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Economics

2015 CFA一级知识框架图(上)



Framework

Microeconomic Analysis	R13 demand and supply: introduction
	R14 demand and supply: consumer demand introduction
	R15 demand and supply: the firm
	R16 the firm and the market structure
Macroeconomic Analysis	R17 aggregate output, price, and economic growth
	R18 understand business cycles
	R19 monetary and fiscal Policy
Economics in a Global Context	R20 international trade and capital flow
	R21 currency exchange rate

Reading 13

Demand and Supply: Introduction

本章知识点比较零散

Types of Markets

Types of Markets

Goods markets: finished goods & services, Intermediate goods

Factor markets: land, labor, physical capital, materials

Capital markets: raise long-term capital

Demand & Supply: Introduction

Demand & Supply

Demand
function

$$Q^d_x = f(p_x, I, p_{Y...})$$

Movements along: 本商品价格 p_x 发生改变

Shifts★: income & p_y (其他商品价格) → 使得demand上升, 曲线向右shift

Supply
Function

$$Q^s_x = f(P_X, cost...)$$

Movements along: 本商品价格 p_x 发生改变

Shifts★: cost上升(比如wage) → 使得supply下降, 曲线向左shift

Market
Equilibrium

★★

计算excess demand & excess supply

Stable:

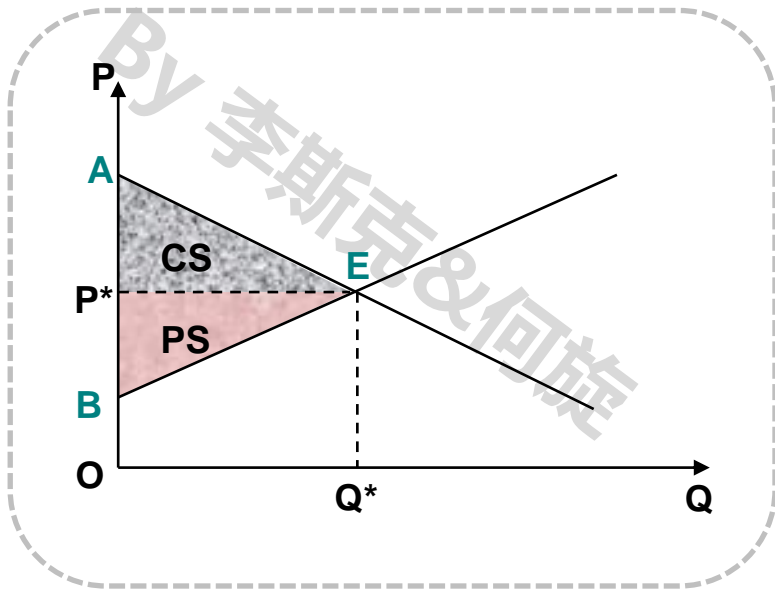
- There are forces that move price and quantity back towards equilibrium.
- 判断: 当 $P > P^*$ (均衡价格) → supply > demand → P下降, 会自动回归均衡

Unstable:

- Prices above (below) equilibrium will tend to get further from equilibrium.
- 判断: 当 $P > P^*$ (均衡价格) → demand > supply → P上升, 离均衡越来越远

Surplus:

1. When supply = demand, the sum of consumer surplus and producer surplus is maximized.
2. 计算: consumer surplus & producer surplus



Deadweight Loss: Underproduction or Overproduction

- | | |
|---------------|--|
| Price ceiling | <ul style="list-style-type: none">• If the ceiling is above the equilibrium price, it will have no effect.• Underproduction; In the long run, price ceilings lead to inefficiencies |
|---------------|--|

- | | |
|-------------|---|
| Price floor | <ul style="list-style-type: none">• If the floor is below the equilibrium price, it will have no effect.• Overproduction; Suppliers will not be able to sell all they produce. |
|-------------|---|

- | | |
|-----|---|
| Tax | <ul style="list-style-type: none">• Actual incidence: sellers and buyers• Tax on producers → supply curve 左移;
Tax on buyers → demand curve 左移• If the demand curve is less elastic, buyers will bear a higher tax burden. |
|-----|---|

Deadweight Loss (续)

Subsidies	overproduction
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Quotas	underproduction
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Monopoly	underproduction
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External costs	overproduction, e.g. pollution
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External benefits	underproduction, e.g. forestation
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Public goods	underproduction, e.g. air, national defense
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Common resources	overproduction, e.g. timber, coal
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Auctions

Single Price Auction for Treasury bond ★

sell \$115 billion

Bid Price Per \$100	Competitive Bids (\$ billions)	Cumulative Competitive Bids (\$ billions)	Non-competitive Bids (\$ billions)	Total Cumulative Bids (\$ billions)
99.8425	12	12	10	22
99.8420	20	32	10	42
99.8415	36	68	10	78
99.8410	29	97	10	107
99.8405	5	102	10	112
99.8400	15	117	10	127
99.8395	10	127	10	137

结论：

1. Bid price > 成交价 → 一般可以全部成交；
2. Bid price = 成交价 → 一般只能成交一部分；
3. Bid price < 成交价 → 全部不能成交

分类	具体类型
按标的物分	Common value auction → winner's curse
	Private value auction
按拍卖方法分	Ascending price auction (English auction)
	Sealed bid auction: first price & second price
	descending price auction (Dutch auction)

Elasticity



Price Elasticity	计算: price elasticity of demand = $\frac{DQ/Q}{DP/P}$	
	分类: 1. highly elastic → demand curve 较平坦 2. relatively inelastic → demand curve 较陡峭 3. perfectly elastic & perfectly inelastic	
	<ul style="list-style-type: none"> • 同一条 demand curve (直线), 每一个点的弹性都不同; • Total revenue is maximized at unit elastic; • 弹性大, 降价; 弹性小, 涨价 	
	影响因素: Availability of substitutes: 越可得, 弹性越大 Relative amount of income spent on the good: 花的越多, 对价格越敏感 Time since the price change: long run, 弹性更大	
Cross elasticity	+ → substitute goods - → complement goods	cross elasticity of demand = $\frac{DQ_A/Q_A}{DP_B/P_B}$
Income elasticity	income elasticity of demand = $\frac{DQ/Q}{DI/I}$	
	✓ Normal Goods: (> 0) → Luxuries (>1); Necessities (between 0~1) ✓ Inferior Goods: (<0)	

Reading 14

Demand and Supply: Consumer Demand Introduction

Utility Theory

Utility is an ordinal measure, rather than a cardinal measure.

Consumer choice 假设:

1. Complete preferences: $A > B$ or $A < B$ or $A = B$
2. Transitive preferences: $A > B$ and $B > C \rightarrow A > C$
3. Non-satiation: "more is better", $A+1 > A$

Indifference Curve★★

性质:

1. slope downward
2. convex towards the origin
3. Indifference curves cannot cross

MRS★★

1. MRS是无差异曲线斜率 $\rightarrow MRS_{XY} = - \Delta Y / \Delta X$
1. $MRS_{XY} = 3$, increase 1 unit of Good X, have to give up 3 units of Good Y, holding utility constant.
2. Diminishing marginal rate of substitution
 - ✓ $MRS_{XY} = MU_X / MU_Y$
 - ✓ MRS递减的原因是MU是递减的

Budget constraint

$$P_X * Q_X + P_Y * Q_Y \leq I$$

1. Slope of Budget constraint is the price ratio (P_X/P_Y)
2. Changing prices: 斜率改变
3. Changing income: 平行移动

Consumer equilibrium ★

Indifference curve & Budget constraint的切点:

$$MRS_{XY} = -\frac{DY}{DX} = \frac{MU_X}{MU_Y} = \frac{P_X}{P_Y}$$

- ✓ $MRS_{XY} < P_X/P_Y$, 减少X的消费, 增加Y的消费;
- ✓ $MRS_{XY} > P_X/P_Y$, 增加X的消费, 减少Y的消费

Substitution and Income Effects ★★

注意：使得Q上升就是positive effect

名称	原理	结果
Substitution effect	P_x 下降→用X替代Y→ Q_x 上升	Positive effect
Income effect	P_x 下降→Real income上升→ Q_x ?	Normal good: Q_x 上升 (positive)
		Inferior good: Q_x 下降 (negative)
Total effect	Normal goods: 都是正的效应	Positive effect: P_x 下降→ Q_x 上升
	一般的inferior good: Substitution effect > Income effect	Positive effect: P_x 下降→ Q_x 上升
	Giffen good (特殊的inferior): Substitution effect > Income effect	Negative effect: P_x 下降→ Q_x 下降

Giffen goods & Veblen goods区别: ★★

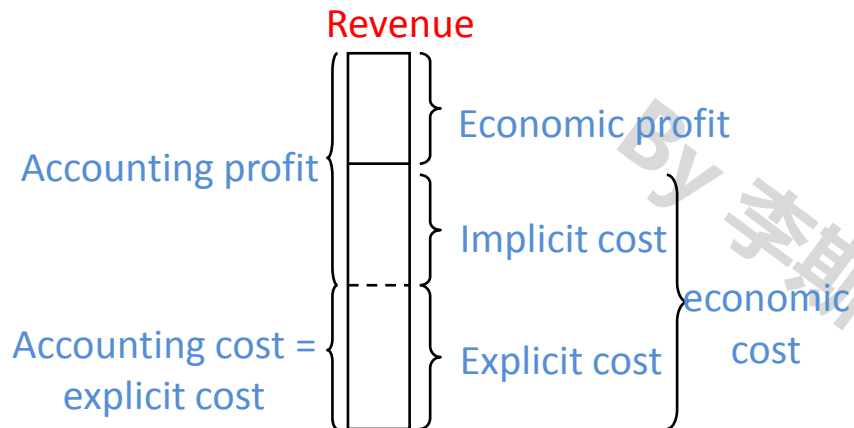
1. Giffen goods are inferior goods, while Veblen goods certainly are not.
2. The existence of Giffen goods is theoretically supported by our rules of consumer choice, while the existence of Veblen goods is not.

Reading 15

Demand and Supply: the firm

Profit、Cost、Product 概念对比

Accounting Profit, Economic Profit and Normal Profit



Relationship	Economic Profit	Firm value
Accounting profit > Normal profit	> 0	Positive effect
Accounting profit = Normal profit	= 0	No effect
Accounting profit < Normal profit	< 0 (economic loss)	Negative effect

Economic rent

- ✓ 定义: a payment to a factor of production above its opportunity cost
- ✓ = producer surplus

TR, AR & MR ★

公式	$TR = P \cdot Q$, $AR = TR/Q$ $MR = d(TR)/d(Q) = P \cdot (1 - \frac{1}{e_p})$
特点	Under imperfect competition: <ul style="list-style-type: none"> • AR & MR will decline as Q increase. • AR is not equal to MR for any quantities greater than zero. • The decrease in MR is more than the decrease in price or AR. • Total revenue (TR) is maximized when $MR=0$.
	Under perfect competition: <ul style="list-style-type: none"> • horizontal demand curve $\rightarrow AR=MR=P$

TP, AP & MP ★

公式	$TP=Q$, $AP=TP/L$, $MP=d(TP)/d(L)$
特点	<ul style="list-style-type: none"> • Law of diminishing returns (边际产量递减) • $MP > AP$, AP上升; $MP < AP$, AP下降; $MP=AP$, AP最大值 • $MP=0$, TP最大

TC, AC & MC



Long term: 一切都可变，没有FC和VC之分

Short term: some resources are fixed, such as buildings, technology and equipment

公式

Marginal cost = change in total cost (或variable cost) / change in output

Average cost = total cost / output

特点

- MC declines initially, then increases.
- MC intersects AVC and ATC at their minimum points.
- Minimum point on the ATC curve represents the lowest cost per unit, but it is not necessarily the profit-maximizing point.
- The MC curve above AVC is the firm's short-run supply curve in a perfectly competitive market.

Product & Cost关系 ★

- ✓ AP (MP)最大值时，AC (MC)取最小值；
- ✓ AP (MP)上升时，AC (MC)下降

重要结论：公司短期&长期的生产决策



Revenue-Cost Relationship	Short-Run Decision	Long-Run Decision
$TR \geq TC$	Stay in market	Stay in market
$TR < TFC + TVC$ but $TR > TVC$	Stay in market	Exit market
$TR < TVC$	Shut down production to zero	Exit market

Shutdown point	$TR = TVC; AR = AVC$
Profit maximization	$MR = MC$
Breakeven point	$TR = TC; AR = ATC$

Conclusion for pure competition:

- ✓ If $P > ATC$, the firm can realize economic profit
- ✓ Economic loss occurs if $P < ATC$.
- ✓ In the short run, economic profit is maximized when marginal revenue=marginal cost =price ($MR=MC=P$)

其他几组概念

Economies of scale: downward sloping segment of long-run average total cost curve

Diseconomies of scale: upward sloping segment of this long-run average total cost curve

Long-Run Industry Supply Curves ★

Increasing-cost industry Long-Run Supply curve 向上倾斜

Decreasing-cost industry Long-Run Supply curve 向下倾斜

Constant-cost industry Long-Run Supply curve 水平

Profit-maximizing Utilization of an Input

Cost minimization	$\frac{MP_1}{P_1} = \frac{MP_2}{P_2} = \dots = \frac{MP_N}{P_N}$	如果 $MP_1/P_1 < MP_2/P_2$, 应该增加对于第2个 factor 的应用
Profit maximization	$\frac{MRP_1}{P_1} = \frac{MRP_2}{P_2} = \dots = \frac{MRP_N}{P_N} = 1$	如果 $MRP_1/P_1 > 1$, 应该增加这个风险因子的应用

Reading 16

Firm and Market Structure

各种市场结构基本特征



Type	Number of firms	Degree of difference of products	Difficulty to enter or leave	Shape of Demand Curve	对价格的控制
Perfect competition	many	No difference	Very easy	Horizontal	Price taker
Monopolistic competition	many	Some difference	Relatively easy	Downward 更平坦 highly elastic	Price searcher
Oligopoly	More than one, but not many	Little or no difference	difficult	Downward 相对更陡峭 less elastic	Price searcher
Pure monopoly	single	Sole product, nearly no substitute	No way	Downward 陡峭	Price searcher

Perfect Competition



Short-run equilibrium	<ul style="list-style-type: none">• $P=MR=MC$• $DWL=0$, 市场实现最优配置
long-run equilibrium	<ul style="list-style-type: none">• 短期有profit, 会有新厂商进入; 短期有loss, 会有原厂商退出• 长期均衡: $profit=0 \rightarrow P=MR=MC=ATC$ (breakeven point)

Monopolistic Competition

特点	<ul style="list-style-type: none">• Downward-sloping demand curves• The curves are highly elastic
Short-run output decision	<ul style="list-style-type: none">• $MR=MC$• Price is slightly higher than under perfect competition.
Long-run output decision	No economic profit $\rightarrow P=ATC$ (因为厂商可以自由进出)
Product development and marketing★	<ul style="list-style-type: none">• Innovation and product development• Advertising• Brand names

Oligopoly

Kinked demand curve	<p>特点：提价→弹性大；降价→弹性小</p> <p>缺点：it is incomplete because what determines the market price (where the kink is located) is outside the scope of the model.</p>
Nash Equilibrium★★	Prisoners' Dilemma: Confess/confess
Collusion	<ul style="list-style-type: none">• 合谋之后，市场就变成monopoly firm• 合谋更容易成功的情况：<ul style="list-style-type: none">✓ fewer firms、more similar product、more similar cost structure、relatively small and frequent purchases、more severe penalty for cheating、less actual or potential competition
Dominant firm model	<ul style="list-style-type: none">• Dominant firm has a significantly large market share<ul style="list-style-type: none">✓ greater scale & lower cost structure• market price is essentially determined by the dominant firm

Monopoly ★

目标	<ul style="list-style-type: none"> The monopolists want to maximize profits, not price. $MR=MC$
Price Discrimination	条件: <ul style="list-style-type: none"> Downward sloping demand curve (price searcher) At least two identifiable groups of customers Prevent arbitrage
	结论: Price discrimination reduces this inefficiency by increasing output toward the quantity where marginal benefit equals marginal cost, and the deadweight loss is smaller.
Government Regulation	<ul style="list-style-type: none"> Average cost pricing: $P=ATC \rightarrow$ more common form Marginal cost pricing: $P=MC \rightarrow$ incur a loss

Concentration Measures

名称	计算	Limitation ★
N-Firm Concentration Ratio	largest N firms 市场份额相加	Relatively insensitive to mergers of two firms with large market shares.
HHI	sum of the squares of the market shares of all firm	Both of our simple concentration measures is that barriers to entry are not considered in either case.



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Reading 17

Aggregate Output, Prices and Economic Growth

GDP

定义

market value、final goods and services、produced、in a country、a time period.

Include

- Purchases of newly produced goods and services
- Final goods and services
- Goods and services provided by government
- The value of owner-occupied housing

Exclude

- The sale or resale of goods produce in precious period
- Transfer payments made by the government
- In-process goods
- The value of labor not sold
- By-products of production (e.g. environmental damage)
- Underground economy
- Barter transaction (e.g. neighbors exchanging services)
- Illegal trade

GDP Deflator



$$\text{GDP deflator for year } t = \frac{\sum_{i=1}^N P_{i,t} Q_{i,t}}{\sum_{i=1}^N P_{i,t-5} Q_{i,t}} \times 100 = \frac{\text{nominal GDP in year } t}{\text{value of year } t \text{ output at year } t-5 \text{ prices}} \times 100$$

计算方法★★

Value-of-Final-Output Method (以最终产品的价格计算OUTPUT)

Sum-of-Value-Added Method (以原材料和中间附加值累和计算OUTPUT)

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

- Consumption: $C = a + b(Y - Tax) \rightarrow b = MPC$
- Investment: r 上升 \rightarrow Investment下降

Income Approach:

- $GDP = \text{national income} + \text{capital consumption allowance} + \text{statistical discrepancy}$
- $\text{national income} = \text{compensation of employees (wages and benefits)}$
 - + corporate and government enterprise profits before taxes
 - + interest income
 - + unincorporated business net income (business owners' incomes)
 - + rent
 - + indirect business taxes less subsidies*
- $\text{Personal income} = \text{national income} - \text{indirect business tax} - \text{corporate income tax} - \text{undistributed corporate profit} + \text{Transfer payment}$
- $\text{Personal disposable income} = \text{personal income} - \text{personal taxes}$

$$S = I + (G - T) + (X - M) \text{★★}$$

只要出现S、I、政府赤字、净出口相关的题目，都是用这个公式来解决

IS & LM

IS Curves

定义	$Y = C + I + G + (X - M)$; C和Y有关, I和r有关 →Y和r之间的关系(inverse relationship)
影响因素★	Y增加→IS向右shift (扩张的财政政策) (X - M)增加→IS向右shift

LM Curves

定义	$(MS/P) = MD$; 名义MS是由央行决定的常数, 假设P不变; MD和Y、r有关 →Y和r之间的关系(positive relationship)
影响因素★	MS增加→LM向右shift (扩张的货币政策) P下降→LM向右shift
MD★★★	对流动性(现金)的需求 <ul style="list-style-type: none"> Transaction demand (和Y正相关) Precautionary demand (和Y正相关) Speculative demand (和r负相关)
MS★★★	<ul style="list-style-type: none"> M1: currency in the hands of the public; travelers checks; demand deposits; and other deposits against which checks can be written. M2: includes M1, plus savings accounts, time deposits of under \$100,000, and balances in retail money market mutual funds.

AD & AS

AD Curves

定义	IS & LM交点→equilibrium levels of prices and real income (real GDP)
形状	Downward sloping: higher price levels →reduce real wealth, increase real interest rates →reduce the quantity of domestic output demanded.
影响因素 ★★	$GDP = C + I + G + NX$ →使后面这四项增加的: AD curve向右shift <ul style="list-style-type: none">• Increase in consumers' wealth (C increases): 国民财富增加• Consumer expectations of future income (C increases)• Business expectations (I increases)• High capacity utilization (I increases)• Expansionary monetary policy (C and I increase)• Expansionary fiscal policy (C increases for tax cut, G increases for spending increase)• Exchange rates (本币贬值, net X increases)• Global economic growth (net X increases)

AD Curves

- The VSRAS curve is perfectly elastic.
- The LRAS curve is perfectly inelastic.
 - ✓ In the long run, wages and other input prices change proportionally to the price level, so the price level has no long-run effect on aggregate supply.
- The SRAS curve is upward sloping.

Impact of Factors Shifting AS★★

An Increase in	Shifts SRAS	Shifts LRAS	Reason
Supply of labor	Rightward	Rightward	Increases resource base
Supply of natural resources	Rightward	Rightward	Increases resource base
Supply of human capital	Rightward	Rightward	Increases resource base
Supply of physical capital	Rightward	Rightward	Increases resource base
Productivity and technology	Rightward	Rightward	Improves efficiency of inputs
Nominal wages	Leftward	No impact	Increases labor cost
Input prices (e.g., energy)	Leftward	No impact	Increases cost of production
Expectation of future prices	Rightward	No impact	Anticipation of higher costs and/or perception of improved pricing power
Business taxes	Leftward	No impact	Increases cost of production
Subsidy	Rightward	No impact	Lowers cost of production
Exchange rate	Rightward	No impact	Lowers cost of production

- Recessionary Gap: AD向左shift
- Inflationary Gap: AD向右shift
- Stagflation: high unemployment and increasing inflation, AS向左shift

Economic Growth ★

- growth in potential GDP = growth in technology + W_L (growth in labor) + W_C (growth in capital)
 - W_L and W_C are labor's percentage share of national income and capital's percentage share of national income.
- Total factor productivity is a multiplier that quantifies the amount of output growth that cannot be explained by the increases in labor and capital.

Reading 18

Business cycles

经济周期的表现

指标	表现 (记住重要结论)
Inventory	<ul style="list-style-type: none"> When an expansion is approaching its peak, increase in the inventory-sales ratio above its normal level. when a contraction reaches its trough, inventory-sales ratio to decrease below its normal level.
Utilization of labor and physical capital	<ul style="list-style-type: none"> Utilization of labor levels: 公司一般不会裁员，可能一开始只是增加或减少工作小时数； Utilization of physical capital levels: During contractions, reduce their physical capacity by spending less on maintenance or by delaying the replacement of equipment

Trough	Expansion	Peak	Contraction/recession
<ul style="list-style-type: none"> GDP growth rate从负到正 High unemployment rate, increasing use of overtime and temporary workers. Spending增加 Moderate or decreasing inflation rate 	<ul style="list-style-type: none"> GDP growth rate increases Unemployment rate快速下降 Investment increases Inflation rate may increase Imports increase 	<ul style="list-style-type: none"> GDP growth rate decreases Unemployment rate decreases but hiring slows 消费投资增长放缓 Inflation rate increases 	<ul style="list-style-type: none"> GDP growth rate is negative Hours worked decrease, unemployment rate increases 消费投资下降 Inflation rate decreases with a lag Imports decrease

Theories of the Business Cycle

	经济周期的原因	对政府政策的主张
Neoclassical school	changes in technology	<ul style="list-style-type: none">• economy has a strong tendency toward full-employment equilibrium• 政府不要干预经济
Keynesian school ★	<ul style="list-style-type: none">• shifts in aggregate demand due to changes in expectations• wages are “downward sticky”	directly increase aggregate demand through monetary policy or through fiscal policy
New Keynesian school	其他价格也有“downward sticky”	同 “Keynesian school”
Monetarist school ★	<ul style="list-style-type: none">• by inappropriate decreases in the money supply• Quantity Theory of Money: $MV=PY$<ul style="list-style-type: none">• velocity and the real output change slowly• money neutrality	policy of steady and predictable increases in the money supply
Austrian school	government intervention in the economy	政府不要干预经济
New Classical school Real business cycle theory (RBC) ★	changes in technology and external shocks, as opposed to monetary variables	policymakers should not try to counteract business cycles

Unemployment

计算	名词
$\text{unemployment rate} = \frac{\text{number of unemployed}}{\text{labor force}} \times 100$	Labor force Unemployed
$\text{labor force participation rate} = \frac{\text{labor force}}{\text{Working - age population}} \times 100$	<ul style="list-style-type: none">• Frictionally unemployed• Structural unemployed• Cyclical unemployed Underemployed

Inflation

名词: Hyperinflation\Deflation\Disinflation

CPI计算方法



	经济周期的原因	对政府政策的主张
方法	计算	缺点
Laspeyres index	用基期的消费篮子	<ul style="list-style-type: none">• New goods• Quality changes• Substitution → biased upward
Paasche index	用现在的消费篮子	Substitution → biased downward

Inflation原因



Cost-Push Inflation	<ul style="list-style-type: none">• An increase in money wage rates• An increase in the money prices of raw materials
Demand-pull inflation	<ul style="list-style-type: none">• Increase in the quantity of money• Increase in government purchases• Increase in exports

NAIRU特点 (非加速通胀下的失业率):

- unemployment at which inflationary pressures are stable
- vary from one economy to another and over time in a single economy

Economic Indicators ★

Leading	<ol style="list-style-type: none">1. Average weekly hours, manufacturing2. Average weekly initial claims for unemployment insurance3. Manufacturers' new orders for consumer goods and materials4. Institute for supply management new orders index5. Manufacturers' new orders for non-defense capital goods6. Building permits for new private housing units7. S&P 500 Stock Index (stock price, 500 common stocks)8. Leading credit index (M2)9. Interest rate spread between 10-year treasury yields and overnight borrowing rates10. Index of Consumer Expectations, University of Michigan
Coincident	<ol style="list-style-type: none">1. Employees on non-agricultural payrolls2. Aggregate real personal income (less transfer payments)3. Industrial Production Index4. Manufacturing and trade sales
Lagging	<ol style="list-style-type: none">1. Average Duration of Unemployment2. Inventory—sales ratio3. Change in unit labor costs4. Average bank prime lending rate5. Commercial and industrial loans outstanding6. Ratio of consumer installment debt to income7. Change in consumer price index for services

Reading 19

Monetary and Fiscal Policy

Monetary policy

1. How Do the Banks Create Money ? ★★

$$\text{money multiplier} = \frac{1}{\text{reserve requirement}}$$

2. Fisher effect: ★★

$$R_{\text{Nom}} = R_{\text{Real}} + E[I]$$

Real rates are relatively stable, and changes in interest rates are driven by changes in expected inflation.
This is consistent with money neutrality.

Tools	<p>Policy rate: lower rate → Expansionary</p> <p>Reserve requirements: higher Reserve requirement → Contractionary</p> <p>Open market operations: Central bank buy securities → Expansionary</p>
Expansionary or Contractionary?	<p>Neutral interest rate = real trend rate of economic growth + inflation target ★★</p> <ul style="list-style-type: none"> Policy rate > Neutral rate: contractionary Policy rate < Neutral rate: expansionary
<p>Limitation</p> <p>★★</p>	<ol style="list-style-type: none"> Long-term rates may not rise and fall with short-term rates because of the effect of monetary policy changes on expected inflation. liquidity trap: Increasing growth of the money supply will not decrease short-term rates <ul style="list-style-type: none"> Deflation is more difficult for central banks to reverse 此时，可以选择 quantitative easing

Fiscal Policy

Tools	<ol style="list-style-type: none"> 1. Spending Tools: Transfer payments、Current spending、Capital spending 2. Revenue Tool: Direct taxes、Indirect taxes <ul style="list-style-type: none"> • Indirect taxes: Quick implementation、lower additional costs
Fiscal multiplier ★★	$\text{Fiscal multiplier} = \frac{1}{1 - \text{MPC}(1-t)} = \frac{1}{1 - b \times (1-t)}$ <p>计算</p>
Expansionary or Contractionary?	<p>Discretionary fiscal policy:</p> <ul style="list-style-type: none"> • Recessions → Expansionary • Inflationary economic booms → Contractionary
Limitation ★★	<ul style="list-style-type: none"> • Ricardian Equivalence: Increases in the current deficit mean greater taxes in the future. • Debt ratio: Aggregate debt to GDP 较高, 长期财政赤字 • Crowding-out effect: Expansionary fiscal policy may crowd out private investment • Time lag: Recognition lag、Law-making lag、Impact lag

Reading 20

International trade and capital flows

Absolute and Comparative Advantage ★ ★

Comparative Advantage:

1. 产生原因: opportunity costs differ
2. 判断如何国际贸易? 计算

	A	B
Wheat	10(个产品)	9
Computer	5	3

A: $1L = 10W = 5C \rightarrow 1W$ 的机会成本是 $1/2$ 个C

B: $1L = 9W = 3C \rightarrow 1W$ 的机会成本是 $1/3$ 个C

B生产Wheat的机会成本更小, 所以B生产wheat,
A生产computer, 然后进行贸易

1. Ricardian Model:

- ✓ Differences in **labor productivity** (reflecting underlying differences in **technology**) are the source of comparative advantage.

2. Heckscher—Ohlin Model:

- ✓ **Capital and labor** are variable factors of production.
- ✓ The price of the relatively less scarce (more available) factor of production in each country will increase.

国家间的合作

Free trade areas: 两国之间没有任何贸易限制

+ common set of trade restrictions with non-members \rightarrow Customs union

+ labor and capital goods可以自由流动 \rightarrow Common market

+ common institutions and economic policy \rightarrow Economic union

+ adopt a single currency \rightarrow Monetary union

Effects of Trade Restrictions

	Tariff	Import Quota	Export Subsidy	VER
Impact on	Importing country	Importing country	Exporting country	Importing country
Price	Increases	Increases	Increases	Increases
Domestic consumption	Decreases	Decreases	Decreases	Decreases
Domestic production	Increases	Increases	Increases	Increases
Trade	Imports decrease	Imports decrease	Exports increase	Imports decrease
Government revenue	Increases	Mixed (基于quota是谁定的)	Falls (government spending rises)	No change (rent to foreigners)
National welfare	Decreases in Small country	Decreases in small country	Decreases (a larger decline in large country)	Decreases
	increase in large country	increase in large country		

Balance of Payments (BOP)

Account	内容
Current account ★★	1. Merchandise and services 2. Income receipts 3. Unilateral transfers
Capital account	non-produced , non-financial assets的转移、sales、purchase
Financial account	investment flows
注意：有资金流入是“+”，资金流出是“-”	

国际组织 ★

IMF	<ul style="list-style-type: none">• Supports exchange rate stability and an open system of international payments• Lends foreign exchange to members when needed
World Bank	Help developing countries fight poverty and enhance environmentally sound economic growth
WTO	Global rules of trade between nations

Reading 21

Currency Exchange Rate

$$X:Y = 1.8 \rightarrow 1.8 X/Y$$

汇率基本名词和计算 ★★

1. Real exchange rate:

$$\text{FX real(USD/EUR)} = \frac{\text{FX nominal (USD)/CPI(USD)}}{1 \text{ (EUR)/CPI(EUR)}}$$

1. 1.8 X/Y: Y → base currency; X → price currency
2. Cross Rate: 0.60 USD/AUD, 10.70 MXN/USD → 乘法(消掉USD): $0.60 * 10.70 = 6.42 \text{ MXN/AUD}$
3. Forward discount or premium: $F - S$

Interest Rate Parity (IRP) ★★

1. 计算F或者forward premium:

$$\frac{F}{S} = \frac{1 + r_X}{1 + r_Y}$$

$$\frac{F - S}{S} = \frac{1 + r_X}{1 + r_Y} - 1 = \frac{r_X - r_Y}{1 + r_Y} \approx r_X - r_Y$$

2. Arbitrage:

$$\text{If } \frac{F}{S} > \frac{1 + r_X}{1 + r_Y}, \frac{F}{S} \cdot (1 + r_Y) > 1 + r_X \rightarrow \text{borrow X currency, the profit will be } \frac{F}{S} \cdot (1 + r_Y) - (1 + r_X)$$

$$\text{If } \frac{F}{S} < \frac{1 + r_X}{1 + r_Y}, \frac{S}{F} \cdot (1 + r_X) > 1 + r_Y \rightarrow \text{borrow Y currency, the profit will be } \frac{S}{F} \cdot (1 + r_X) - (1 + r_Y)$$

Changes in exchange rate affect the balance of trade ★

Elasticity Approach	<ul style="list-style-type: none">import or export demand is elastic → 贬值可以改善 trade deficit弹性大的商品: primarily luxury goods, goods with close substitutes, and goods that represent a large proportion of overall spending
J-Curve	时滞作用: Currency depreciation may worsen a trade deficit in the short run
Absorption Approach	$BT = Y - E$; $E = C + I + G$ <ul style="list-style-type: none">less than full employment: Depreciation → trade balance improvedfull employment: Depreciation → returning the economy to its previous state and balance of trade

Exchange Rate Regimes

1. Countries That Do Not Have Their Own Currency
2. Countries That Have Their Own Currency
 - A currency board arrangement
 - conventional fixed peg arrangement
 - Target zone
 - Crawling peg
 - Management of exchange rates within crawling bands
 - Managed floating exchange rates
 - Independently floating



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