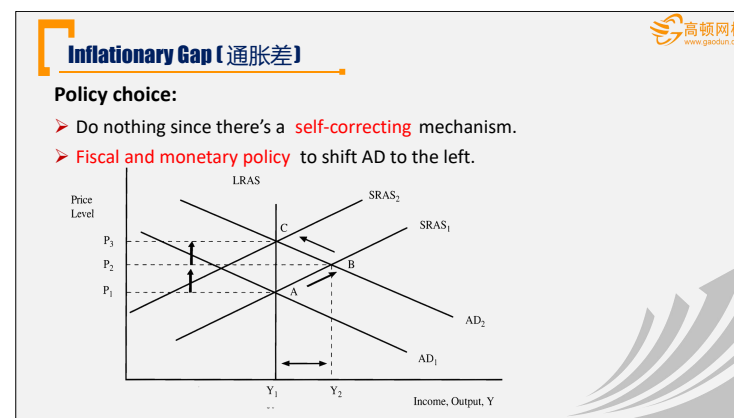
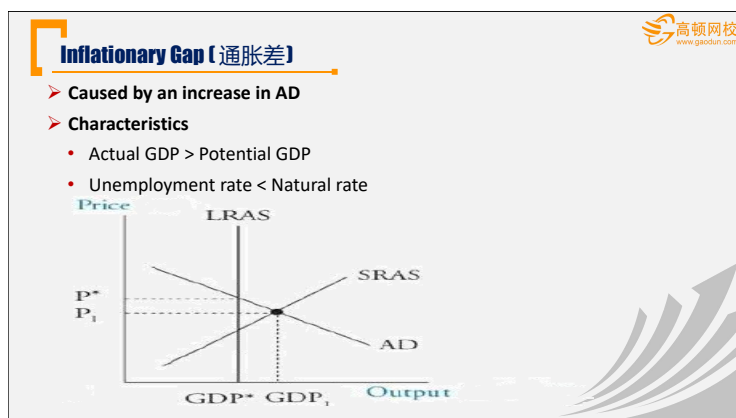
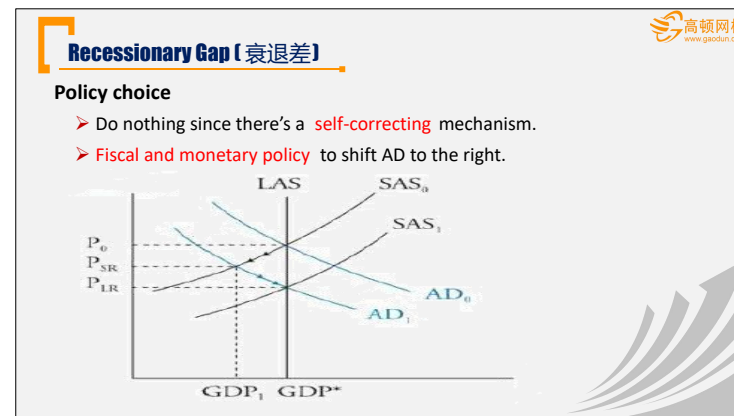
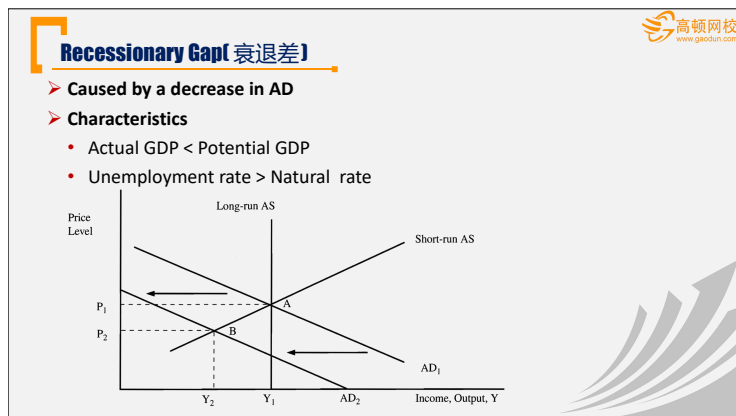
Summary

- Importance: ★ ★ ★
- Content:
 - Very short run, short run, and long run aggregate supply
 - Shifts in aggregate demand and aggregate supply curves
 - Macroeconomic equilibrium
- Exam tips:
 - 理解超短期, 短期, 和长期总供应线
 - 重点掌握导致总供应线和总需求线移动的原因
 - 理解宏观经济均衡

Recessionary Gap, Inflationary Gap, Stagflation

Tasks:

- **Distinguish** the short run recessionary gap, short run inflationary gap, and short run stagflation
- **Explain** how a short run macroeconomic equilibrium may occur at a level above or below full employment
- **Analyze** the effect of combined changes in aggregate supply and demand on the economy



Stagflation (滞胀)

- Caused by a decrease in AS
- Characteristics
 - High Inflation
 - Unemployment rate > Natural rate

Effect of combined changes in AD and AS

- The business cycle and the resulting fluctuations in real GDP are caused by shifts in the AD and AS curves.

Change in AS	Change in AD	Effect on GDP	Effect on Price
Increase	Increase	Increase	Indeterminate
Decrease	Decrease	Decrease	Indeterminate
Increase	Decrease	Indeterminate	Decrease
Decrease	Increase	Indeterminate	Increase

Summary

- Importance: ★★ ★
- Content:
 - Short run recessionary gap
 - Short run inflationary gap
 - Short run stagflation
 - Effect of combined changes in AD and AS
- Exam tips:
 - 理解和区别造成短期衰退差, 通胀差, 和滞胀的原因
 - 掌握在衰退差, 通胀差, 和滞胀情况下的政策选择
 - 理解AD先和AS线移动对GDP和物价水平的影响