
2020 年 06 月 CFA 一级百题预测

1. ETHICS AND PROFESSIONAL STANDARDS
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3 Economics

3.1. Demand and Supply

3.1.1. 重要知识点

3.1.1.1. Demand and supply function

➤ The demand function

- The quantity demanded of good X depends on (is a function of) the price of good X, consumers' income, and the price of good Y:

$$Q_x^d = f(P_x, I, P_y, \dots)$$

■ Example

- ◆ Demand function: $Q_x^d = 84.5 - 6.39P_x + 0.25I - 2P_y$

- ◆ Assuming $I=50$, $P_y=20$, inverse demand function:

$$P_x = 8.92 - 0.156Q_x^d$$

➤ The supply function

- The quantity supply of good X depends on the selling price of X, the costs of production depending on technology, and other inputs, such as labor etc.

$$Q_x^s = f(P_x, W, P_y, \dots)$$

■ Example

- ◆ supply function: $Q_x^s = -300 + 1.5P_{tables} - 8W - 0.2P_{wood}$

- ◆ Assuming $W=12$, $P_{wood}=150$, inverse demand function:

$$P_{tables} = 284 + 0.667Q_{tables}$$

➤ Law of demand and supply:

- Demand decreases as the price increases
- Supply increases as the price increases

3.1.1.2. Shift or move along

- Price 变化使得 move along 需求/供给曲线，其他因素导致 Shift

3.1.1.3. Market equilibrium

- When have a market supply and market demand curve for a good, we can solve for the price at which the quantity supplied equals the quantity demanded. We define this as the equilibrium price and the equilibrium quantity.

基础题

Q-1. A college student's monthly demand for pizza is given by the equation:

$Q_{\text{pizza}}^D = 15 - 0.75P_{\text{pizza}} + 0.01I - 0.25P_{\text{cola}}$	
Where	Q_{pizza}^D is the number of pizzas ordered per month
	P_{pizza} is the price of a pizza
	I is her monthly food budget
	P_{cola} is the price of cola per bottle

The student's current monthly food budget is \$750, the price of a pizza is \$8, and the price of a bottle of cola is \$2.50/bottle. If the student's monthly food budget were to increase to \$1000, the slope of her demand curve for pizza would be closest to:

- A. -2.42.
- B. -1.33.
- C. -0.75.

Q-2. Given the function

$$Q_{xd} = 5.7 - 1.3P_x + 0.03I - 0.03P_y$$

where

Q_{xd} = the quantity demanded of good X

P_x = the price per unit of good X

I = consumers' income

P_y = the price per unit of good Y

the most likely cause of a shift in the demand curve is a change in:

- A. P_y .
- B. Q_{xd}
- C. P_x .

Q-3. The demand and supply functions for a leading smartphone are furnished below:

$$Q_{sp}^d = 2,000 - 25P_{sp} + 3I; \quad Q_{sp}^s = -400 + 75P_{sp} - 100W;$$

Q_{sp}^d = Quantity demanded in number of units

Q_{sp}^s = Quantity supplied in number of units

P_{sp} = Price per smart phone in \$

I = Household income in \$ per year

W = Wage rate in \$ per hour

Currently, the firm has priced the smartphone at \$350 per unit. If the wage is \$12 per hour and the household income is \$12,500 per year, the smartphone's equilibrium price is closest to:

- A. \$250.
- B. \$411.
- C. \$451.

Q-4. Assume the following:

An individual consumer's demand for tea	$Q_t^d = 1,600 - 30P_t + 0.2I + 120P_c$
Seller's supply of tea	$Q_t^s = -500 + 300P_t - 100W$

Legend and Initial Values	Assumed Values
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Q_t^d	Quantity of tea	
P_t	Price of tea per 100 grams	
I	Household income	£2200
W	Hourly wage rate for labor	
P_c	Price of coffee per 100 grams	£23
	Equilibrium price of tea	£28

If the household income increases by 2.4% while P_c and W do not change, the new equilibrium quantity will be closest to:

- A. 3,999.
- B. 3,966.
- C. 3,970.

Q-5. A producer's supply function is given by the equation

$$Q = -55 + 26P_s + 1.3P_a$$

Where Q is the quantity of steel supplied by the market, P_s is per unit price of steel, and P_a is the per unit price of aluminum. If the unit price of aluminum is 10, the slope of the supply curve is closest to:

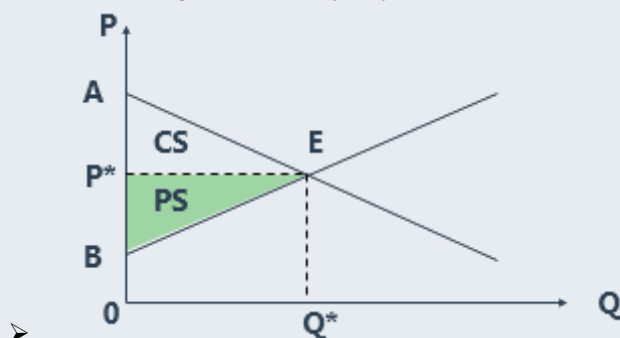
- A. 0.04.
- B. 1.30.
- C. 26.00.

3.2. Consumer Surplus

3.2.1. 重要知识点

3.2.1.1. Consumer surplus

- Consumer surplus: the difference between the total value to consumers of the units of a good that they buy and the total amount they must pay for those units



3.2.2. 基础题

Q-6. The monthly demand curve for playing tennis at a particular club is given by the following equation: $P_{\text{Tennis Match}} = 9 - 0.20 \times Q_{\text{Tennis Match}}$. The club currently charges members \$4.00 to play a match but is considering adding a membership fee. If the club continues to charge the same per play charge, the most that it will be able to charge as a membership fee is closest to:

- A. \$62.50.
- B. \$162.50.
- C. \$40.00.

3.3. Elasticity

3.3.1. 重要知识点

3.3.1.1. Price elasticity of demand

➤ 公式

$$\text{price elasticity} = \frac{\text{percent change in quantity demand}}{\text{percent change in price}} = \frac{\% \Delta Q_d^x}{\% \Delta P_x}$$

■ 点弹性

$$e_d^x = \frac{\Delta Q_x}{\Delta P_x} \times \frac{P_x}{Q_x}$$

➤ Price elasticity 分类

- When elasticity < 1, the demand is said to be inelastic;



- When elasticity > 1, the demand is said to be elastic;



- When elasticity = 1, demand is said to be unit elastic, or unitary elastic.

- Perfectly elastic

- ◆ Demand curve is horizontal at some given price. It implies that even a minute price increase will reduce demand to zero.



■ Perfectly inelastic

- ◆ Demand curve is vertical, quantity demanded is not sensitive to price at all.



➤ The relation between price elasticity of demand and total revenue

■ When demand is elastic

- ◆ Price and total revenue move in opposite directions.
- ◆ The price decrease, but the sales volume increase in a higher percentage, total revenue increase.

■ When demand is inelastic

- ◆ Price and total revenue move in the same direction.
- ◆ The price decrease, and the sales volume increase in a lower percentage, total revenue decrease.

■ When demand is unit elastic

- ◆ The total revenue is maximized.

➤ Factors that influence the elasticity of demand

- **Availability of substitutes**
- **The relative amount of income spent on the good**
- **Time period since the price change**

3.3.1.2. Cross elasticity

➤ 公式

$$\begin{aligned} \text{cross elasticity} &= \frac{\text{percent change in quantity demand}}{\text{percent change in price of substitute or complement}} \\ &= \frac{\% \Delta Q_d^x}{\% \Delta P_Y} \end{aligned}$$

■ 点弹性

$$e_c = \frac{\Delta Q_X / Q_X}{\Delta P_Y / P_Y} = \frac{\Delta Q_X}{\Delta P_Y} \times \frac{P_Y}{Q_X}$$

➤ 分类

- If two goods, X and Y, has **positive** cross-price elasticity, the goods X and Y are referred to as **substitutes**. Example: pen and pencil.
- If two goods, X and Y, has **negative** cross-price elasticity, the goods X and Y are referred to as **complements**. Example: pencil and eraser.

3.3.1.3. Income elasticity of demand

➤ 公式

$$\text{income elasticity} = \frac{\text{percent change in quantity demand}}{\text{percent change in income}} = \frac{\% \Delta Q_d^x}{\% \Delta I}$$

■ 点弹性

$$e_I = \frac{\Delta Q_X}{\Delta I} \times \frac{I}{Q_X}$$

➤ 分类

- **Positive income elasticity** means that as income rises, the demand for the good also rises. Goods with positive income elasticity are called "**normal goods**".
 - ◆ **Luxuries**: high positive elasticity (elasticity > 1).
 - ◆ **Necessities**: normal but have lower elasticity (elasticity between 0~1).
- **Negative income elasticity** means that as income rises, the demand for the good decreases. Goods with negative income elasticity are called "**inferior goods**".
Rice, potatoes, or less expensive cuts of meat.

3.3.2. 基础题

Q-7. The price of a good falls from \$15 to \$13. Given this decline in price, the quantity demanded of the good rises from 100 units to 120 units. The own-price elasticity of demand for the good is closest to:

- A. -1.27.
- B. -0.67.
- C. -1.50.

Q-8. The demand for membership at a local health club is determined by the following equation:

$$Q_{hm}^d = 400 - 5P_{hm}$$

where Q_{hm}^d is the number of health club members and P_{hm} is the price of membership. If the price of health club membership is \$35, the price elasticity of

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demand is closest to:

- A. -0.778.
- B. -0.500.
- C. -0.438.

Q-9. The elasticity of demand for a good is most likely greater when:

- A. the good is a necessity.
- B. the adjustment to a price change takes a longer time.
- C. a lesser proportion of income is spent on the good.

Q-10. If the cross-price elasticity between two goods is positive, the two goods are classified as:

- A. Normal.
- B. Substitutes.
- C. Complements.

Q-11. In the demand function $Q_x^d = 4.5 - 0.8P_x + 0.2I - 0.06P_y$ where Q_x^d represents the quantity demanded of a good X, P_x is the price per unit of good X, I is consumers' income, and P_y is the price per unit of good Y, X, and Y are best described as:

- A. inferior goods.
- B. substitutes.
- C. complements.

Q-12. The market demand function for item X is a function of its price, household income, and the price of item Y.

Own-price elasticity of demand for X	-0.7
Income elasticity of demand for X	1.6
Cross-price elasticity of demand for X with respect to the price of Y	0.5

Given the above elasticity coefficients for the two items, which of the following statement is most accurate?

- A. X and Y are substitutes
- B. Demand for X is elastic
- C. Item X is an inferior good

Q-13. The market demand function for four-year private universities is given by the equation

$$Q_{pr}^d = 84 - 3.1 P_{pr} + 0.8I + 0.9P_{pu}$$

Where Q_{pr}^d is the number of applicants to private universities per year in thousands, P_{pr}

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is the average price of private universities (in thousands of USD), I is the household monthly income (in thousands of USD), and P_{pu} is the average price of public (government-supported). Assume that P_{pr} is equal to 38, I is equal to 100, and P_{pu} is equal to 18.

The cross-price elasticity of demand for private universities with respect to the price of public universities is closest to:

- A. 0.3.
- B. 3.1.
- C. 3.9.

Q-14. If the quantity demanded of pears falls by 4% when the price of apples decreases by 3%, then apples and pears are best described as:

- A. inferior goods.
- B. substitutes.
- C. complements.

Q-15. If a price cut of a product increases total revenue, demand is best described as:

- A. inelastic.
- B. unit elastic.
- C. elastic.

Q-16. For a particular product produced by a firm, the quantity at which demand is unit elastic is most likely the quantity that maximizes:

- A. total profit from the product but not total revenue from the product.
- B. total revenue from the product but not total profit from the product.
- C. both total profit from the product and total revenue from the product.

3.4. Substitution/Income Effect and Giffen/Veblen Goods

3.4.1. 重要知识点

3.4.1.1. Substitution effect

➤ 定义

- When the price of Good X decreases, the relative price of Good X against other goods will decrease. Consumer equilibrium moves along the indifference curve, which leads to an increase in the demand of Good X.

➤ The **substitution effect** for goods will always be positive

3.4.1.2. Income effect

➤ 定义

- When the price of Good X decreases, consumer's real purchasing power will change. Real income increases, and budget constraint moves, which lead to a change in the demand of Good X.
- The **income effect** for goods depends on the nature of the goods
 - For **normal good**, its income effect is positive, and the income effect reinforces the substitution effect, both leading to a negatively sloped demand curve.
 - For **inferior good**, its income effect is negative, and the income effect and the substitution effect work in opposite directions.
- Income effect & substitution effect 共同作用决定需求量变化

3.4.1.3. When decrease in the price of Good X

- Normal goods
 - The substitution effect is positive, and the income effect is also positive.
 - Total effect is positive.
 - When the price of Good X decrease, consumption of Good X will increase.
- Inferior goods
 - The substitution effect is positive, and the income effect is negative but smaller than the substitution effect
 - Total effect is still positive.
 - When the price of Good X decrease, consumption of Good X will increase.
- Giffen goods
 - The substitution effect is positive, and the income effect is negative and larger than the substitution effect
 - Total effect is negative.
 - When the price of Good X decrease, consumption of Good X will decrease

3.4.1.4. Giffen goods and Veblen goods

- **Giffen goods (吉芬商品)**
 - Income effect (inferior goods) > Substitution effect
 - Demand curve has positive slope
- **Veblen goods (韦伯伦商品, conspicuous goods)**
 - Price is used by the consumer to signal the status in the society
 - Have a positively sloped demand curve (e.g. luxury automobiles)
 - But when price increases, the slope may be negative.
 - 没有经济学理论解释
- **Two important distinctions between Giffen goods and Veblen goods.**
 - First, Giffen goods are inferior goods (negative income effect), while Veblen goods certainly are not.

- Second, the existence of Giffen goods is theoretically supported by the rules of consumer choice, while the existence of Veblen goods is not.

3.4.2. 基础题

- Q-17.** In the case of a normal good with a decrease in own price, which of the following statements is most likely true?
- A. Both the substitution and income effects lead to an increase in the quantity purchased
 - B. The substitution effect leads to an increase in the quantity purchased, while the income effect has no impact
 - C. The substitution effect leads to an increase in the quantity purchased, while the income effect leads to a decrease
- Q-18.** Which of the following statements with respect to Giffen and Veblen goods is least accurate?
- A. Giffen goods are “inferior,” whereas Veblen goods are “high-status” goods.
 - B. The highly negative income effect overpowers the substitution effect for both types of goods.
 - C. Both types of goods demonstrate the possibility of a positively sloping demand curve.
- Q-19.** Which of the following is least likely to be a characteristic of a Giffen good?
- A. Its income effect is negative
 - B. Its demand curve slopes upward
 - C. Its substitution effect is negative

3.5. Economic Profit, Accounting Profit, and Normal Profit.

3.5.1. 重要知识点

3.5.1.1. Accounting profit

- Accounting profit is the difference between total revenue and total accounting cost.
- Accounting profit = total revenue – total accounting (explicit) cost

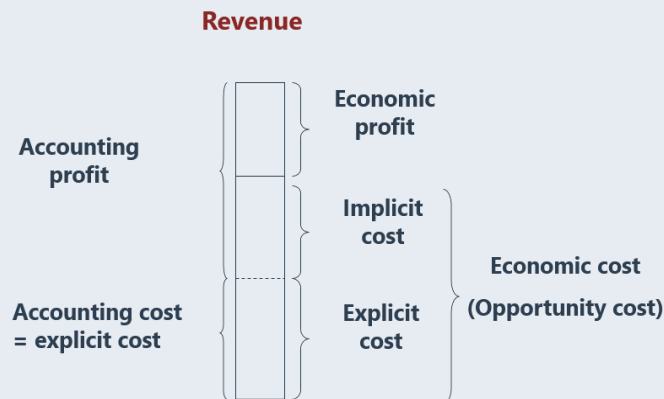
3.5.1.2. Economic profit

- Economic profit is also referred to as abnormal profit.
- Economic profit = accounting profit - implicit costs
 - Implicit costs are the opportunity costs of resources supplied to the firm by its owners.
 - For private firms, the implicit costs include
 - ◆ The opportunity cost of owner-supplied capital

- ◆ The opportunity cost of the time
- ◆ Entrepreneurial ability of the firm's owners.
- For public firms, implicit costs are only the opportunity cost of equity owners' investment.
- Economic profit = total revenue – total economic costs

3.5.1.3. Normal profit

- Normal profit is the accounting profit that makes economic profit zero.
- Accounting profit = economic profit + normal profit



3.5.2. 基础题

Q-20. The following information applies to a start-up company solely owned by an entrepreneur.

	Value
total units produced	3500
Average revenue	\$1100
Average variable cost	\$720
Total fixed cost	\$200,000
Total investment	\$1,500,000
Required rate of return	12%
Opportunity cost of owner's labor	\$130,000

The company's economic profit is closest to:

- A. \$820,000.
- B. \$784,250.
- C. \$978,000.

Q-21. Normal profit is best described as:

- A. zero economic profit.
- B. total revenue minus all explicit costs.

C. the sum of accounting profit plus economic profit.

3.6. Product: Total Product, Average Product, Marginal Product

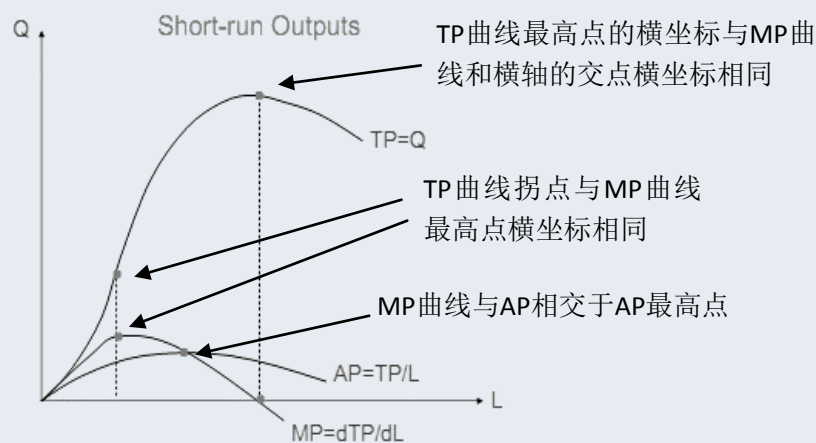
3.6.1. 重要知识点

3.6.1.1. TP, AP, MP

- **Total product(TP)** is sum of the output from all inputs during a time period; usually illustrated as the total output (Q) using labor quantity (L)
- **Average product(AP)** is total product divided by the quantity of a given input; measured as total product divided by the number of worker hours used at that output level (Q/L)
- **Marginal product(MP)** is the amount of additional output resulting from using one more unit of input assuming other inputs are fixed; measured by taking the difference in total product and dividing by the change in the quantity of labor ($\Delta Q/\Delta L$).

3.6.1.2. The law of diminishing return: at some point, as one more resource is added to the production process, holding the quantity of other inputs constant, the output continues to increase, but at a decreasing rate.

3.6.1.3. Marginal product of capital: increase in output from using one additional unit of capital, holding the quantity of labor constant.



3.6.1.4. TP:total product, 随投入增高, 而增高, 到达一定高度, 减少。(如上图)

- MP: Marginal product, 先增加后减少
- MP 是 TP 的斜率, MP=0 时候 TP 最大
- MP 大于 AP 时, AP 上升; MP 小于 AP 时, AP 下降; MP 等于 AP 时, AP 最大

3.6.2. 基础题

Q-22. If adding one additional unit of labor results in a positive but declining marginal product of labor, then total product most likely is:

- A. constant.
- B. decreasing.
- C. increasing at a decreasing rate.

3.7. Revenue: TR, AR, and MR

3.7.1. 重要知识点

3.7.1.1. Total revenue=price×output

Marginal revenue=change in total revenue / change in output

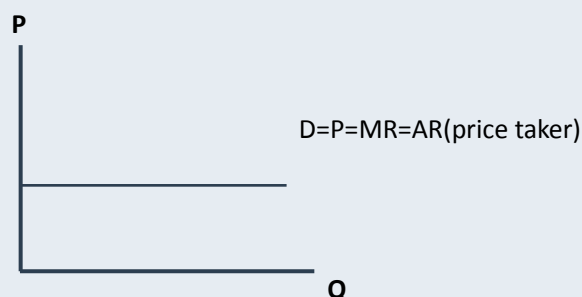
Average revenue=total revenue / output

3.7.1.2. Under imperfect competition

- Under conditions of imperfect competition, price is a variable under the firm's control, and therefore price is a function of quantity: $P = f(Q)$, and $TR = f(Q) \times Q$.
- Firm that faces a negatively sloped demand curve must lower its price to sell an additional unit, so its MR is less than price (P).
- Average revenue (AR) and marginal revenue (MR) will decline as quantity of goods sold increase. AR is not equal to MR for any quantities greater than zero.
Total revenue (TR) is maximized when $MR=0$.
- The relationship between MR, P, and price elasticity of demand: **$MR=P[1-1/E_p]$**

3.7.1.3. Under perfect competition

- $D=P=MR=AR$
- $TR= P \times Q$



3.7.2. 基础题

Q-23. The marginal revenue per unit sold for a firm doing business under conditions of perfect competition will most likely be:

- A. equal to average revenue.
- B. less than average revenue.

C. greater than average revenue.

3.8. Cost

3.8.1. 重要知识点

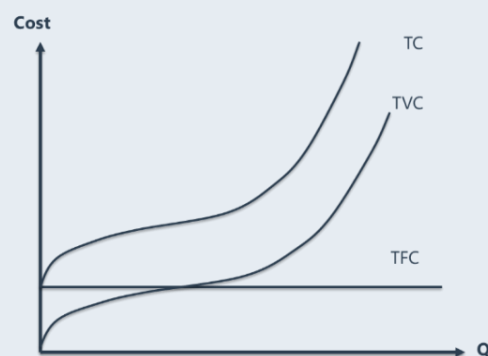
3.8.1.1. Short-run and long-run decision time frames 的理解

- **Short run:** a time period for which quantities of some resources are fixed, which is a constraint on a firm's ability to increase production. (labor and raw materials are variable while plant size, capital equipment, and technology are constant)
- **Long run:** a time period for which a firm can adjust its input quantities, production methods, and plant size. (所有因素都可变)
- Labor and raw materials are variable in the short run.
- Plant size, capital equipment, technology are constant in the short run.

3.8.1.2. TC, TVC, TFC

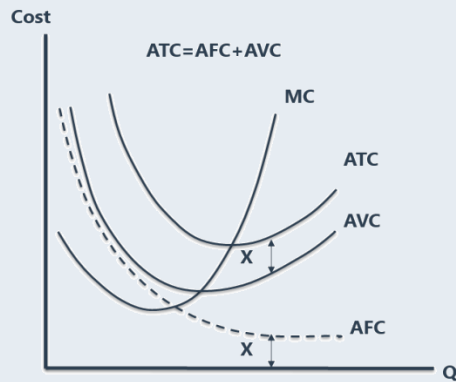
- TC (total cost) = total fixed cost + total variable cost

Term	Calculation
Total cost	The sum of all costs (fixed or variable, explicit and implicit) of producing a specific level of output.
Total fixed cost	The sum of all expenses that do not change as the level of production varies output over the period of analysis.
Total variable cost	The sum of all variable expenses; TVC rises with increased production and falls with decreased production.



3.8.1.3. MC, ATC, AVC, MC

- Marginal cost = change in total cost / change in output
- Average fixed cost = total fixed cost / output
- Average variable cost = total variable cost / output
- Average cost = total cost / output = AFC + AVC



- AFC slopes downward.
As output quantity increases, AFC declines because TFCs are spread over a larger number of units.
- Both ATC and AVC take on a bowl-shaped pattern in which each curve initially declines, reaches a minimum average cost output level, and then increases after that point.
 - The vertical distance between the ATC and AVC curves is equal to AFC.
 - Minimum point on the ATC curve represents the lowest cost per unit, but it is not necessarily the profit-maximizing point.
- The MC curve intersects both the ATC and the AVC at their minimum points.
 - TFC do not change with the change of output, so MC reflects the change of total variable cost only.
 - With the increase of output, MC declines initially, then increases.
- When MC is less than AVC, AVC will be decreasing. When MC is greater than AVC, AVC will be increasing.

3.8.2. 基础题

Q-24. Regarding a company's production function, both labor costs and capital costs are best described as:

- A. fixed in the long run.
- B. variable in the long run.
- C. variable in the short run.

3.9. Profit Maximization , Breakeven Point and Shutdown Point

3.9.1. 重要知识点

3.9.1.1. Profit maximization occurs when

- The difference between total revenue (TR) and total costs (TC) is the greatest;
- Marginal revenue (MR) equals marginal cost (MC); (MR=MC)

- The revenue value of the output from the last unit of input employed equals the cost of employing that input unit.

3.9.1.2. Breakevenpoint and shutdown point

- Under perfect competition

Revenue-Cost Relationship	Short-Run Decision	Long-Run Decision
$AR > ATC$	Stay in market	Stay in market
$AR = ATC$	Breakeven point	
$AVC < AR < ATC$	Stay in market	Exit market
$AR = AVC$	Shutdown point	
$AR < AVC$	Shut down production to zero	Exit market

- Under imperfect competition

Revenue-Cost Relationship	Short-Run Decision	Long-Run Decision
$TR > TC$	Stay in market	Stay in market
$TR = TC$	Breakeven point	
$TVC < TR < TC$	Stay in market	Exit market
$TR = TVC$	Shutdown point	
$TR < TVC$	Shut down production to zero	Exit market

3.9.2. 基础题

- Q-25.** With its existing production facilities, a monopolist firm can produce up to 100 units. It faces the following demand and cost schedules:

Output (units)	Price (\$/unit)	Total Costs (\$)
0	3,100	500
20	2,700	11,500
40	2,500	30,500
60	2,300	65,500
80	2,100	100,500
100	2,000	160,500

The optimal output level for this producer (in units) is closest to:

- A. 100.
- B. 20.
- C. 60.

- Q-26.** The following data apply to a firm operating in perfect competition.

Quantity	Total Revenue	Total Cost
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21	\$210	\$138
22	\$220	\$145
23	\$230	\$154
24	\$240	\$165

The firm's profit maximizing output (in units) is most likely:

- A. 21.
- B. in excess of 24.
- C. 23.

Q-27. A firm in a perfectly competitive environment has its total costs equal to total revenue and marginal costs greater than marginal revenue. Given this, which of the following strategies is most appropriate? The firm should:

- A. shut down in the short run and exit in the long run.
- B. increase its level of production to enter profit territory.
- C. decrease its level of production to enter profit territory.

Q-28. Three firms operate under perfect competition, producing 900 units of the same product but using different production technologies. Each company's cost structure is indicated in the table:

Company	X	Y	Z
Total Variable Costs	\$2,700	\$3,600	\$4,500
Total Fixed Costs	2,700	1,800	900
Total Costs	\$5,400	\$5,400	\$5,400

Which of the following statements is most accurate? If the unit selling price is:

- A. \$6.00, all firms should exit the market in the long run.
- B. \$4.50, all firms should continue to operate in the short run, but exit the market in the long run if these conditions are expected to persist.
- C. \$3.00, Firm X should continue to operate in the short run, but Firms Y and Z should shut down production.

Q-29. The following equations have been developed for a company:

Demand curve	$P = 120 - 3 \times Q$
Total revenue curve	$TR = 120 \times Q - 3 \times Q^2$
Marginal revenue curve	$MR = 120 - 6 \times Q$
Total cost curve	$TC = Q^3 - 12.5 \times Q^2 + 70 \times Q + 120$

Average cost curve	$AC = Q^2 - 12.5 \times Q + 70 + 120/Q$
Marginal cost curve	$MC = 3 \times Q^2 - 25 \times Q + 70$
P: price per unit Q: cost per unit	

The profit maximizing output for this firm (in units) is closest to:

- A. 9.
- B. 8.
- C. 10.

Q-30. In the short run, a firm operating in a perfectly competitive market will most likely avoid shutdown if it is able to earn sufficient revenue to cover which of the following costs?

- A. Marginal
- B. Fixed
- C. Variable

Q-31. A profit maximization is least likely to occur when:

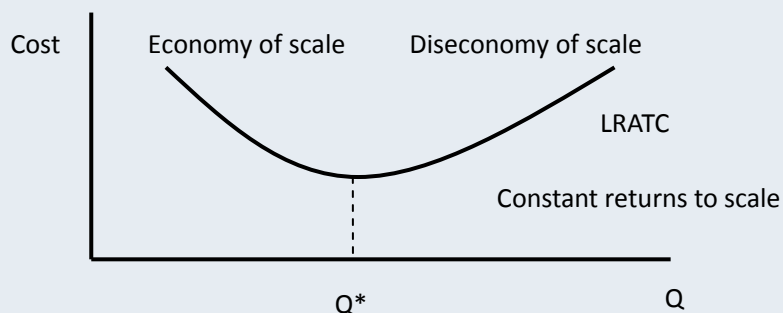
- A. average total cost is minimized.
- B. marginal revenue equals marginal cost.
- C. the difference between total revenue and total cost is maximized.

3.10. Economies of Scale and Diseconomies of Scale

3.10.1. 重要知识点

3.10.1.1. Economies of scale and diseconomies of scale

- **Economies of scale** occurs if cost per unit of production falls as input increases, and the slope of LRAC is negative.
- **Diseconomies of scale** occurs if cost per unit rises as input increases, and the slope of LRAC is positive.



- In the long run, everything is variable and the long run cost curves are known as planning curves.

3.10.2. 基础题

Q-32. Which of the following factors is most likely to lead to economies of scale?

- A. Supply constraints.
- B. Duplication of product lines.
- C. Specialization by workers.

Q-33. In the short run, an increase in output at low levels of production will most likely cause:

- A. an increase in the marginal cost due to the rising total fixed cost.
- B. an increase in the marginal cost due to the law of diminishing returns.
- C. a decrease in the marginal cost due to economies from greater specialization.

3.11. Market Structure

3.11.1. 重要知识点

3.11.1.1. Market structure

Type	Number of firms	Degree of difference of products	Difficulty to enter or leave	Pricing Power of Firm	The example in our life
Perfect competition	Many	No difference	Very easy	None	Some agricultural products
Monopolistic competition	Many	Some difference	Relatively easy	Some	Some retail products
Oligopoly	More than one, but not many	Little or no difference	Difficult	Some or Considerable	Steel, automobile, oil
Pure monopoly	Single	Sole product, nearly no substitute	No way	Considerable	Public sectors

3.11.2. 基础题

Q-34. Which characteristic is a firm least likely to exhibit when it operates in a market with a downward sloping demand curve, many competitors, some pricing power and zero economic profits in the long run?

- A. No pricing power
- B. Differentiated product

C. Low barriers to entry

Q-35. A firm in the market environment characterized by monopolistic competition will most likely:

- A. continue to experience economic profit in the long run.
- B. have a well-defined supply function reflecting its marginal and average costs.
- C. have many competitors, each of which follows its own product differentiation strategy.

3.12. Perfect Competition

3.12.1. 重要知识点

3.12.1.1. 完全竞争市场特征

- All the firms in the market produce identical products.
- pure competition is **price-taker**, all others are **price-searcher**
- There is a large number of independent firms.
- Each seller is small relative to the size of the total market.
- There is no barrier to entry or exit.

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3.12.1.2. Individual firm's short-run equilibrium under perfect competition

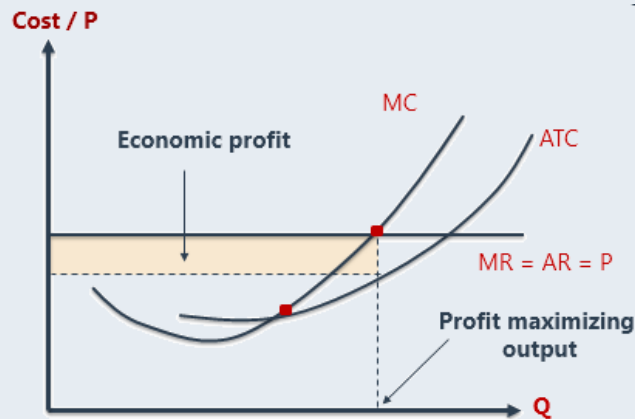
- Profit max: $MR=MC$
- $MR=P=AR$ (price taker)
- Individual firm's demand schedule is **perfectly elastic (horizontal)**.
- Market demand curve is negative slope

3.12.1.3. Individual firm's long-run equilibrium under perfect competition

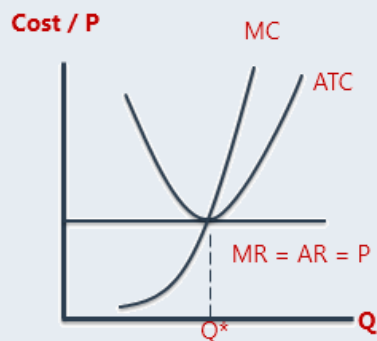
- In the long-run, economic profit will attract other entrepreneurs to the market
➔ more output, price will decrease.
- The long-run, firms operate at the point where $MC = \text{minimum ATC}$
- So firms operate at the point $P=MR=MC=ATC$, no firms earn excess profit.

3.12.1.4. Short-run and long-run equilibrium in perfect competition

- **短期内:** $MR=MC, MR=P=AR=D$ (price taker)



- 长期内：完全竞争厂商如果能够获得超额收益，会吸引更多厂商进入，因此产出上升，厂商最终只能获得 normal profit



3.12.2. 基础题

Q-36. Which of the following best describes the elasticity of demand in a perfectly competitive market?

- A. The firm elasticity is zero and the market elasticity is infinite
- B. The firm elasticity is infinite and the market elasticity is zero
- C. The firm elasticity is infinite and the market elasticity is some finite number

3.13. Monopolistic Competition

3.13.1. 重要知识点

3.13.1.1. Monopolistic competition 特点

- There are a **large number of independent** sellers
 - Firms have small market shares in the market;
- Each firm tries to make its products look different
 - The products offered by each seller are close substitutes for the products offered by other firms, but they are differentiated.
- Firms have some pricing power;
- Entry into and exit from the market are possible with fairly low costs.;

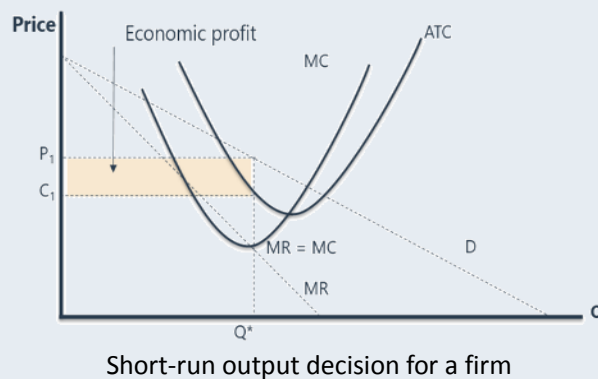
- Firms in monopolistic competition has highly elasticity because each competing products are close substitutes.
- Firms have a downward-sloping demand curves

3.13.1.2. Product development and marketing

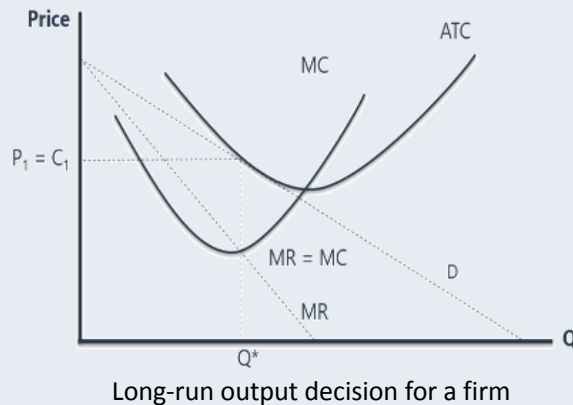
- Innovation and product development
 - In short term, the demand is less elastic than demand in perfect competition firms, companies can earn economic profit;
 - In long term, close substitutes and imitations makes the market perform more like a perfect competition market with no economic profit left eventually;
 - To earn continuous economic profit, continuous innovation is needed.
- Brandrecognition
 - Firms can increase its economic profit by increasing its brand recognitions.
- Advertising
 - Significant costs for monopolistic competition;
 - Tell customers about its uniqueness;
 - Advertising costs increase the ATC for monopolistic competition firms;
 - Increasing outputs;
 - If advertising increases the output of firms, it can reduce the ATC by decreasing the average fixed cost for firms.

3.13.1.3. Short-run and long-run equilibrium in monopolistic competition

- 短期内: $MR=MC$, 可以 economic profit 或者 economic loss;



- 长期：无经济利润或损失（因为无进出壁垒），均衡条件是 $MC=MR$ & $P=ATC$ ，但不是在 ATC 的最低点



3.13.2. 基础题

Q-37. Successful advertising and product differentiation are most likely to have a positive impact on the economic profits of a producer under:

- A. monopolistic competition.
- B. monopoly.
- C. perfect competition.

Q-38. Under monopolistic competition, a firm that introduces a new and differentiated product is least likely to:

- A. increase its price.
- B. make an economic profit.
- C. face a demand that is more elastic.

3.14. Oligopoly Market

3.14.1. 重要知识点

3.14.1.1. 特点

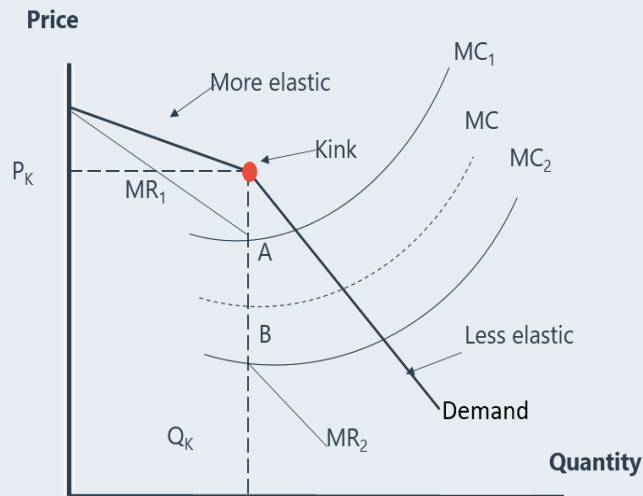
- Small number of sellers
- Interdependence among competitors
- Large economies of scale
- Significant barriers to entry
- Either similar or differentiated products

3.14.1.2. Four traditional oligopoly models

➤ The kinked demand curve model

- **Assumption:** each firm believes that if it raises its price, others will not follow, but if it cuts its price, other firms will cut theirs

- Between range A and B, the optimum Q is constant, can't determine price



➤ **Cournot duopoly model**

- Only two firms exist in the market (e.g. A duopoly).
- The marginal costs of production are **identical and constant**.
- Each firm determines its profit-maximizing production level by assuming that the other firm's output will not change.
- In equilibrium, neither firm has an incentive to change output, given the other firm's production level. Each firm attempts to maximize its own profits under the assumption that the other firm will continue producing the same level of output in the future.

➤ **Nash equilibrium model**

- Nash equilibrium is present when two or more participants in a non-cooperative game have no incentive to deviate from their respective equilibrium strategies after they have considered and anticipated their opponent's rational choices or strategies.

- Prisoner's dilemma

	Prisoner Y is silent	Prisoner Y confesses
Prisoner X is silent	X gets 5 months Y gets 5 months	X gets 8 years Y goes free
Prisoner X confesses	X goes free Y gets 8 years	X gets 3 years Y gets 3 years

- The duopoly result from the Nash equilibrium. Assume there are two firms in the market, ArcCo and BatCo. ArcCo and BatCo can charge high prices or low prices for the product.

	BatCo low price	BatCo high price
ArcCo low price	ArcCo 50 BatCo 70	ArcCo 80 BatCo 0
ArcCo high price	ArcCo 300 BatCo 350	ArcCo 500 BatCo 300

➤ **Stackelberg dominant firm model**

- A single firm has a significantly large market share: greater scale & lower cost structure
- Market price is essentially determined by the dominant firm
- The other competitive firms take this market price as given.

3.14.2. 基础题

Q-39. Aquarius, Inc. is the dominant company and the price leader in its market. One of the other companies in the market attempts to gain market share by undercutting the price set by Aquarius. The market share of Aquarius will most likely:

- A. increase.
- B. decrease.
- C. stay the same

Q-40. SigmaSoft and ThetaTech are the dominant makers of computer system software. The market has two components: a large mass-market component in which demand is price sensitive, and a smaller performance-oriented component in which demand is much less price sensitive. SigmaSoft's product is considered to be technically superior. Each company can choose one of two strategies:

- Open architecture (Open): Mass market focus allowing other software vendors to develop products for its platform.
- Proprietary (Prop): Allow only its own software applications to run on its platform.

Depending upon the strategy each company selects, their profits would

	ThetaTech - Prop	ThetaTech - Open
SigmaSoft-Prop	(S 400, T 600)	(S 650,T 700)
SigmaSoft-Open	(S 800, T 300)	(S 600, T 400)

The Nash equilibrium for these companies is:

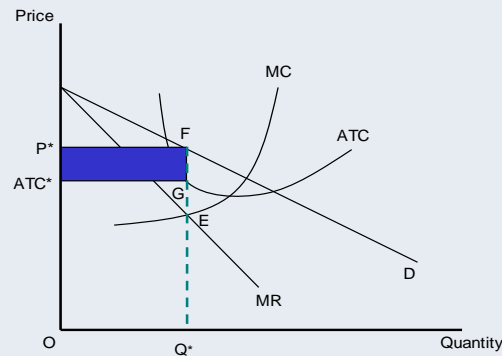
- A. proprietary for SigmaSoft and proprietary for ThetaTech.
- B. open architecture for SigmaSoft and proprietary for ThetaTech.
- C. proprietary for SigmaSoft and open architecture for ThetaTech.

3.15. Monopoly

3.15.1. 重要知识点

3.15.1.1. 特征

- Single seller, high barriers(legal barriers and natural barriers)



- Monopolists are price searchers (face downwards sloping demand curves) and have imperfect information about demand, so they must experiment with different prices (search) to find the profit maximizing price/quantity with always be in the elastic range of the demand curve for the firm's product.
- 短期和长期的均衡条件都是 $MR=MC$ (利润最大化的条件), 相比于完全竞争市场, 垄断市场的产量较少, 价格较高。

- $$MR = P \times (1 - \frac{1}{\epsilon_p})$$

3.15.1.2. Price discrimination

- Price discrimination can help monopolist to earn higher profit, and it can be applicable if the products cannot be re-sold among customers.
 - First-degree price discrimination, where a monopolist is able to charge each customer the highest price the customer is willing to pay.
 - In second-degree price discrimination, the monopolist offers a menu of quantity-based pricing options designed to induce customers to self-select based on how highly they value the product.
 - ◆ producers can use not just quantity but also the quality to charge more to customers that value the product highly.
 - Third-degree price discrimination happens when customers are segregated by demographic or other traits.

3.15.1.3. Government regulation

- Average cost pricing is the more common form of regulation at the point where $ATC=D$. This will
 - Increase output of monopolists to the demand, and decrease price.
 - Ensure the monopolist a normal profit with less social welfare reduced.

- **Marginal cost pricing** forces the monopolists to reduce its price to marginal cost. This will
 - Increase output and reduce price, the pricing method is similar in competitive market.
 - The monopolist suffer a loss for the price is below ATC.
 - Government subsidy is needed in order to provide the firm with a normal profit.

3.15.2. 基础题

Q-41. 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.

Q-42. An electricity producer charges lower rates to its high-volume customers and higher rates to its low-volume customers. The degree of price discrimination is best described as:

- A. second.
- B. first.
- C. third.

3.16. Market Concentration

3.16.1. 重要知识点

3.16.1.1. The N-firm concentration ratio

- The sum of the market share for largest N firms in a market in percentage aspect..
- Advantage: simple to compute, and easy to be understood
- Disadvantage: does not directly quantify market power

3.16.1.2. The Herfindahl-Hirschman index (HHI)

- Summing the **squares of the market shares** for each company in an industry.
- If there are M firms in the industry with equal market shares, then the HHI equals $(1/M)$. For example, an HHI of 0.2 would be analogous to having the market shared equally by 5 firms.

3.16.1.3. Limitation of measures

- The N-firm concentration ratio is insensitive to the merger of two firms with large market shares;
- Either case do not consider the barrier to entry for the industry. If the barriers to

entry are low, even a firm is with high market share, it may not have too much pricing power.

3.16.2. 基础题

Q-43. Six companies in an industry have the following market shares:

Company	A	B	C	D	E	F
Market Share (%)	32	23	16	15	8	6

If Companies D and F merge into a new Company, G, the industry's three-company concentration ratio would be closest to:

- A. 72%.
- B. 76%.
- C. 71%.

Q-44. Which of the following statements concerning the Herfindahl–Hirschman Index (HHI) is most accurate?

- A. The HHI is a useful measure of potential barriers to entry.
- B. The HHI is usually unaffected by mergers among the top market incumbents.
- C. An HHI of 0.05 would be analogous to having the market shared equally by 20 firms.

3.17. Basic Concepts of GDP

3.17.1. 重要知识点

3.17.1.1. GDP and GNP

- **GDP measures** the market value of all final goods and services produced by factors of production located within a country/economy during a given period of time, generally a year or a quarter.
- **GNP measures** the market value of all final goods and services produced by factors of production supplied by residents of a country, regardless of whether such production takes place within the country or outside of the country.
- **Difference**
 - GDP includes, and GNP excludes, the production of goods and services or income to capital owned by foreigners within that country.
 - GNP includes, and GDP excludes, the production of goods and services or income to capital owned by its citizens outside of the country.
- GDP is more closely related to economic activity within a country and so to its employment and growth.

3.17.1.2. Nominal and real GDP and GDP deflator

$$\text{Nominal GDP}_t = \sum_{i=1}^N P_t Q_t$$

$$\text{Real GDP}_t = \sum_{i=1}^N P_{B,i} Q_{t,i}$$

where,

$P_{t,i}$ = price of good i in year t

$P_{B,i}$ = price of good i in the base year

$Q_{t,i}$ = quantity of good i in year t

$$(\text{GDP deflator})_t = \frac{\sum_{i=1}^N P_{t,i} Q_{t,i}}{\sum_{i=1}^N P_{B,i} Q_{t,i}} \times 100$$

3.17.1.3. GDP 的计算

- **Expenditure approach:** $\text{GDP} = C + I + G + (X - M)$
- **Income approach:** $\text{GDP} = \text{GDI (Gross domestic income)} = \text{net domestic income} + \text{consumption of fixed capital (CFC)} + \text{statistical discrepancy}$
 Gross domestic income
 = Compensation of employees
 + Gross operating surplus
 + Gross mixed income
 + Taxes less subsidies on production
 + Taxes less subsidies on products and imports
- **Personal income:** a broad measure of household income and measures the ability of consumers to make purchases
- **Household disposable income** = personal income - personal taxes

3.17.2. 基础题

Q-45. The most relevant measure of income that economists use in determining household decisions to save and spend is personal:

- A. earned income.
- B. disposable income.
- C. taxable income.

Q-46. For a given economy and a given period of time, GDP measures the:

I.	aggregate income earned by all households, all companies, and the government.
II.	total income earned by all of the country's citizens, firms, and the government.
III.	total market value produced of resalable and final goods and services.

The most appropriate description of what is measured by GDP is given by:

- A. I only.
- B. I and III.
- C. I and II.

Q-47. Which of the following statements is most accurate concerning the sum-of-value-added method used to determine GDP based on expenditures?

- A. The method shows a larger GDP value compared with the value-of-final-output method.
- B. The method is based on the prices consumers pay for the products and services.
- C. The method involves summing the income created at each stage of the production and distribution process.

Q-48. A country with which of the following characteristics is least likely to face long-term GDP growth challenges?

- A. A country with large natural resources
- B. A country with high labor quality
- C. A country with innovations in production processes

Q-49. Assume that an economy is composed of two products, X and Y, with the following details:

Product	Quantity Produced in 2012	Quantity Produced in 2013	Product Unit Prices in 2012	Product Unit Prices in 2013
X	351.0	352.0	13.3	13.8
Y	179.0	182.5	unknown	11.1

Assuming 2012 is the base year for measuring GDP and the GDP deflator for the economy in 2013 is 102.4, the unit price of Y in 2012 is closest to:

- A. 11.2.
- B. 11.5.
- C. 10.8.

3.18. Saving and Investment

3.18.1. 重要知识点

3.18.1.1. 储蓄、投资、财政平衡与贸易平衡之间的关系

- 总支出: $C + I + G + (X - M) \rightarrow \textcircled{1}$ 总收入: $C + S + T \rightarrow \textcircled{2}$
- $\textcircled{1} = \textcircled{2} \rightarrow S - I = (G - T) + (X - M)$
 - 储蓄大于投资说明出现财政赤字或者贸易顺差
- $(G - T) = (S - I) - (X - M)$ 财政平衡

- Domestic private saving (S) is used or absorbed in one of three ways:
 - ◆ Investment spending (I);
 - ◆ Financing government deficits ($G - T$);
 - ◆ Building up financial claims against overseas economies [trade surplus ($X - M > 0$)].
- $(X - M) = (S - I) - (G - T)$ 贸易平衡
 - A government deficit ($G - T > 0$) must be financed by
 - ◆ Some combination of a trade deficit ($X - M < 0$) or
 - ◆ An excess of private saving over private investment ($S - I > 0$).

3.18.2. 基础题

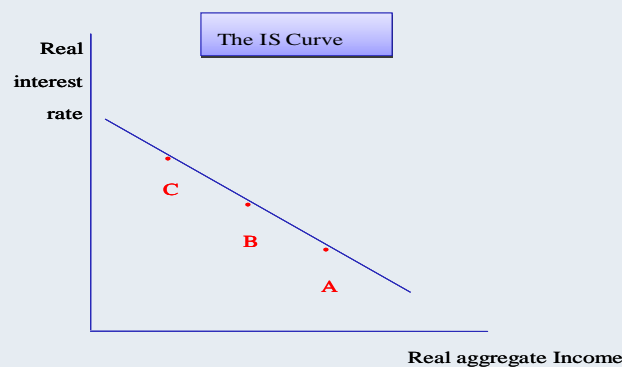
Q-50. Equality between aggregate expenditure and aggregate output implies that the private saving must equal:

- A. Investment + government's fiscal deficit + Net exports
- B. Investment – government's fiscal deficit + Net exports
- C. Investment – government's fiscal deficit – Net exports

3.19. IS & LM Curve and AD & AS curve

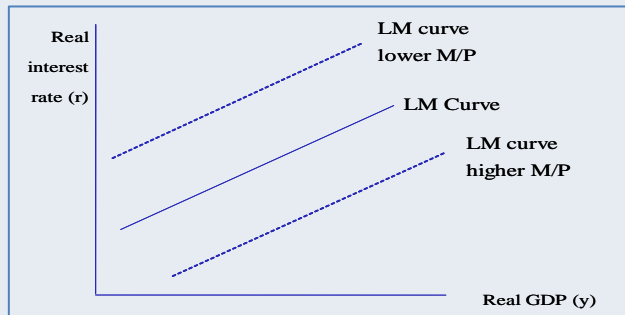
3.19.1. 重要知识点

3.19.1.1. IS curves



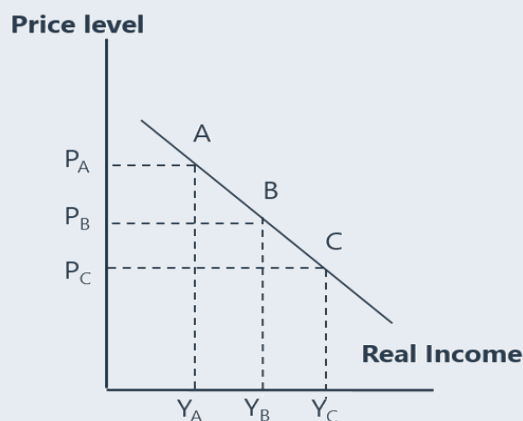
- Equilibrium in goods market: $S = I + (G - T) + (X - M)$
- Movement along: changes in r
- Shift
 - $G \uparrow, X \uparrow$, expansionary, rightward
 - $T \uparrow, M \uparrow$, contractionary, leftward

3.19.1.2. LM curves



- Equilibrium in capital market: $M_D = M_S$, $M_S/P = L_1 + L_2$
- In equilibrium, there is a positive relationship between real income and the real interest rate for a given level of the real money supply
- Movement along: changes in r
- Shift
 - $M \uparrow$ or $P \downarrow$, $M/P \uparrow$, expansionary, rightward
 - $M \downarrow$ or $P \uparrow$, $M/P \downarrow$, contractionary, leftward

3.19.1.3. Aggregatedemand curve

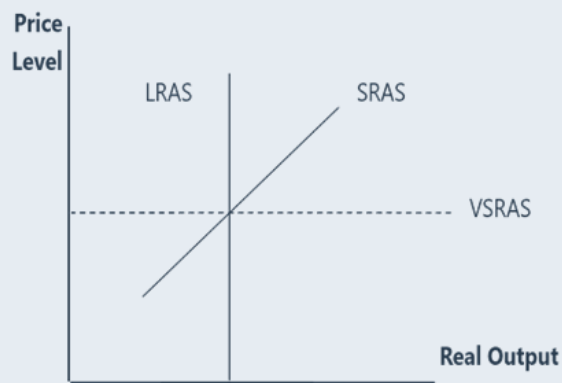


- **Movement**
 - A change in the price level is represented as a movement along the AD curve
- **Shifts in AD curve**
 - Household wealth;
 - Consumer and business expectations;
 - Capacity utilization;
 - Monetary policy;
 - Growth in global economy;
 - Exchange rate;
 - Fiscal policy.

3.19.1.4. Aggregatesupply curve

- **分类**
 - The VSRAS curve: Horizontal, perfectly elastic.

- Long-run aggregate supply (LRAS) curve
 - ◆ Vertical, perfectly inelastic, since
 - ◇ **wages and input** prices change proportionately with price level over the long run.
 - ◇ Thus **price level** has no impact on **aggregate supply**.
- The SRAS curve
 - ◆ Upward sloping, because of inflexibility of wages and other input costs in the short run.
 - ◆ $P \uparrow$ nominal wage constant \rightarrow real wage $\downarrow \rightarrow$ cost $\downarrow \rightarrow$ production \uparrow
hiring more worker \rightarrow employment $\uparrow \rightarrow Y \uparrow$
 - ◆ $P \downarrow$ nominal wage constant \rightarrow real wage $\uparrow \rightarrow$ cost $\uparrow \rightarrow$ production \downarrow
hiring less worker \rightarrow employment $\downarrow \rightarrow Y \downarrow$

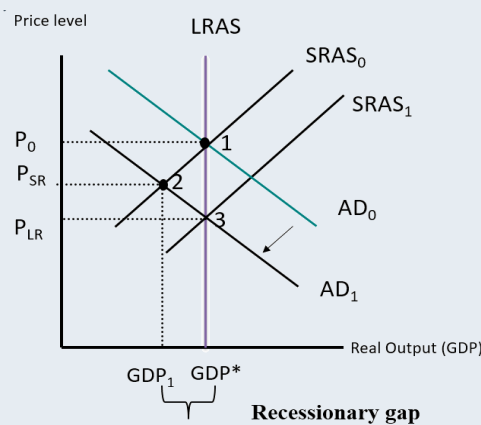


➤ **Shifts in the aggregate supply curve**

Impact of Factors Shifting Aggregate Supply			
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

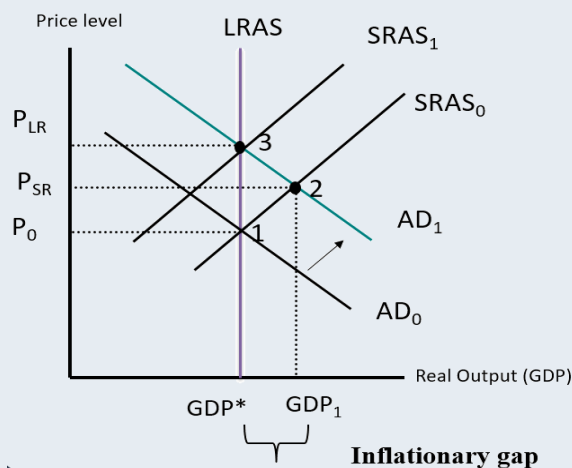
Expectation of future prices	Rightward	No impact	Anticipation of higher costs and/or perception of improved pricing power
Business taxes	Leftward	No impact	Increases cost of production
Subsidy	Rightward	No impact	Lowers cost of production
Exchange rate (影响进口原料成本)	Rightward	No impact	Lowers cost of production

3.19.1.5. Recessionary



➤ $AD \downarrow \rightarrow \text{Output} \downarrow \text{ price} \downarrow$

3.19.1.6. Inflationary



➤ $AD \uparrow \rightarrow \text{Output} \uparrow \text{ price} \uparrow$

3.19.1.7. Stagflation

➤ **Phenomenon:**

- Aggregate supply decrease, price increases, GDP decreases, inflation increases, unemployment rate increases.

➤ **Reasons:**

- Increase in input costs decreases aggregate supply.

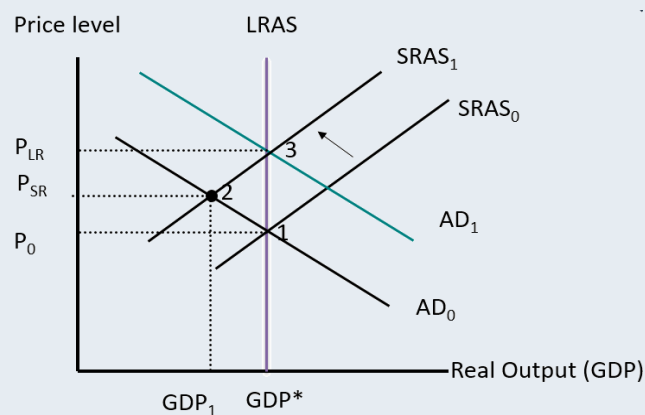
➤ **Solutions:**

■ Auto mechanism: (need long time to adjust)

- ◆ Decrease in GDP, increase in unemployment
- ◆ Decrease in wages, decrease in input prices, SRAS shifts right, and reach full employment.

■ Government interference: (dilemma)

- ◆ Expansionary fiscal policy: Increase G , decrease T , resulting in more inflation
- ◆ Contractionary monetary policy: decrease required reserves, decrease money supply, or increase interest rate, resulting in further recession.



3.19.1.8. Effect of combined changes in AS and AD

Change in AS	Change in AD	Effect on real GDP	Effect on aggregate price level
Increase	Increase	Increase	Indeterminate
Decrease	Decrease	Decrease	Indeterminate
Increase	Decrease	Indeterminate	Decrease
Decrease	Increase	Indeterminate	Increase

3.19.2. 基础题

Q-51. An increase in government spending would shift the:

- A. IS curve and the LM curve.
- B. IS curve and the aggregate demand curve.
- C. LM curve and the aggregate demand curve.

Q-52. In regard to the aggregate demand curve and an increase in one of its associated factors, which of the following relationships is least accurate (Exchange rate is foreign currency per unit of domestic currency)?

Increase in factor	Shifts the AD curve	Reason
--------------------	---------------------	--------

A.	Stock prices	Rightward	Lower investment
B.	Consumer confidence	Rightward	Higher consumption
C.	Exchange rate	Leftward	Lower exports and higher imports

Q-53. Which of the following will most likely cause the short-run aggregate supply (SRAS) curve to shift to the right?

- A. Increase in business taxes
- B. Increase in the supply of human capital
- C. Increase in nominal wages

Q-54. The most likely outcome when both aggregate supply and aggregate demand increase is:

- A. a rise in inflation.
- B. higher employment.
- C. an increase in nominal GDP

Q-55. Given stable aggregate supply, which of the following changes in aggregate demand is most likely to cause economic expansion?

- A. An increase in foreign currency per unit of domestic currency
- B. An increase in corporate income tax
- C. An increase in capacity utilization

Q-56. In a country with a high level of income, as domestic income rises, it is most likely that an increase will occur in:

- A. private saving and investment.
- B. the trade balance.
- C. the fiscal balance.

Q-57. An increase in both aggregate demand and supply occurs, with aggregate supply increasing more than aggregate demand. The most likely result is a decrease in the:

- A. real GDP.
- B. participation rate.
- C. price level.

Q-58. Which of the following is most likely to cause a shift to the right in the aggregate demand curve?

- A. Boom in the stock market

- B. Decrease in real estate values
- C. Increase in taxes

Q-59. Which of the following is most likely to lead to a recessionary gap?

- A. Easing monetary policy
- B. Rising stock prices
- C. Declining consumer confidence

3.20. Production Function

3.20.1. 重要知识点

3.20.1.1. Five important sources of economic growth

- Labor supply
- Human capital
- Physical capital stock
- Technology
- Natural resources

3.20.1.2. Production function

- $Y = A \times f(L, K)$ 其中: A 代表技术, L 代表劳动力, K 代表资本
- $Y/L = A \times f(K/L) \rightarrow$ 人均增长
- **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 and capital's percentage share of national income.
 $W_L > W_C$ 说明国民收入中 labor 的贡献更大
- **Potential Growth Rate** = long-term growth rate of labor force + long-term labor productivity growth rate
 - $Y = \frac{Y}{L} \times L = y \times L$
 - $\Delta\% Y = \Delta\% y + \Delta\% L$
 - $\Delta\% y = \Delta\% A + \alpha \Delta\% k$

3.20.2. 基础题

Q-60. An economic forecasting firm has estimated the following equation from historical data based on the neoclassical growth model:

$$\text{Potential output growth} = 1.5 + 0.72 \times \text{Growth of labor} + 0.28 \times \text{Growth of capital}$$

The intercept (1.5) in this equation is best interpreted as:

- A. the long-run sustainable growth rate.
- B. the growth rate of total factor productivity.

-
- C. above trend historical growth that is unlikely to be sustained.

Q-61. Which of the following is least likely to affect the growth of the economy?

- A. The workforce attending an average of 20 hours of training per year
- B. When capital depreciation exceeds gross investment within the economy
- C. An increase in the labor force that is offset by a decrease in the average hours worked per worker, making the total hours worked unchanged

3.21. Business Cycle Pattern

3.21.1. 重要知识点

3.21.1.1. Business cycles have four phases: trough\expansion\ peak\contraction

- Two consecutive quarters of growth in real GDP as the beginning of an expansion and two declining as the beginning of a contraction
- Only applies to the economies that consist of business, not the state-control and agricultural society

3.21.1.2. Inventory-sales ratio

- Measured by **inventory-sales ratio**, Indicating of different stages
 - **Peak** to economic cycle
 - ◆ Inventory-sales ratio increases above normal level with depressed sales, since companies lag in cutting production in response of slowing sales.
 - **Cyclical turn**
 - ◆ Inventory-sales ratio falls back or decrease below normal level with increasing sales, since productions increase after the disposal of excess inventories.
- Utilization of labor levels
 - Changing the number of workers with business cycle costs firm through:
 - ◆ direct expenses; and
 - ◆ damage it would do to employee morale and loyalty.
 - Alternatively, firms changes the utilization of current workers:
 - ◆ Increases (decreases) the products produced hourly
 - ◆ Adjusting the hours they work
 - Firms hire or lay off employees when they perceived the business cycle to be persistent.
- Utilization of physical capital levels: measured by **number of orders in tangible assets**different stages
 - **Early stage of contraction**
 - ◆ Capital spending, reflected by the number of orders in tangible assets,

39-95

decreases as the companies' reaction of the declining aggregate demand. Moreover, the cutbacks will reinforce the economic downturn.

■ **Later stage of contraction**

As the general cyclical downturn matures, cutbacks in spending on structures and heavy equipment further intensify the contraction.

■ **Early stage of an expansion**

Capital spending may increase, despite of excess production capacity, because companies have financial ability to do so and because managers tend to reinstate orders to enhance efficiency.

■ **Later stage of expansion**

Capital spending moves to heavy and complex equipment.

3.21.2. 基础题

Q-62. The inventory/sales ratio is most likely to be rising:

- A. as a contraction unfolds.
- B. partially into a recovery.
- C. near the top of an economic cycle.

3.22. Business Cycle Theory

3.22.1. 重要知识点

3.22.1.1. Theories of the business cycle

➤ 主张政府不应该干预经济

■ **Neoclassical theory:** 强调技术进步会同时影响 AD 与 AS, economy has strong tendency toward 充分就业均衡, 该学派的结论是经济周期是长期均衡的暂时偏离

■ **Austrian theory:** believe cycles are caused by government intervention in the economy

■ **Monetarist cycle theory** 货币主义学派 (认为政府不应干预经济)

◆ Fluctuations in both investment and consumption expenditure, driven by fluctuations in the growth rate of the quantity of money, are the main source of fluctuations in AD, 将使得经济周期出现。

■ **New classical cycle theory (RBC):** rational expectation of price level 是由 potential GDP and expected AD 决定。Only unexpected fluctuation in AD 将使得经济周期出现。

➤ 主张政府应当干预经济

■ **Keynesian cycle theory:** 投资的变动是由 fluctuation in business confidence (animal spirits), 这是 AD 变化的主要原因。凯恩斯认为需要政府干预, 新

古典和货币主义认为不需政府干预

- **Neo-Keynesian school** assumes slow-to-adjust (sticky) prices and wages. The Neo-Keynesian models show that markets do not reach equilibrium immediately and seamlessly, but even small imperfections may cause markets to be in disequilibrium for a long time.所以 Neo-凯恩斯认为价格变化比新古典主义认为的更慢

3.22.2. 基础题

Q-63. The Austrian economic school attributes the primary cause of the business cycle to:

- A. misguided government intervention.
- B. the creative destruction of technological progress.
- C. sticky price and wage expectations that exaggerate trends.

3.23. Unemployment

3.23.1. 重要知识点

3.23.1.1. Definition

- **Employed:** number of people with a job.
 - This figure normally does not include people working in the informal sector
- **Labor force:** number of people who either have a job or are actively looking for a job.
 - This number **excludes** retirees, children, stay-at-home parents, fulltime students, and other categories of people who are neither employed nor actively seeking employment.
- **Unemployed:** people who are actively seeking employment but are currently without a job.
 - **Long-term unemployed:** people who have been out of work for a long time (more than 3 to 4 months) but are still looking for jobs
 - **Frictionally unemployed:** people unemployed due to looking for a job that fits their interests, skills and other preferences or people who are “between” jobs
 - **Structural unemployment:** people unemployed due to “skills gap”, a gap between the skills of workers and skills required for the positions offered
 - **Cyclical unemployment:** people unemployed due to business cycles
- 无需计算在失业率中的部分
 - **Underemployed:** person who has a job but has the qualifications to work a significantly higher-paying job.
 - **Discouraged worker:** person who has stopped looking for a job. When

economy returns to be good, the unemployment rate will increase because the discouraged workers enter the labor force and has not found the job.

- **Voluntarily unemployed:** person voluntarily outside the labor force.

3.23.1.2. Tworations

- **Activity (or participation) ratio:** ratio of labor force to total population of working age (i.e., those between 16 and 64 years of age).

$$\text{labor force participation rate} = \frac{\text{labor force}}{\text{Working-age population}} \times 100$$

- **Unemployment rate:** the percentage of people in the labor force who are unemployed.

$$\text{unemployment rate} = \frac{\text{number of unemployed}}{\text{labor force}} \times 100$$

3.23.2. 基础题 最新cfaf/rm/gmat/cpa网课加微信286982279

Q-64. Assuming all other factors remain unchanged, which of the following changes would most likely cause a simultaneous increase in the participation ratio and a decrease in the unemployment rate?

- A. An increase in the number of people included in the labor force.
- B. A decrease in the total population of working age people.
- C. A decrease in the number of unemployed people.

Q-65. If a strengthening economy leads discouraged workers to return to an active employment search, at least initially, the number of unemployed people would most likely:

- A. increase.
- B. decrease.
- C. remain unchanged.

Q-66. Holding the working-age population constant, if the labor force participation rate declines while the number of people employed remains unchanged, the unemployment rate will most likely:

- A. decrease.
- B. remain unchanged.
- C. increase.

Q-67. The following information has been gathered for a hypothetical economy:

Total Population	1200
------------------	------

Working Age Population	990
Labor Force	800
Underemployed	130
Unemployed	99
Discouraged workers	85
Frictionally Unemployed	30
Voluntarily Unemployed	50

The unemployment rate is closest to:

- A. 9.7%.
- B. 12.4%.
- C. 16.0%.

3.24. Inflation

3.24.1. 重要知识点

3.24.1.1. Definition

- **Inflation** is a sustainable rise of the price in all sectors in an economy.
- **Inflation rate** is the percentage increase in the price level, typically compared to the prior year.
- **Hyperinflation:** an extremely fast increase in aggregate price level, which corresponds to an extremely high inflation rate.
- **Deflation:** a sustained decrease in aggregate price level, which corresponds to a negative inflation rate.
- **Disinflation:** a decline in the inflation rate.
 - Disinflation is very different from deflation because even after a period of disinflation, the inflation rate remains positive and the aggregate price level keeps rising (although at a slower speed).
- **Stagflation**
 - **Phenomenon**
 - ◆ Aggregate supply decrease, price increases, GDP decreases, inflation increases, unemployment rate increases.
 - **Reasons**
 - ◆ Increase in input costs decreases aggregate supply.

3.24.1.2. CPI index

- CPI is the best known indicator of U.S. inflation. The CPI measures the average price for a defined “basket” of goods and services that represents the purchasing patterns of a typical urban household.

$$CPI = \frac{\text{cost of basket at current prices}}{\text{cost of basket at base period prices}} \times 100$$

- Different CPI in different countries and regions results from
 - ◆ Different compositions;
 - ◆ Different weights assigned to reflect consumption patterns;
 - ◆ Different collected data.
- **Producer price index (PPI):** reflect future CPI
 - Reflect the price changes experienced by domestic producers in a country.
- **Headline inflation** refers to price indexes for all goods.
- **Core inflation** refers to price indexes that exclude food and energy.
 - Avoid overreactions to short-term fluctuation in food and energy sector.
- **Laspeyres index**
 - **Uses** a constant basket of goods and services ,most countries calculate consumer price inflation this way
 - Three factors cause a Laspeyres index of consumer prices to be biased upward as a measure of the cost of living: new goods, quality changes, commodity substitution
- **Paasche index**
 - A Paasche index uses the current consumption weights, prices from the base period, and prices in the current period.
- **Fisher index**
 - A Fisher index the geometric mean of a Laspeyres index and a Paasche index
 - Index Fisher = $(I_P \times I_L)^{1/2}$
 - Can solve the substitution bias.

3.24.1.3. Two types of Inflation

- **Demand-pull inflation**
 - Increase in the quantity of money;
 - Increase in government purchases;
 - Increase in exports.
- **Cost-push inflation**
 - Increase in money wage rates;
 - Increase in the money prices of raw materials.

3.24.2. 基础题

Q-68. The consumer price index (CPI) this year is 252. The CPI last year was 246. The inflation rate this year is closest to:

- A. 6.00%.
- B. 2.38%.
- C. 2.44%.

Q-69. Stagflation is best described as an economic situation involving high inflation and high:

- A. economic growth.
- B. aggregate supply.
- C. unemployment.

Q-70. Cost-push inflation is least likely to be affected by an increase in:

- A. finished goods prices.
- B. employee wages.
- C. commodity prices.

Q-71. The following information Exhibit 1 relates to two following questions:

Date	November 2010		December 2010	
Goods	Quantity	Price	Quantity	Price
Sugar	70kg	€0.90/kg	120kg	€1.00/kg
Cotton	60kg	€0.60/kg	50kg	€0.80/kg

For the December consumption basket in Exhibit 1, the value of the Paasche index is closest to:

- A. 116.
- B. 148.
- C. 160.

Q-72. The price index that best resolves the substitution bias is the:

- A. Fisher index.
- B. Paasche index.
- C. Laspeyres index.

Q-73. Suppose that inflation increases due to higher capacity utilization. Such inflation is best described as:

- A. demand-pull inflation.
- B. stagflation.

C. cost-push inflation.

3.25. Economic Indicators

3.25.1. 重要知识点

3.25.1.1. Leading economic indicators

- Average weekly hours, manufacturing
- Average weekly initial claims for unemployment insurance
- Manufacturers' new orders for consumer goods and materials
- Vendor performance, slower deliveries diffusion index
- Manufacturers' new orders for non-defense capital goods
- Building permits for new private housing units
- S&P 500 Stock Index
- Money supply, real M2
- Interest rate spread between 10-year treasury yields and overnight borrowing rates (federal funds rate)
- Index of Consumer Expectations, University of Michigan

3.25.1.2. Coincident economic indicators

- Employees on non-agricultural payrolls
- Aggregate real personal income (less transfer payments)
- Industrial Production Index
- Manufacturing and trade sales

3.25.1.3. Lagging economic indicators

- Average Duration of Unemployment
- Inventory—sales ratio
- Change in unit labor costs
 - 经济衰退初期，单位产品的劳动成本上升
 - 经济复苏后期，单位产品的劳动成本上升
- Average bank prime lending rate
- Commercial and industrial loans outstanding
- Ratio of consumer installment debt to income
- Change in consumer price index for services

3.25.1.4. Business Cycle Characteristics

	Early Expansion (Recovery)	Late Expansion	Peak	Contraction (Recession)
Economic Activity	Gross domestic product (GDP), industrial production, and other	Activity measures show an accelerating rate of growth.	Activity measures show	Activity measures show outright

	measures of economic activity stabilize and then begin to increase.		decelerating rate of growth.	declines.
Employment	Layoffs slow but new hiring does not yet occur and the unemployment rate remains high. Business turns to overtime and temporary employees to meet rising product demands.	Business begins full time rehiring as overtime hours rise. The unemployment rate falls.	Business slows its rate of hiring. The unemployment rate continues to fall but at a decreasing rate.	Business first cuts hours and freezes hiring, followed by outright layoffs. The unemployment rate rises.

3.25.2. 基础题

Q-74. The most recent economic data release indicates the following:

Capital spending is expanding rapidly, but the growth rate of spending has begun to slow down; and the rate of hiring has slowed, but the unemployment rate continues to fall.

The economy is most likely in which of the following phases?

- A. Peak
- B. Late expansion
- C. Contraction

Q-75. A positive movement in a lagging indicator would least likely be used to:

- A. confirm that an expansion is currently underway.
- B. identify a past condition of the economy.
- C. identify an expected future economic upturn.

Q-76. The unemployment rate is considered a lagging indicator because:

- A. new job types must be defined to count their workers.
- B. multi-worker households change jobs at a slower pace.
- C. businesses are slow to hire and fire due to related costs.

3.26. Central Bank , Money Supply and Money Demand

3.26.1. 重要知识点

3.26.1.1. Roles of central bank

- Monopoly supplier of the currency
- Banker to the government and bankers' bank
- Lender of last resort
- Regulator and supervisor of the payments system
- Conductor of monetary policy
- Supervisor of the banking system

3.26.1.2. Objectives of Central bank

- Maintain price stability through target inflation
- Maintain exchange rate stability through foreign reserves
- Prompt economic growth
- Achieve full employment
- Moderate long-term interest rates

3.26.1.3. Central bank should be

- Independent (operational and target independent)
- Credibility
- Transparent

3.26.1.4. Money has three basic functions

- Medium of exchange -facilitates transactions (liquidity).
- Unit of account- used to quote prices.
- Store of value- transfer purchasing power to future

3.26.1.5. Monetary multiplier 最新资料加V : zyz786468331

- Monetary multiplier = $\frac{1}{r_d}$ (r_d : the required reserve ratio)

3.26.1.6. Quantity theory of money

- Money supply × Velocity = GDP = Price × Real output Monetarists believed that money supply should be increased only at the growth rate of real output to stabilize price level.

3.26.1.7. Money demand

- **Transactions-related:** money balances that are held to finance transactions increase as the GDP grows. The ratio of transactions balances and GDP remains fairly stable.
- **Precautionary:** buffer against unforeseen events increases as the level of transactions growth

- **Speculative (portfolio demand for money):** money balance held to prevent deterioration of other assets.

3.26.1.8. Money Supply

- The supply of money remains constant, since it is predetermined by the central bank, resulting in vertical graph of money supply.
- Interest rate decreases → money supply increases.
- Interest rate increases → the opportunity cost of holding money increases → money supply decreases.
- Notice that as the Fed increases the money supply, the interest rate falls, which reduces the opportunity cost of holding money.

3.26.1.9. Fisher effect

- $R_{\text{Nom}} = R_{\text{Real}} + E[I]$
 - Real rate of interest in an economy is stable over time so that changes in nominal interest rates are the result of changes in expected inflation.

3.26.2. 基础题

Q-77. Which of the following is least likely to be a valid function/characteristic of money?

Money:

- A. provides a store of wealth.
- B. requires a double coincidence of wants.
- C. acts as a unit of account.

Q-78. The tools used by central banks to implement monetary policy most likely include:

- A. transfer payments.
- B. open market operations.
- C. raising or lowering income taxes.

3.27. Monetary Policy

3.27.1. 重要知识点

3.27.1.1. Tools of the central bank

- **Policy rate**
 - Policy rate ↓ → 融资成本低，释放流动性（扩张的货币政策）
 - Policy rate ↑ → 融资成本高，收紧流动性（紧缩的货币政策）
- **Reserve requirements**
 - Reserve requirement increases → available funds for lending decreases → money supply decreases → interest rate increases

- 存款准备金 ↑ → 紧缩的货币政策

- 存款准备金 ↓ → 扩张的货币政策

➤ **Open market operations**

- **Definition:** purchase and sale of government bonds from and to commercial banks and/or designated market makers.

- ◆ Purchase bonds, increase money supply

- ◆ Sale bonds, decrease money supply

- Open market operations help bank target a **desired level of reserves** of commercial banks or a **desired interest rate** of these reserves.

- 央行买债券 → 扩张的货币政策

- 央行卖债券 → 紧缩的货币政策

3.27.1.2. Neutral rate of interest: the rate that neither spurs on nor slows down the underlying economy

➤ Neutral rate = Trend growth + Inflation target

➤ Policy rate > Neutral rate: contractionary

➤ Policy rate < Neutral rate: expansionary

3.27.1.3. Limitation of money policy

➤ **Long-term rate may not adjusted coincide with short-term rates**

➤ **Liquidity trap**

- A condition in which the demand for money becomes infinitely elastic (horizontal demand curve) so that injections of money into the economy will not lower interest rates or affect real activity.

- When the interest rate is already at its low, and further decrease fails to control the amount of money that households and corporates put in bank.

➤ **Failure of control**

- the willingness of commercial banks to create money

- Banks refuse to lend more regardless of the favorable money supply and interest rate condition.

➤ **Quantitative easing**

- **Implemented by central bank** when deflation occurs and the short-term rates are near zero.

3.27.2. 基础题

Q-79. An increase in the official policy rate will most likely lead to:

A. gradual increases in commercial banks' base rates.

B. reduced credit availability.

C. contracting commercial bank liquidity.

Q-80. In an effort to influence the economy, a central bank conducted open market activities by selling government bonds. This action implies that the central bank is most likely attempting to:

- A. expand the economy through a lower policy interest rate.
- B. contract the economy through a lower policy interest rate.
- C. contract the economy by reducing bank reserves.

Q-81. As a monetary policy tool, quantitative easing (QE) will most likely help revive an ailing economy in which of the following environments?

- A. Liquidity trap
- B. Deflationary trap
- C. Declining bank reserves and economic activity

Q-82. The current situation is as follows:

Real trend rate=2%

Current inflation rate=3%

Long-run Expected inflation =2%

If the policy rate is 5%, which type of monetary policy is it?

- A. Expansionary
- B. Contractionary
- C. Neutral

Q-83. Monetary policy is least likely to include:

- A. setting an inflation rate target.
- B. changing an official interest rate.
- C. enacting a transfer payment program.

3.28. Fiscal Policy

3.28.1. 重要知识点

3.28.1.1. Spending tools

- **Transfer payments:** welfare payments made through the social security system
- **Current spending:** routine and continuing government purchases of goods and services
- **Capital spending:** Cost on infrastructures by governments and prompts

productivity in the future

3.28.1.2. Revenue tools

- **Tax** can be considered as both to generate revenue for future expenses and to redistribute wealth among different classes.
- **Direct taxes** refers to revenues from income or wealth of both individual and corporate, also including capital gains taxes, national insurance taxes, property taxes, and inheritance taxes.
- **Indirect taxes** are levied on purchasing of goods and services.
- Consumptions tend to react more quickly to indirect taxes.

3.28.1.3. Fiscal multiplier

$$\text{Fiscal multiplier} = \frac{1}{1 - MPC(1 - t)} = \frac{1}{1 - b \times (1 - t)}$$

- MPC: Marginal propensity of consumption (b).
- The fiscal multiplier is
 - Negatively related to the tax rate.
 - Positively related to the MPC.

3.28.1.4. Limitation of fiscal policy

- **Fiscal policy may be incorrect because of**
 - **Inaccurate forecasts.**
 - **Lags in executing fiscal policy**
 - ◆ **Recognition lag:** The time lag between the emergence of economic downturn and the recognition from the government.
 - ◆ **Action lag:** The time lag between the decision of the government and the implementation of the policy.
 - ◆ **Impact lag:** The time lag between the implementation of the policy and the emergence of results.
- **Crowding out effect:** Competition between government and private sectors increases borrowing cost and crowds out private firms with subsequent less investing and economic growth.
- **Ricardianequivalence**
 - **Ricardian Equivalence:**Increases in the government spending are equal to increases in forward tax rates.
 - Consumers regard the increase in budget deficit as a signal of growing taxes in the future and thus increase present savings to offset the negative influence, therefore, the fiscal policy will not affect aggregate demand as it should be.
 - However, Ricardian equivalence will not hold when

People do not correctly anticipate all the future taxes required to repay the additional government debt, then they feel wealthier when the debt is issued and may increase their spending, adding to aggregate demand.

3.28.1.5. Interaction of monetary and fiscal policies

Monetary policy	Fiscal policy	Interest rate	output	Private spending	Public spending
Tight	Tight	higher	lower	lower	lower
Easy	Easy	lower	higher	higher	higher
Tight	Easy	higher	higher	lower	higher
Easy	Tight	lower	varies	higher	lower

3.28.2. 基础题

Q-84. An expansionary fiscal policy is most likely associated with:

- A. an increase in capital gains tax rates.
- B. crowding out of private investments.
- C. an increase in government spending on social insurance and benefits.

Q-85. Given stable inflation, a tight fiscal policy accompanied by easy monetary policy will most likely:

- A. increase the private sector share of GDP.
- B. have no impact on the private sector share of GDP.
- C. decrease the private sector share of GDP.

Q-86. Which of the following is a limitation on the ability of central banks to stimulate growth in periods of deflation?

- A. Ricardian equivalence
- B. The interaction of monetary and fiscal policy
- C. The fact that interest rates have a minimum value (0%)

Q-87. In a hypothetical economy, consumption is 60% of pre-tax income, and the average tax rate is 30% of total income. If planned government expenditures are expected to increase by \$1.3 billion, the increase in total income and spending, in billions, is closest to:

- A. \$2.2.
- B. \$3.2.
- C. \$1.5.

3.29. Comparative Advantage

3.29.1. 重要知识点

3.29.1.1. Absolute advantage & comparative advantage

- A country has an **absolute advantage** in producing a good (or service) if it is able to produce that good at a lower cost or use fewer resources in its production than its trading partner.
- A country has a **comparative advantage** in producing a good if its opportunity cost of producing that good is less than that of its trading partner.

3.29.1.2. 产生比较优势的原因

- **Ricardian model: labor is the only (variable) factor of production.** Differences in labor productivity, reflecting underlying differences in technology, are the source of comparative advantage and hence the key driver of trade in this model.
 - In the two-country model, if countries vary in size, the smaller country may specialize completely, but may not be able to meet the total demand for the product.
 - The larger country may be incompletely specialized, producing and exporting the good in which it has a comparative advantage but still producing (and consuming) some of the good in which it has a comparative disadvantage.
 - It is important to recognize that although differences in technology may be a major source of comparative advantage at a given point in time, other countries can close the technology gap or even gain a technological advantage.
- **Heckscher-Ohlin model: comparative advantage and pattern of trade are determined by differences in factor (capital & labor) endowments between countries.** (生产要素禀赋区别)
 - A country has a comparative advantage in goods whose production is intensive in the factor with which it is relatively abundantly endowed, and would tend to specialize in and export that good.
 - ◆ Capital is relatively more (less) abundant in a country if the ratio of its endowment of capital to labor is greater (less) than that of its trading partner.
 - ◆ A country having relatively abundant labor would export relatively labor-intensive goods and import relatively capital-intensive goods.
 - It allows the possibility of income redistribution through trade
 - ◆ Favorable impact on the abundant factor, and a negative impact on the scarce factor.
 - ◆ The price of the relatively less scarce (more available) factor of

production in each country will increase.

- ◆ The good that a country imports will fall in price (that is why they import it), and the good that a country exports will rise in price.

3.29.2. 基础题

Q-88. According to the Heckscher-Ohlin model, when trade opens:

- A. the scarce factor gains relative to the abundant factor in each country.
- B. the abundant factor gains relative to the scarce factor in each country.
- C. income is redistributed between countries but not within each country.

Q-89. Three countries produce tables and chairs, and the output per worker per day in each country as follows:

Country	Tables	Chairs
A	50	70
B	30	50

Assume that Country C produces 12% more tables than Country B and 12% fewer chairs than Country A. Which country most likely has the greatest comparative advantage for producing tables? Country:

- A. C.
- B. B.
- C. A.

Q-90. Consider two countries, A and B. Country A is a closed country with a relative abundance of labor and holds a comparative advantage in the production of textiles. Country B has a relative abundance of capital. When the textile trade is opened between the two countries, Country A will most likely experience a favorable impact on:

- A. labor.
- B. capital.
- C. both capital and labor.

3.30. Trade Barrier

3.30.1. 重要知识点

3.30.1.1. Trade restrictions

- **Reasons** for trade restrictions
 - Protecting established domestic industries from foreign competition;
 - Protecting new industries from foreign competition until they mature (infant

industry argument);

- Protecting and increasing domestic employment;
- Protecting strategic industries for national security reasons, generating revenues from tariff (especially for developing countries) and retaliation against trade restrictions imposed by other countries.

➤ **Types of trade restrictions**

- **Tariffs:** tariffs are taxes that a government levies on imported goods.
- **Quotas:** restrict the quantity of a good that can be imported into a country, generally for a specified period of time.
- **Export subsidies:** paid by the government to the firm when it exports a unit of a good that is being subsidized.
- **Voluntary export restraint:** a trade barrier under which the exporting country agrees to limit its exports of the good to its trading partners to a specific number of units.

3.30.1.2. Tariffs and quotas

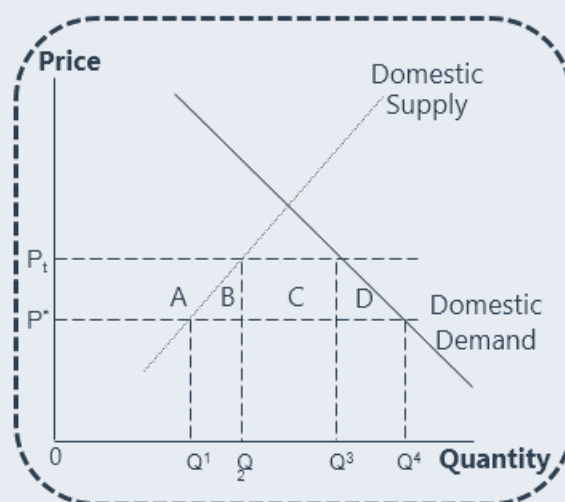
	Tariff	Import Quota	Export Subsidy	VER
Impact on	Importing country	Importing country	Exporting country	Importing country
Producer surplus	Increases	Increases	Increases	Increases
Consumer surplus	Decreases	Decreases	Decreases	Decrease
Government revenue	Increases	Mixed (depends on whether the quota rents are captured by the importing country through sale of licenses or by the exporters)	Falls (government spending rises)	No change (rent to foreigners)
National welfare	Decreases in small country Could increase in large country	Decreases in small country Could increase in large country	Decreases (a larger decline in large country)	Decreases

3.30.1.3. Capital restriction

- Some countries impose capital restrictions on the flow of financial capital across borders.
- Reasons for governments to restrict inward and outward flow of capital
 - Reduce the volatility of domestic asset prices

- ◆ In times of macroeconomic crisis, capital mobility can result in capital flight out of the country, especially if most of the inflow reflects short-term portfolio flows into stocks, bonds and other liquid assets rather than foreign direct investment in productive assets.
- Maintain fixed exchange rates
 - ◆ Capital restrictions and fixed exchange rate targets are complementary instruments because in a regime of perfect capital mobility, governments cannot achieve domestic and external policy objectives simultaneously using only standard monetary and fiscal policy tools.
- Shield domestic interest rates from external market forces
 - ◆ Capital controls allow China to exercise a degree of monetary policy independence that would not be achievable under a fixed exchange rate regime with free capital flows.
- Strategic industries are often subject to ownership restrictions

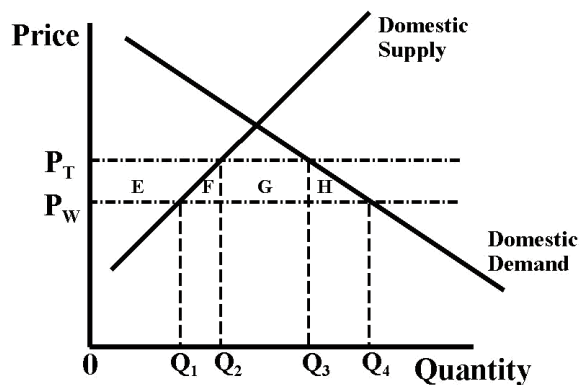
3.30.1.4. Deadweight loss



3.30.2. 基础题

Q-91. The diagram to the right shows the domestic demand and supply curves for a country which imports a commodity, where P_W is its world price and P_T is its domestic price after the imposition of a tariff.

The reduction in the net national welfare of this country as a result of the tariff is best described by the area(s):



- A. E.
- B. F+H.
- C. G.

Q-92. Which type of trade restriction would most likely increase domestic government revenue?

- A. Tariff
- B. Import quota
- C. Export subsidy

3.31. BOP

3.31.1. 重要知识点

3.31.1.1. Balance of payments components

- **The BOP equation** is: current account + capital account + financial account = 0
 - **The current account** measures the exchange of merchandise goods, services, investment income, and unilateral transfers (gifts to and from other nations). The current account balance equals the sum of exports minus imports, net interest income, and net transfer.
 - **The capital account** consists capital transfer and net sales of non-produced/non-financial assets.
 - **The financial account** measure net capital flows based on sales and purchases of domestic and foreign financial assets. (financial assets abroad and foreign-owned financial assets)

3.31.2. 基础题

Q-93. A country implements policies that are expected to increase taxes by €100 million, increase government spending by €50 million, and reduce investments and private sector savings by €25 million each. As a result, the country's current account balance is most likely to:

- A. decrease by €50 million.
- B. increase by €100 million.
- C. increase by €50 million.

Q-94. Dividend received is recorded in which of the following balance of payments components?

- A. Capital account.
- B. Current account.
- C. Financial account.

3.32. International Organization

3.32.1. 重要知识点

3.32.1.1. International Monetary Fund (IMF)

- **主要目的：维持全球金融秩序**
 - Provides a forum for cooperation on international monetary problems
 - Facilitates the growth of international trade and promotes employment, economic growth, and poverty reduction
 - Supports exchange rate stability and an open system of international payments
 - Lends foreign exchange to members when needed, on a temporary basis and under adequate safeguards, to help them address balance of payments problems
- After the global financial crisis of 2007-2009, the IMF has redefined and deepened its operations by:
 - Enhancing its lending facilities
 - Improving the monitoring of global, regional, and country economies
 - Helping resolve global economic imbalances
 - Analyzing capital market developments
 - Assessing financial sector vulnerabilities

3.32.1.2. World Bank Group

- **World Bank Group's main objective** is to help developing countries **fight poverty** and enhance environmentally sound economic growth. **（主要目的：扶贫）**

- For developing countries to grow and attract business, they have to
 - Strengthen their governments and educate their government officials
 - Implement legal and judicial systems that encourage business
 - Protect individual and property rights and honor contracts
 - Develop financial systems robust enough to support endeavors ranging from micro credit to financing larger corporate ventures
 - Combat corruption

3.32.1.3. World Trade Organization (WTO)

- The WTO provides the legal and institutional foundation of the multinational trading system. It is the only international organization that regulates cross-border trade relationships among nations on a global scale.
- The WTO's most important functions are the implementation, administration, and operation of individual agreements; acting as a platform for negotiations; and settling disputes.
- WTO has the mandate to review and propagate its members' trade policies and ensure the coherence and transparency of trade policies.
- Provides technical cooperation and training to developing, least-developed, and low-income countries to assist with their adjustment to WTO rules.
- WTO is a major source of economic research and analysis, producing ongoing assessments of global trade in its publications and research reports on special topics.
- WTO's framework of global trade rules provides the major institutional and regulatory base.

3.32.2. 基础题

- Q-95.** Which of the following best describes a function of the International Bank for Reconstruction and Development?
- A. Lending foreign currencies on a temporary basis to address balance of payment issues
 - B. Regulating cross-border trade relationships on a global scale
 - C. Providing low interest rate loans to developing countries

3.33. Exchange Rate

3.33.1. 重要知识点

3.33.1.1. Nominal and real exchange rate

- **Exchange rate** is the number of units of one currency (called the price currency) that one unit of another currency (called the base currency) will buy.
 - **Nominal exchange rate**: the price that we observe in the marketplace for foreign exchange.
 - **Real exchange rate**: the focus shifts from the quotations in the foreign exchange market to what the currencies actually purchase in terms of real goods and services.
- $$FX_{\text{real}(d/f)} = FX_{\text{nominal}(d/f)} \times \frac{CPI_f}{CPI_d}$$

3.33.1.2. FX appreciation and depreciation

1.7799CHF/USD to 1.8100CHF/USD → USD appreciated therefore CHF depreciated

3.33.1.3. Spot rates & forward rates

- Spot rates: exchange rate used for spot transactions.
- Forward rates: exchange rate referred in the forward contract transactions.

3.33.1.4. Forward discount or premium

- **Forward exchange rates** are typically quoted in terms of points, and the points on a forward rate quote are simply the difference between the forward exchange rate quote and the spot exchange rate quote, with the points scaled so that they can be related to the last decimal in the spot quote.
 - If the forward rate is higher than the spot rate → the points >0 → the base currency is trading at a forward premium.
 - If the forward rate is lower than the spot rate → the points <0 → the base currency is trading at a forward discount.
 - Occasionally, one will see the forward rate or forward points represented as a percentage of the spot rate rather than as an absolute number of points.

3.33.1.5. Crossrate

- **Cross rate** is calculated with two exchange rates involving three different currencies.

3.33.2. 基础题

Q-96. A research report produced by a dealer includes the following exchange rates:

	Spot Rate	Expected Spot Rate in One Year
USD/EUR	1.3960	1.3860
USD/CAD	1.0110	1.0300
EUR/GBP	1.2850	1.2790

The expected appreciation (%) of the Canadian dollar (CAD) relative to the British pound (GBP) is closest to:

- A. -3.00.
- B. 3.09.
- C. 0.70.

Q-97. A New Zealand traveler returned from Singapore with SGD7,200(Singapore dollars). A foreigntax dealer provided the traveler with the following quotes:

Ratio	Spot Rates
USD/SGD	1.2580
NZD/USD	0.7668
USD: US dollar	
NZD: New Zealand dollar	

The amount of New Zealand dollars (NZD) that the traveler would receive for his Singapore dollars is closest to:

- A. NZD6,945.
- B. NZD6,954.
- C. NZD6,965.

Q-98. Assume that the nominal spot exchange rate (USD/EUR) increases by 7.3%, the eurozone price level decreases by 3.8%, and the US price level increases by 2.3%.The change in the real exchange rate (%) is closest to:

- A. 0.9%.
- B. -6.0%.
- C. 14.1%.

Q-99. Spot Rate Expected Spot Rate in One Year

USD/EUR 1.3001 1.3456

USD/GBP 1.5805 1.5489

Based on the table, the appreciation of which of the following currencies is most likely to occur?

- A. The British pound against the US dollar by 2.00%
- B. The US dollar against the euro by 3.38%
- C. The euro against the US dollar by 3.50%

3.34. Interest Rate Parity (IRP)

3.34.1. 重要知识点

3.34.1.1. Interest rate parity (IRP) holds when any forward premium or discount just offsets differences in interest rates so that an investor will earn the same return investing in either currency. Approximated by equating the difference between the domestic interest rate and the foreign interest rate to the forward premium or discount.

3.34.1.2. Interest rate parity relationship

- F (forward), S (spot) X/Y, r_X and r_Y is the nominal risk-free rate in X and Y

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

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

- The forward rate will be higher than (be at a premium to) the spot rate if the nominal risk-free rate in X is higher than that in Y.
- More generally, and regardless of the quoting convention, the currency with the higher (lower) interest rate will always trade at a discount (premium) the forward market.

3.34.2. 基础题

Q-100. The following information is available:

New Zealand dollar (NZD) to British pound (GBP) spot exchange rate: 2.0979

Libor interest rates for the British pound: 1.6025%

Libor interest rates for the New Zealand dollar: 3.2875%

All Libor interest rates are quoted on a 360-day year basis

The 180-day forward points (scaled up by four decimal places) in NZD/GBP is closest to:

- A. 39.
- B. 348.
- C. 176.

Q-101. An investor examines the following rate quotes for the Brazilian real and the Australian dollar:

Spot rate BRL/AUD	2.1131	BRL 1-year interest rate	4%
Forward rate BRL/AUD	2.1392	AUD 1-year interest rate	3%

If the investor shorts BRL400,000 he will achieve a risk-free arbitrage profit (in BRL) closest to:

- A. -6,327.
- B. 1,088.
- C. 6,405.

3.35. FX Regime

3.35.1. 重要知识点

3.35.1.1. Exchange rate regimes

- **Arrangements with no separate legal tender**
 - Countries do not have its own legal tender → dollarization
 - ◆ The country uses the currency of another nation as its medium of exchange and unit of account)
 - Monetary union: Euros
- **Countries that have their own currency**
 - **Currency board system → HK**
 - ◆ The IMF defines a currency board system (CBS) as
 - ✧ A monetary regime based on an explicit legislative commitment to exchange domestic currency for a specified foreign currency at a fixed exchange rate, combined with restrictions on the issuing authority to ensure fulfillment of its legal obligation. This implies that domestic currency will be issued only against foreign exchange and it remains fully backed by foreign assets.....
 - **Fixed parity**
 - ◆ In the fixed-rate system, the exchange rate may be pegged to a single currency, or to a basket index of the currencies of major trading partners. There is a band of up to ± 1 percent around the parity level within which private flows are allowed to determine the exchange rate. The difference between currency board system and fixed parity.
 - ✧ First, there is no legislative commitment to maintaining the specified parity.
 - ✧ Second, the target level of foreign exchange reserves is discretionary.
 - ◆ The credibility of the fixed parity depends on the country's willingness and ability to offset imbalances in private sector demand for its currency.
 - **Target zone:** A target zone regime has a fixed parity with fixed horizontal intervention bands that are somewhat wider, up to ± 2 percent around the

parity, than in the simple fixed parity regime.

- **Crawling peg**: the exchange rate is usually adjusted against a single currency, especially during the high inflation periods.
 - ◆ **Passive crawling peg**: the exchange rate was adjusted frequently (weekly or daily) to keep pace with the inflation rate.
 - ◇ Example: Brazil
 - ◆ **Active crawling peg**: the exchange rate was pre-announced for the coming weeks with changes taking place in small steps.
 - ◇ The aim of the active crawl was to manipulate expectations of inflation.
 - ◇ Example: Chile
- **Fixed parity with crawling bands**: initially, a country may fix its rates to a foreign currency to anchor expectations about future inflation but then gradually permit more and more flexibility in the form of a pre-announced widening band around the central parity.
- **Managed float**: a country may simply follow an exchange rate policy based on either internal or external policy targets.
- **Independently floating rates**: the exchange rate is fully determined by the market, and the central bank is able to exercise independent monetary policy to achieve the objectives of price stability and full employment.

3.35.2. 基础题

Q-102. In the classification of currency regimes, a currency board system (CBS) most likely differs from a fixed-rate parity system in that:

- A. a CBS has a discretionary target level of foreign exchange reserves.
- B. a CBS can peg to a basket of currencies but a fixed-rate system cannot.
- C. the monetary authority within a CBS does not act as a traditional lender of last resort.

Q-103. A fixed exchange rate regime in which the monetary authority is legally required to hold foreign exchange reserves backing 100% of its domestic currency issuance is best described as:

- A. a monetary union
- B. a currency board
- C. conventional fixed peg arrangement

Q-104. A developing country that maintains a fixed value for its currency relative to the US dollar its inflation rate falls below the level of inflation in the United States. The most

likely result of the developing country's actions to maintain the fixed exchange rate target is that its:

- A. foreign exchange reserves will decrease.
- B. short-term interest rates will fall.
- C. money supply will contract.

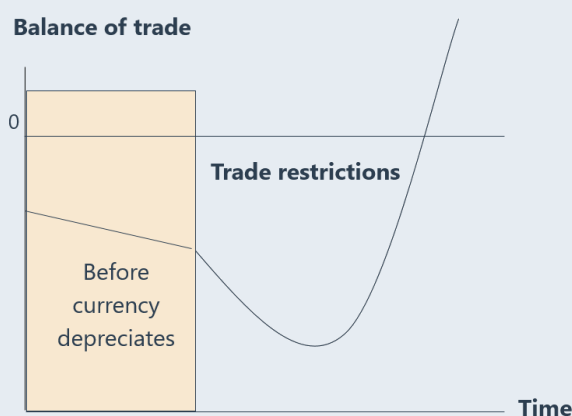
3.36. Elasticity Approach and Absorption Approach

3.36.1. 重要知识点

3.36.1.1. Elasticity approach

- $\omega_M = \frac{\text{Imports}}{\text{imports} + \text{exports}} \quad \omega_X = \frac{\text{exports}}{\text{imports} + \text{exports}}$
 - ϵ_M : elasticities (as positive numbers) of demand for imports
 - ϵ_X : elasticities (as positive numbers) of demand for exports
- Given Marshall-Lerner condition: $\omega_X \epsilon_X + \omega_M (\epsilon_M - 1) > 0$
- When import expenditures = export revenues 即 $\omega_X = \omega_M$
Marshall-Lerner condition 简写为 $\epsilon_X + \epsilon_M > 1$
- In general, elasticity of demand is greater for goods with close substitutes, goods that represent a high proportion of consumer spending, and luxury goods in general. Goods that are necessities, have few or no good substitutes, or represent a small proportion of overall expenditures tend to have less elastic demand.
- According to the elasticity approach, currency depreciation → trade deficit increase regardless of the elasticity of import or export demand
- If import/ export goods are goods with close substitutes → greater effect on trades
- **The J-curve**
 - Even when the Marshall-Lerner condition is satisfied, it is still possible that devaluation (in a fixed parity regime) or depreciation (in a floating regime) of the currency will initially make the trade balance worse before making it better. This effect, called the J-curve effect.
 - In the very short run, the J-curve reflects the order delivery lags that take place in import and export transactions.
 - A J-curve pattern may also arise if short-term price elasticities do not satisfy the Marshall-Lerner condition but long-term elasticities do satisfy it.
 - 出口供给（主要原因）和进口需求作出相应调整后，贸易余额开始改善
 - 调整过程用曲线描述呈 J 形

- Marshall-Lerner condition 成立情况下，贬值对贸易余额的时滞效应——J-Curve Effect
- Shortcoming: ignores capital flows



3.36.1.2. Absorption approach

- **Absorption approach** is generally a macroeconomic view of exchange rates and trade balance.
- $Y = C + I + G + X - M \rightarrow X - M = Y - (C + I + G)$; $(C + I + G)$ means domestic absorption of goods and services.
- 根据 $S = I + (G - T) + (X - M)$, 在吸收法两种情况下，均是通过增加储蓄的方式来改善贸易赤字
 - **If there is excess capacity in the economy**
 - ◆ Currency depreciation → 外国商品价格上涨 → 本国商品需求上升 → income increase → savings increase → trade balance improved.
 - **If the economy is at full employment (wealth effect)**
 - ◆ Currency depreciation → 以本币计价的资产购买力下降 → 居民总财富下降 → 居民降低消费 → savings increase → trade balance improved.

3.36.2. 基础题

Q-105. Based on the elasticities approach, a country can implement an exchange rate policy to improve its trade balance most effectively if it imports and exports products:

- that are consumer necessities.
- with no good substitute.
- traded in competitive markets.

Q-106. A large industrialized country has recently devalued its currency in an attempt to correct a persistent trade deficit. Which of the following domestic industries is most likely to benefit from the devaluation?

- Luxury cars

-
- B. Branded prescription drugs
 - C. Restaurants and live entertainment venues

3.37. 进阶题

Q-1. If marginal cost per unit is greater than average total cost per unit, increasing output will most likely cause:

- A. marginal cost to decrease.
- B. average fixed cost to increase.
- C. average variable cost to increase.

Q-2. Upsilon Natural Gas, Inc. is a monopoly enjoying very high barriers to entry. Its marginal cost is \$40 and its average cost is \$70. A recent market study has determined the price elasticity of demand is 1.5. The company will most likely set its price at:

- A. \$40.
- B. \$70.
- C. \$120.

Q-3. If relative to prior values of their respective indicators the inventory—sales ratio has risen, unit labor cost is stable, and real personal income has decreased, it is most likely that a peak in the business cycle:

- A. has occurred.
- B. is just about to occur.
- C. will occur sometime into the future.

Q-4. The following data apply to a country in its domestic currency units:

Consumer spending on goods and services	875,000	Government spending on goods and services	305,000
Business gross fixed investment	286,000	Government gross fixed investment	84,000
Change in inventories	-68,000	Capital consumption allowance	8,500
Transfer payments	9,000	Statistical discrepancy	-2,800
Exports	219,000	Imports	250,000

Using the expenditures approach, the country's gross domestic product (GDP) is closest to:

- A. 1,448,200.
- B. 1,451,500.
- C. 1,466,490.

Q-5. Because of a sharp decline in real estate values, the household sector has increased the fraction of disposable income that it saves. If output and investment spending remain

69-95

unchanged, which of the following is most correct response?

- A. A decrease in the government deficit
- B. A decrease in net exports and increased capital inflow
- C. An increase in net exports and increased capital outflow

Q-6. If wages were automatically adjusted for changes in the price level, the short-run aggregate supply curve would most likely be:

- A. flatter.
- B. steeper.
- C. unchanged.

Q-7. Long-term sustainable growth of an economy is least likely to result from growth in:

- A. the supply of labor.
- B. output per unit of labor.
- C. capital per unit of labor.

Q-8. A developing country that maintains a fixed value for its currency relative to the U.S. dollar is experiencing a decline in its economic activity, and its inflation rate falls below the level in the United States. As a result of the developing country's actions to maintain the fixed exchange rate target, its:

- A. money supply will contract.
- B. short-term interest rates will fall.
- C. foreign exchange reserves will decrease.

Solutions

By training your thoughts to concentrate on the bright side of things, you are more likely to have the incentive to follow through on your goals. You are less likely to be held back by negative ideas that might limit your performance.

试着训练自己的思想朝好的一面看，这样你就会汲取实现目标的动力，而不会因为消极沉沦停滞不前。

3. Economics

3.1. 基础题

Q-1. Solution: B.

Initial price quantity relationship:

$$Q_{Pizza}^D = 15 - 0.75P + 0.01 \times 750 - 0.25 \times 2.50 = 21.875 - 0.75P_{Pizza}$$

Resulting demand curve:

$$P_{Pizza} = 29.17 - 1.33Q_{Pizza}^D$$

Price quantity relationship at new income level

$$Q_{Pizza}^D = 15 - 0.75P_{Pizza} + 0.01 \times 1000 - 0.25 \times 2.50 = 24.375 - 0.75P_{Pizza}$$

Resulting demand curve:

$$P_{Pizza} = 32.5 - 1.33Q_{Pizza}^D$$

The slope of her demand curve for pizza will still be -1.33 even with the higher income effect will result in a parallel shift of the initial demand curve to the right.

PS: Demand curve is the graph of the inverse demand function.

Q-2. Solution: A.

A shift in the demand curve results from a change in any variable other than the good's own price, P_x . Given the demand function, a change in either P_y or I would result in a shift in the demand curve. A change in quantity demanded, which refers to a movement along the demand curve, arises when the good's own price changes.

B is incorrect. A change in Q_{xd} is the result rather than the cause of change.

C is incorrect. A change in quantity demanded, which refers to a movement along the demand curve, arises when the good's own price changes.

Q-3. Solution: B.

Market equilibrium occurs when quantity demanded is equal to quantity supplied, so set $Q_{sp}^d = Q_{sp}^s$ after inserting the given values for I and W . Next, solve for P_{sp} :

$$2,000 - 25P_{sp} + 3(12,500) = -400 + 75P_{sp} - 100(12)$$

$$-25P_{sp} - 75P_{sp} = -400 - 1200 - 2,000 - 37,500$$

$$-100P_{sp} = -41,100;$$

$$P_{sp} = -41,100/-100 = \$411.$$

Q-4. Solution: C.

$$Q_t^d = 1,600 - 30P_t + 0.2I + 120P_c$$

$$= 1,600 - 30 \times 28 + (0.2 \times 2200) + (120 \times 23) = 3960 = Q_t^s \text{ (equilibrium)}$$

$$Q_t^s = -500 + 300P_t - 100W = 3960$$

$$\text{Solve for } W = [3,960 + 500 - (300 \times 28)] / (-100) = 39.4$$

I increased by 2.4%; $I = 2,200 \times 1.024 = 2,252.8$

Set $Q_t^d = Q_t^s$ and solve for new P_t :

$$P_t = [1,600 + (0.2 \times 2,252.8) + (120 \times 23) + 500 + (100 \times 39.4)] / 330 = 28.03$$

$$Q^d = 1,600 - (30 \times 28.03) + (0.2 \times 2,252.8) + (120 \times 23) = 3969.66$$

Q-5. Solution: A.

The slope coefficient of Q. in the inverse supply function is 0.04.

Start with the supply equation : $Q = -55 + 26P_s + 1.3P_a$

$$\text{Insert } P_a = 10; \quad = -55 + 26P_s + 1.3 \times 10$$

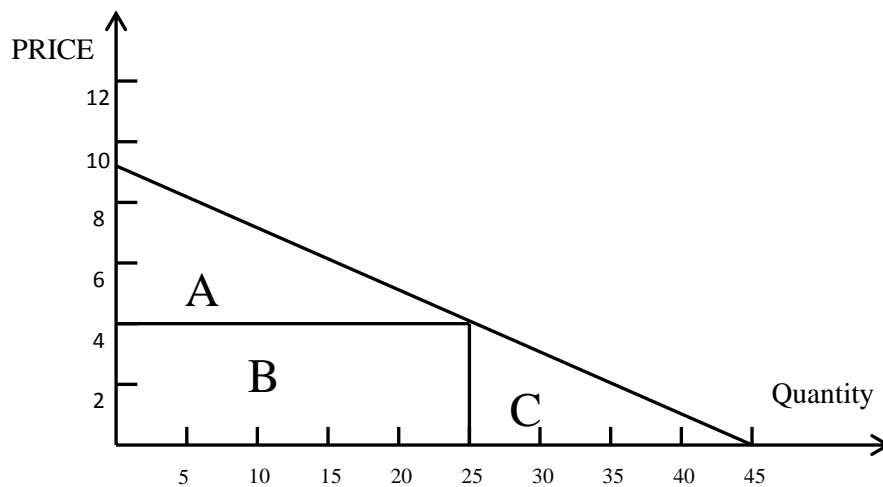
$$= -42 + 26P_s$$

$$\text{Solve for } P_s: \quad P_s = 1.6 + 0.04Q \text{ (the inverse supply function)}$$

Alternatively,

The slope coefficient of Q = $1/26 = 0.04$

Q-6. Solution: A.



On rearrangement, the demand function is:

$$Q_{\text{Tennis Match}} = 45 - 5.0 \times P_{\text{Tennis Match}}$$

The number of matches played per month at:

$$\$4.00/\text{match} = 45 - 5.0 \times 4.00 = 25$$

The Y-intercept of the demand curve occurs when $Q=0$; $P=9$

The X-intercept of the demand curve occurs when $P=0$; $Q=45$

In addition to the per play charge, the club will be able to charge the consumer surplus: the area under the demand curve above the current price per match to a total of 25 matches:

$$1/2 \times (\$9 - \$4) \times 25 = \$62.50.$$

This is illustrated in the diagram as triangle A

Q-7. Solution: A.

The own-price elasticity of demand ($E_{P_x}^d$) is calculated as:

$$E_{P_x}^d = \frac{\% \Delta Q_x^d}{\% \Delta P_x} = \frac{\frac{120-100}{(120+100)/2}}{\frac{13-15}{(13+15)/2}} = -1.27, \text{ where } \% \Delta Q_x^d \text{ is the change in quantity (in \%) and}$$

$\% \Delta P_x$ is the change in price (in \%).

Q-8. Solution:A

Inserting the price of \$35 into the demand function, quantity demanded is calculated as

$$Q_{hm}^d = 400 - 5(35) = 225$$

At a price of \$35 per health club membership, the elasticity of demand is

$$\text{Price elasticity of demand} = (\Delta Q_{hm}^d / \Delta P_{hm}) \times (P_{hm} / Q_{hm}^d)$$

$$\text{Price elasticity of demand} = -5 \times (35/225) = -0.778$$

Q-9. Solution: B.

For most goods and services, the long-run demand is much more elastic than the short-run demand. For example, if gas prices rise, consumers cannot quickly change their mode of transportation, but will likely do so in the longer run.

Q-10. Solution: B.

The cross elasticity of demand is defined as the percentage change in quantity demanded divided by the percentage change in the price of a substitute or complement. If the cross elasticity of demand is positive, the goods are substitutes.

Q-11. Solution: C.

The negative sign on the coefficient for P_y indicates that X and Y have a negative cross-price elasticity of demand and are thus complements.

Q-12. Solution: A.

The cross-price elasticity is positive, indicating that as the price of Y increases, more of X is demanded, making X and Y substitutes.

Q-13. Solution: A.

From the demand function:

Solve for Q_{pr}^d :

$\Delta Q_{pr}^d / \Delta P_{pu} = 0.9$ (the coefficient in front of P_{pu})

$$Q_{pr}^d = 84 - 3.1 P_{pr} + 0.8 I + 0.9 P_{pu}$$

$$= 84 - 3.1(38) + 0.8(100) + 0.9(18)$$

$$= 62.4$$

At $P_{pr} = 38$, and $P_{pu} = 18$, the cross-price elasticity of demand

$$= (\Delta Q_{pr}^d / \Delta P_{pu}) (P_{pu} / Q_{pr}^d) = (0.9)(18 / 62.4) = 0.3$$

Q-14. Solution: B.

The cross-price elasticity of demand is defined as the percentage change in quantity demanded divided by the percentage change in the price of a substitute or complement. If the cross-price elasticity of demand is positive, the goods are substitutes. In this case, the 4 percent decline in quantity of pears is divided by the 3 percent decline in the price of apples, which is a positive number: $-4 / -3 = +1.33$.

Q-15. Solution: C.

A product's demand is elastic if demand increases by a greater percentage than the percentage price cut when prices are cut. For example, if a 1% price cut increases the quantity sold by more than 1%, total revenue increases and demand is said to be elastic.

Q-16. Solution: B.

A firm maximizes its revenue at the price (or quantity) where demand is unit elastic. This price or quantity is not the one that maximizes profit unless output can be increased at zero cost (no marginal costs).

Q-17. Solution: A.

In the case of normal goods, the income and substitution effects are reinforcing, leading to an increase in the amount purchased after a drop in price.

Q-18. Solution: B.

The overwhelming nature of the highly negative income effect over the substitution effect is applicable to Giffen goods only. Veblen goods are highly valued, high-priced "status" goods; consumers may tend to buy more of a Veblen good if its price rises.

Q-19. Solution: C.

A Giffen good is an inferior good. All inferior goods have a negative income effect (less is

purchased as income rises). While the substitution effect is always positive for all goods, for a Giffen good the income effect is so strong and so negative that it overpowers the substitution effect. The result is that as its price declines, less of it is purchased: This results in a positively sloped individual demand curve. Therefore, it is least likely that the substitution effect is negative.

Q-20. Solution: A.

Economic profit = Accounting profit – Total implicit opportunity costs

Where

Accounting profit = Total revenue – Total variable costs – Total fixed costs

Total opportunity costs = opportunity cost of capital + opportunity cost of labor

Total revenue	3,500 × \$1,100	\$3,850,000	# units × average revenue
Less Total variable costs	3,500 × \$720	\$2,520,000	# units × average variable cost
Less Total fixed costs		\$200,000	given
Accounting profit		\$1,130,000	
Opportunity cost:			
capital	\$1,500,000 × 0.12	\$180,000	Investment × Required return
owner's labor		\$130,000	Given
Total opportunity costs		\$310,000	
Economic profit		\$820,000	

Q-21. Solution: A.

Normal profit is the level of accounting profit such that implicit opportunity costs are just covered; thus, it is equal to a level of accounting profit such that economic profit is zero.

Q-22. Solution: C.

As long as marginal product is positive, total product is increasing. If the marginal product declines as additional units of labor are added, the rate of increase in total product is declining, i.e., increasing at a decreasing rate.

Q-23. Solution: A.

Under perfect competition, a firm is a price taker at any quantity supplied to the market, and AR = MR = Price.

Q-24. Solution: B.

In the short run, a company can vary the quantity of labor but the quantity of capital is fixed. In the long run, a firm can vary both the quantity of labor and the quantity of capital.

Q-25. Solution: C.

The optimal output level is 60 units as that level produces the highest profit:

Output (units)	Price (\$/unit)	Total Revenue (\$)	Total Costs (\$)	Profit (\$)
20	2,700	54,000	11,500	42,500
40	2,500	100,000	30,500	69,500
60	2,300	138,000	65,500	72,500
80	2,100	168,000	100,500	67,500
100	2,000	200,000	160,500	39,500

Q-26. Solution: C.

Under perfect competition, economic profits are maximized when marginal revenue equals marginal cost—in this case, marginal cost crosses \$10 per unit. Profits are maximized at 23 units of production because marginal cost is in excess of marginal revenue at 24 units.

Q-27. Solution: C.

A firm in a perfectly competitive environment with total costs equal to total revenue and marginal costs greater than marginal revenue is operating at the upper breakeven point. Therefore, it should decrease the level of production to enter profit territory.

Q-28. Solution: C.

Revenue-Cost Relationship	Short-Run Decision	Long-Term Decision
$TR \geq TC$	Stay in market	Stay in market
$TR > TVC$ but $TR < TFC + TVC$	Stay in market	Exit market
$TR < TVC$	Shut down production to zero	Exit market
where TR = Total Revenue;		
and TC = Total Costs; TVC = Total Variable Costs; TFC = Total Fixed Costs		
Hence, if the selling price is \$3.00, total revenue for all firms will be \$3.00/unit \times 900 units = \$2,700. Only firm X's variable costs are covered and it should continue operating, while firms Y and Z should immediately shutdown production.		

Q-29. Solution: B.

The profit-maximizing output will arise when $MR = MC$.

$$MR = 120 - 6 \times Q = MC = 3 \times Q^2 - 25 \times Q + 70.$$

$$\text{On reduction, this becomes: } 3 \times Q^2 - 19 \times Q - 50 = 0.$$

$$\text{Only with } Q = 25/3 \text{ will this equation be satisfied: } 3 \times (25/3)^2 - 19 \times 25/3 - 50 = 0$$

Q-30. Solution: C.

Shutdown is defined as a situation in which the firm stops production but still confronts the payment of fixed costs in the short run. In the short run, a business can operate at a loss as long as it covers its variable costs even though it is not earning sufficient revenue to cover fixed costs. If variable costs cannot be covered in the short run ($P < AVC$), the firm will shut down operations and simply absorb the unavoidable fixed costs.

Q-31. Solution: A.

The quantity at which average total cost is minimized does not necessarily correspond to a profit maximum.

Q-32. Solution: C.

Specialization by workers can increase their proficiency, leading to lower average costs when the firm is large enough to allow specialization.

A is incorrect. Supply constraints lead to higher resource prices, creating diseconomies.

B is incorrect. Duplication of product lines is a diseconomy.

Q-33. Solution: C.

The marginal cost decreases at low levels of output due to economies from greater specialization. However, at higher levels of production, it eventually increases because of the law of diminishing returns.

Q-34. Solution: A.

The characteristics of monopolistic competition include a large number of competitors, low pricing power, and the production of differentiated products (through advertising and other non-price strategies), but these still result in some pricing power. The ease of entry results in zero economic profits in the long run.

Q-35. Solution: C.

As the name implies, monopolistic competition is a hybrid market. The most distinctive factor in monopolistic competition is product differentiation. Although the market is made up of many firms that compose the product group, each producer attempts to distinguish its product from that of the others, and product differentiation is accomplished in a variety of ways.

Q-36. Solution: C.

Infinite elasticity reflects perfect elasticity of demand. This characterizes the elasticity of demand

for the products of a firm operating in a perfectly competitive market. If the firm increases prices, customers will go to another firm. However, the market demand is not perfectly elastic as it depends on substitutability with other products. Market elasticity will be greater than zero but less than infinite.

Q-37. Solution: A.

Advertising and product differentiation are most likely to have a positive impact on the economic profits of producers under monopolistic competition. The monopoly aspect of this structure arises from the ability to differentiate its product.

Q-38. Solution: C.

A firm in a monopolistic competition that introduces a new and differentiated product is able to better differentiate its products, and thus demand would be less elastic as close substitutes would be less readily available. Thus the firm would be able to increase price and enjoy economic profit in the short run.

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Q-39. Solution: A.

As prices decrease, smaller companies will leave the market rather than sell below cost. The market share of Aquarius, the price leader, will increase.

Q-40. Solution: C.

In the Nash model, each company considers the other's reaction in selecting its strategy. In equilibrium, neither company has an incentive to change its strategy. ThetaTech is better off with open architecture regardless of what SigmaSoft decides. Given this choice, SigmaSoft is better off with a proprietary platform. Neither company will change its decision unilaterally.

Q-41. Solution: B.

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

Q-42. Solution: A.

Second-degree price discrimination involves using the quantity purchased as the basis for the pricing of a particular good.

B is incorrect because first-degree price discrimination (perfect price discrimination) involves charging each customer their reservation price.

C is incorrect because third-degree price discrimination involves segregating customers by demographic or other traits.

Q-43. Solution: B.

The concentration ratio for the top three companies would be 76%:

A (32%) + B (23%) + G (15% + 6%).

Q-44. Solution: C.

If there are M firms in the industry with equal market shares, the HHI equals $1/M$. With 20 firms having equal shares, the $HHI = 1/20 = 0.05$.

Q-45. Solution: B.

Personal disposable income, which is equal to personal income minus personal taxes, is the most relevant measure of income for household spending and saving decisions.

C is incorrect. Taxable income does not include the personal income taxes individuals have to pay and hence is not the net income at their disposal.

A is incorrect. Personal earned income is personal income less unearned income (e.g., transfer payments, such as social insurance, unemployment, and disability payments). It is not the most relevant measure of a household's ability to save and spend because it excludes unearned income and also doesn't reflect household income after personal taxes.

Q-46. Solution: A.

Gross domestic product (GDP) can be defined in term of either output or income:

- It is the market value of all final goods and services produced within the economy in a given period of time (output definition) or, equivalently,
- It is the aggregate income earned by all households, all companies, and the government within the economy in a given period of time (income definition).

Q-47. Solution: C.

The sum-of-value-added method involves summing the value added (or income created) at each step in the production and distribution process.

Q-48. Solution: C.

The most important factor affecting economic growth is technology because it allows an economy to overcome the limits imposed by diminishing marginal returns. A country with innovations in the production process is least likely to face long-term GDP growth challenges compared with a country that relies on input growth, such as labor or natural resources.

Q-49. Solution: A.

Product	Quantity Produced in 2012 (1)	Quantity Produced in 2013 (2)	Product Unit Prices in 2012 (3)	Product Unit Prices in 2013 (4)	=(2)×(4)
X	351.0	352.0	13.3	13.8	4,857.6
Y	179.0	182.5		11.1	2,025.8
Nominal GDP in 2013 equals the sum of the last column:					6,883.4

$$\text{real } GDP_{2013} = \frac{\text{nominal } GDP_{2013} \times 100}{GDP_{\text{deflator}}} = \frac{6883.4 \times 100}{102.4} = 6722.1$$

$$\text{real } GDP_{2013} = P_{2012}^X \times Q_{2013}^X + P_{2012}^Y \times Q_{2013}^Y$$

$$6227.1 = (13.3 \times 352.0) + (P_{2012}^Y \times 182.5)$$

$$P_{2012}^Y = 11.2$$

Q-50. Solution: A.

A is correct. The fundamental relationship among saving, investment, the fiscal balance, and the trade balance is $S = I + (G - T) + (X - M)$. This form of the relationship shows that private saving must fund investment expenditures, the government fiscal balance, and net exports.

Q-51. Solution: B.

The IS curve represents combinations of income and the real interest rate at which planned expenditure equals income. Equivalently, it represents combinations such that

$$S(Y) = I(r) + (G - T) + (X - M)$$

Where $S(Y)$ indicates that planned saving is a (increasing) function of income and $I(r)$ indicates that planned investment is a (decreasing) function of the real interest rate. To maintain this relationship, an increase in government spending (G) requires an increase in saving at any given level of the interest rate (r). This implies an increase in income (Y) at each interest rate level—a rightward shift of the IS curve.

Unless the LM curve is vertical, the IS and LM curves will intersect at a higher level of aggregate expenditure/income. Since the LM curve embodies a constant price level, this implies an increase in aggregate expenditure at each price level—a rightward shift of the Aggregate Demand curve.

Q-52. Solution: A.

If stock prices rise, the aggregate demand curve will shift to the right (increase in AD) because of higher consumption (wealth effect), not lower investments.

Q-53. Solution: B.

An increase in the supply of human capital will increase the resource base and cause the SRAS to

shift to the right.

Q-54. Solution: B.

Higher aggregated demand (AD) and higher aggregated supply raise real GDP and lower unemployment, meaning employment levels increase.

Q-55. Solution: C.

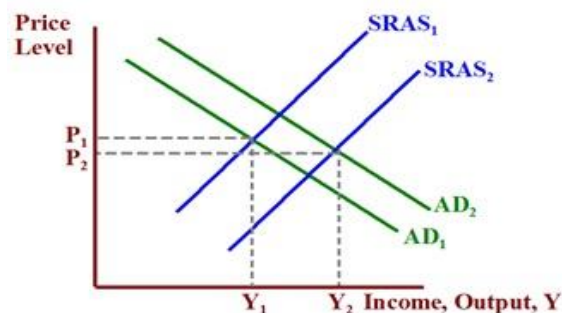
An increase in capacity utilization will cause an increase in aggregate demand through higher investment and will increase GDP (economic expansion).

Q-56. Solution: A.

In a country with a high level of income, as domestic income rises, private saving and investment will increase.

Q-57. Solution: C.

If both aggregate demand (AD) and aggregate supply (AS) increase, real GDP will increase but the impact on inflation is not clear unless we know the magnitude of the changes because an increase in AD will increase the price level, whereas an increase in AS will decrease the price level. If AD increases more than AS, the price level will increase. If AS increases more than AD, as depicted in the graph to the right, the price level will decline.



Q-58. Solution: A.

A boom in the stock market increases the value of financial assets and household wealth. An increase in household wealth increases consumer spending and shifts the aggregate demand curve to the right.

Q-59. Solution: C.

A recessionary gap arises when equilibrium GDP is below potential GDP. Decreased confidence lowers aggregate demand, which, in turn, leads to economic contractions. As demand declines, companies reduce their workforce and the unemployment rate rises.

Q-60. Solution: B.

The estimated equation is the standard Solow growth accounting equation. The intercept is the growth rate of total factor productivity.

Q-61. Solution: C.

C is correct. The total hours worked remained unchanged, and accordingly, the growth of the economy will not change.

A is incorrect because the training is expected to increase the productivity of the work force and accordingly will increase the growth of the economy.

B is incorrect because the net investment (gross investment less depreciated capital) is negative, which will decrease the growth of the economy.

Q-62. Solution: C.

Near the top of a cycle, sales begin to slow before production is cut, leading to an increase in inventories relative to sales.

Q-63. Solution: A.

Austrian economists see monetary policy mistakes as leading to booms and busts.

Q-64. Solution: A.

The participation ratio (or activity ratio) is the ratio of the labor force to total population of working age and the unemployment rate is the ratio of the number of unemployed to the labor force. Labor force is the numerator in the participation ratio and denominator in the unemployment rate. Therefore, assuming all else remains unchanged, an increase in the number of people included in the labor force would cause the participation ratio to increase and unemployment rate to decrease.

Q-65. Solution: A.

The unemployed are defined as those who are actively seeking employment but are currently without a job. Discouraged workers are without a job but have given up searching for work, so are not classified as being unemployed. A strengthening economy will lead discouraged workers to once again actively search for work; they will be reclassified as unemployed, and at least initially, the number of unemployed people will increase and the unemployment rate will rise.

Q-66. Solution: A.

For a given working-age population, a decline in the labor force participation rate (often caused

by an increase in discouraged workers) reduces the labor force. If the number of people employed remains the same while the labor force becomes smaller, the number of workers defined to be unemployed must be smaller and thus the unemployment rate lower.

The following example illustrates the direction of change:		
	Initial Case	After Change
Working-age population	100	100
Labor force = Employed + Unemployed	60 + 20 = 80	60 + 15 = 75
Labor force participation rate	80%	75%
	20/80 = 25%	15/75 = 20%
Labor force participation rate = Labor force/Working age population		
Unemployment rate = Unemployed/Labor force		

Q-67. Solution: B.

Unemployment rate = Unemployed / Labor force = 99/800 = 12.4%.

Q-68. Solution: C.

The inflation rate is measured as $[(\text{CPI this year} - \text{CPI last year}) / \text{CPI last year}] \times 100$. In this case, $[(252 - 246) / 246] \times 100 = 2.439\%$.

A is incorrect because it is the difference between the two CPI numbers.

Q-69. Solution: C.

Declines in short-run aggregate supply bring about stagflation, an economic situation with a combination of high inflation and high unemployment.

Q-70. Solution: A.

Cost-push inflation arises due to increases in costs associated with production: wages and raw materials prices.

Q-71. Solution: A.

The Paasche index uses the current product mix of consumption combined with the variation of prices. So for December, its value is:

$$(120 \times 1 + 50 \times 0.8) / (120 \times 0.9 + 50 \times 0.6) = (160/138) \times 100 = 115.9.$$

Q-72. Solution: A.

Both the Laspeyres index and the Paasche index ignore the substitution effect whereby people may substitute higher-priced goods or services with cheaper ones. This situation causes the

Laspeyres index (which uses the historical composition of a basket of goods) to be upward biased relative to the true inflation rate , while the Paasche index (which uses the current composition of the basket with cheaper options replacing more expensive ones) is downward biased relative to the true inflation rate . The Fisher index is a geometric mean of the Laspeyres and Paasche indices, and it will, therefore, display less of a substitution bias than the other two.

Q-73. Solution: A.

Demand–pull inflation depends upon the relationship between actual and potential GDP and industrial capacity utilization. The higher the rate of capacity utilization or the closer actual GDP is to potential, the more likely an economy will suffer shortages, bottlenecks, and a general inability to satisfy demand, and hence, price increases.

B is incorrect because stagflation occurs with a high level of unemployment and a slowdown in the economy, accompanied by high inflation: clearly not conditions of high capacity utilization.

C is incorrect because cost–push inflation is kicked off by either an increase in the money wage rate or an increase in the money prices of raw materials.

Q-74. Solution: A.

During the peak phase of the business cycle, capital spending expands rapidly, but the rate of growth of consumer and business spending slows down; in addition, during the peak, businesses slow their rate of hiring, but the unemployment rate continues to fall.

B is incorrect because in the late expansion phase businesses begin to order heavy equipment and engage in construction; in addition, businesses begin full time rehiring as overtime hours rise. The unemployment rate falls to low levels .

C in incorrect because in the contraction phase there are cutbacks in orders for new business equipment and other forms of capital spending. In addition, businesses first cut hours and freeze hiring, followed by outright layoffs and an increase in the unemployment rate.

Q-75. Solution: C.

A positive movement in a lagging indicator would most likely be used to confirm that an existing expansion is underway or has already occurred. Only a leading indicator would help identify or predict a future economic event.

A is incorrect because a positive move in a lagging indicator by itself is insufficient to indicate a positive expansion. However, confirmation would be required from positive changes in a coincident indicator to indicate expansion.

B is incorrect because a positive move in a lagging indicator is most likely identifying an upturn in economic activity that occurred in the past.

Q-76. Solution: C.

This effect makes unemployment rise more slowly as recessions start and fall more slowly as recoveries begin.

Q-77. Solution: B.

The functions of money include being a means of payment, acting as a medium of exchange, and acting as a unit of account. It does not require a double coincidence of wants, as barter does, because it is easily divisible and can act as a medium of exchange.

C is incorrect because the functions of money include acting as a unit of account.

A is incorrect because the functions/characteristics of money include store of wealth.

Q-78. Solution: B.

Central banks have three primary tools available to them: open market operations, setting the official policy rate, and reserve requirements.

A is incorrect because transfer payments are a fiscal policy tool.

C is incorrect because raising or lowering income taxes is a part of fiscal policy, not monetary policy.

Q-79. Solution: B.

An increase in the policy rate will likely raise the potential penalty that banks will have to pay if they run short of liquidity and thereby reduces their willingness to lend.

A is incorrect because commercial banks normally increase their base rates immediately (not gradually) following the announcement of an increased policy rate because they want to avoid the possibility of lending at rates lower than they might be charged by the central bank. Through open market operations, the central bank can essentially force banks to borrow from the central bank at the policy rate.

C is incorrect because an increase in the policy rate will likely lead to a tightening of the money supply and a higher penalty for liquidity shortfalls. As a result, commercial banks will expand their liquidity to avoid potential shortfalls.

Q-80. Solution: C.

C is correct. Selling government bonds results in a reduction of bank reserves and reduces their ability to lend, causing a decline in money growth through the multiplier mechanism and hence leads to a contraction in the economy.

A is incorrect. Central bank selling of bonds is not expansionary.

B is incorrect. Central bank selling of bonds will reduce the money supply through its impact on bank reserves, which will result in a higher, not lower, interest rate.

Q-81. Solution: C.

Quantitative easing (QE) is an “unconventional” approach to monetary policy and is operationally similar to open market purchase operations but conducted on a much larger scale. The additional reserves created by central banks in a policy of quantitative easing can be used to buy any asset. The idea was that this additional reserve would kick-start lending, causing broad money growth to expand, which would eventually lead to an increase in real economic activity.

Q-82. Solution: B.

Neutral rate = real trend rate + long-run expected inflation (target inflation rate) = 2% + 2% = 4%

The central bank’s monetary policy is being contractionary when its policy rate is above 4%.

Q-83. Solution: C.

Transfer payment programs represent fiscal, not monetary policy.

Q-84. Solution: B.

Expansionary policy increases government borrowing, which may divert private sector investment from taking place (resulting in an effect known as crowding out). A rise in capital gain tax rates is a form of contractionary fiscal policy. Rises in government spending on social insurance and benefits is a form of automatic stabilizer and not due to discretionary fiscal expansion.

Q-85. Solution: A.

A is correct. If tight fiscal policy is accompanied by easy monetary policy and low interest rates, the private sector will be stimulated and will increase as a share of GDP.

B is incorrect. If tight fiscal policy is accompanied by easy monetary policy and low interest rates, the private sector share of GDP typically will increase (not remain unchanged). An unchanged composition of aggregate demand, with the GDP shares attributable to the private and public sectors remaining stable, typically occurs in the context of parallel policy actions. That occurs with mutually reinforcing macroeconomic policies, either tight fiscal/tight monetary or easy fiscal/easy monetary.

C is incorrect. If tight fiscal policy is accompanied by easy monetary policy and low interest rates, the private sector share of GDP typically will increase (not decrease).

Q-86. Solution: C.

Deflation poses a challenge to conventional monetary policy because once the central bank has cut nominal interest rates to zero to stimulate the economy, they cannot cut them further.

Q-87. Solution: B.

The fiscal multiplier is

$$\text{The fiscal multiplier is } \frac{1}{1 - c(1 - T)}$$

where

c = marginal propensity to consume = consumption/disposable income

T = the tax rate

Assuming pre- tax income of \$100

Disposable income: $\$100 \times (1 - 0.3) = \70

Marginal propensity to consume: $\$60/\$70 = 0.857$

The fiscal multiplier: $1/[1 - 0.857(1 - 0.3)] = 2.499$

With government expenditure of \$1.3 billion, total incomes and spending will rise by \$1.3 billion $\times 2.499 = \$3.249$ billion

A is incorrect. It calculates the MPC from pre- tax income ($MPC = 0.60$) but applies the formula correctly: $1/[1 - c(1 - T)]$: $1/[1 - 0.60(1 - 0.3)] = 1.72$; resulting in an overall stimulus effect of $1.72 \times 1.3 = 2.24$.

C is incorrect. It uses G/MPC : $1.3/0.857 = 1.52$

Q-88. Solution: B.

As a country opens up to trade, it has a favorable impact on the abundant factor, and a negative impact on the scarce factor. This is because trade causes the output mix to change and therefore changes the relative demand for the factors of production. Increased output of the export product increases demand for the factor that is used intensively in its production, while reduced output of the import product decreases demand for the factor used intensively in its production. Because the export (import) product uses the abundant (scarce) factor intensively, the abundant factor gains relative to the scarce factor in each country.

Q-89. Solution: C.

A country has a comparative advantage if its opportunity cost for producing a product is less than the opportunity costs of its trading partners. Notice the cost of a table in units of chairs is lowest for Country A.

Country	Tables	Chairs	Comparative Advantage (Chairs/Tables)
A	50	70	1.4
B	30	50	1.67
C	$30 \times 1.12 = 34$	$70 \times 0.88 = 62$	1.82

Q-90. Solution: A.

As a country opens up to trade, the benefit accrues to the abundant factor, which is labor in Country A.

Q-91. Solution: B.

The loss in consumer surplus because of higher prices is represented by area E+F+G+H. This exceeds the gains from producer surplus (E) and government revenues on imports (G). Hence the net welfare effect to the country is a deadweight loss of $[E+F+G+H] - [E] - [G] = F+H$.

Q-92. Solution: A.

The imposition of a tariff will most likely increase domestic government revenue. A tariff is a tax on imports collected by the importing country's government.

Q-93. Solution: C.

$$GDP=C+S+T$$

$$GDP=C+I+G+NX$$

$$C+S+T=C+I+G+NX$$

$$NX=(S-I)+T-G$$

$$\Delta T=100$$

$$\Delta G=50$$

$$\Delta S= \Delta I = -25$$

$$\Delta NI=(-25 - (-25))+100 - 50= 50$$

A is incorrect because it uses the wrong sign before the parenthesis for government sector: $\Delta CA = -25 - (-25) - (100 - 50 - 0) = -50$.

B is incorrect because it uses the wrong sign on savings: $\Delta CA = 25 - (-25) + (100 - 50 - 0) = 100$.

Q-94. Solution: B.

The current account measures the flows of dividend.

Q-95. Solution: C.

Closely affiliated with The World Bank Group, the International Bank for Reconstruction and Development (IBRD) provides low or no-interest loans and grants to developing countries that have unfavorable credit or no access to international credit markets.

A is incorrect because this is a function of the IMF.

B is incorrect because this is a function of the World Trade Organization.

Q-96. Solution: B.

	Spot Rate	Expected Spot Rate in One Year	Appreciation: Expected/Spot – 1
USD/EUR	1.3960	1.3860	-0.72%
USD/CAD	1.0110	1.0300	1.88%
EUR/GBP	1.2850	1.2790	-0.44%
CAD/GBP	=	[(USD/EUR)×(EUR/GBP)]/(USD/CAD)	
CAD/GBP	1.7743	1.7211	-2.99%
GBP/CAD*	0.5636	0.5810	3.09%

* Canadian dollar is the base currency and the British pound is the price currency

$$\text{CADGBP} = [(USD/EUR) \times (EUR/GBP)] / (USD/CAD)$$

$$\text{Spot Rate of CAD/GBP} = (1.3960 \times 1.2850) / 1.0110 = 1.7743$$

$$\text{Expected Spot Rate of CAD/GBP} = (1.3860 \times 1.2790) / 1.0300 = 1.7211$$

To determine the appreciation of the Canadian dollar (CAD) relative to the British pound, the British pound (GBP) is the price currency and the Canadian dollar is the base currency, giving rise to the following calculation:

$$\frac{1/1.7211}{1/1.7743} - 1 = \frac{1.7743}{1.7211} - 1 = 3.09\%$$

Q-97. Solution: A.

The NZD/SGD cross-rate is $\text{NZD/USD} \times \text{USD/SGD} = 0.7668 \times 1.2580 = 0.9646$.

The traveler will receive: NZD0.9664 per SGD; $\text{NZD}0.9646 \times \text{SGD}7,200 = \text{NZD}6,945$.

Q-98. Solution: A.

Real exchange rate = Nominal spot exchange rate \times (CPI of the foreign country/CPI of the domestic country)

Change in the real exchange rate = $[(1 + \text{Change in exchange rate}) \times (1 + \text{Change in price level in foreign country})] / (1 + \text{Change in price level in domestic country}) - 1 = [(1 + 7.3\%) \times (1 - 3.8\%)] / (1 + 2.3\%) - 1 = 0.9\%$

B is incorrect because the change in the nominal exchange rate is not included: $(1 - 3.8\%) / (1 + 2.3\%) - 1 = -6\%$.

C is incorrect because the change in the price levels are inverted: $[(1 + 7.3\%) \times (1 + 2.3\%)] / (1 - 3.8\%) - 1 = 14.1\%$.

Q-99. Solution: C.

In the exchange rate quotation, USD/EUR, the US dollar is the price currency and the euro is the base currency. The USD/EUR is expected to increase from 1.3001 to 1.3456. This represents a 3.5%

appreciation of the euro against the dollar, i.e., a percentage change of $(1.3456/1.3001) - 1 = +3.50\%$.

A is incorrect because the USD/GBP is expected to decrease from 1.5805 to 1.5489. This represents a percentage change of $(1.5489/1.5805) - 1 = -2.00\%$. The British pound is expected to depreciate, not appreciate, against the US dollar by 2% because the USD/GBP exchange rate is expressed with the US dollar as the price currency.

B is incorrect because the appreciation of the euro against the US dollar can also be expressed as a depreciation of the US dollar against the euro. Inverting the exchange rate quote from USD/EUR to EUR/USD, so the euro is now the price currency, leads to $(1.3001/1.3456) - 1 = -3.38\%$. The US dollar is expected to depreciate, not appreciate, against the euro by 3.38%.

Q-100. Solution: C.

Covered interest arbitrage will ensure identical terminal values by investing the same initial amounts at the respective country's domestic interest rates:

GBP investment: $£1 \times (1 + 0.016025 \times 180/360) = £1.008013$

NZD investment: $NZ\$2.0979 \times (1 + 0.032875 \times 180/360) = NZ\2.13238

The forward rate is determined by equating these two terminal amounts:

NZD/GBP forward rate = $NZ\$2.13238 / £1.008013 = 2.115429$

Forward points = $(\text{Forward} - \text{Spot}) \times 10,000$
 $= (2.1155 - 2.0979) \times 10,000$
 $= 175.3 = 176 (\text{rounded})$

Q-101. Solution: B.

If the right side of the following equation is greater than the left, an arbitrage opportunity exists.

$$(1 + i_d) = \frac{S_{f/d}}{F_{f/d}} \times (1 + i_f)$$

The arbitrage profit is the right side of the equation minus the left side.

Right Side:

Step 1	$\text{BRL}400,000 \times (1/2.1131 \text{ AUD/BRL}) = \text{AUD}189,295$
Step 2	$\text{AUD}189,295 \times (1.03) = \text{AUD}194,974$
Step 3	$\text{AUD}194,974 \times 2.1392 = \text{BRL}417,088$

Arbitrage profit = $\text{BRL}417,088$ (right side above) – $\text{BRL}416,000$ (left side above) = 1,088.

Q-102. Solution: C.

In a CBS, the monetary authority has an obligation to maintain 100% foreign currency reserves against the monetary base. It thus cannot lend to troubled financial institutions. As long as the

country under a fixed-parity regime maintains its exchange peg, the central bank can serve as a lender of last resort.

Q-103. Solution: B.

With the currency board, the monetary authority is legally required to exchange domestic currency for a specified foreign currency at a fixed exchange rate. It cannot issue domestic currency without receiving foreign currency in exchange, and it must hold that foreign currency as a 100% reserve against the domestic currency issued. Thus, the country's monetary base (bank reserve plus notes and coins in circulation) is fully backed by foreign exchange reserves.

Q-104. Solution: B.

With a decline in economic activity and domestic inflation, the currency of the developing country would start to rise against the dollar. To protect the exchange rate target, the developing country's monetary authority will purchase foreign exchange reserves and sell its own currency. This will increase the domestic money supply, decrease short-term interest rates, and increase foreign exchange reserves.

A is incorrect. With a decline in economic activity and domestic inflation, the currency of the developing country would start to rise against the dollar. To protect the exchange rate target, the developing country's monetary authority will purchase foreign exchange reserves and sell its own currency. This will increase the domestic money supply, decrease short-term interest rates, and increase foreign exchange reserves.

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Q-105. Solution: C.

In the elasticities approach, changes in exchange rate policy will be a more-effective mechanism for trade balance adjustment if a country imports and exports products that trade in competitive markets, with good substitutes, and luxury products rather than necessities.

Q-106. Solution: A.

A devaluation of the domestic currency means domestic producers are cutting the price faced by their foreign customers. The impact on their unit sales and their revenue depends on the elasticity of demand. Expensive luxury goods exhibit high price elasticity. Hence, luxury car producers are likely to experience a sharp increase in sales and revenue due to the devaluation.

进阶题

Q-1. **Solution: C.**

If marginal cost is greater than average total cost, then increasing output will cause marginal, average variable, and average total costs to increase. Average fixed cost will continue to decrease as output increases.

Q-2. **Solution: C.**

Profits are maximized when $MR = MC$. For a monopoly, $MR = P(1 - 1/E_p)$. Setting this equal to MC and solving for P:

$$\$40 = P(1 - 1/1.5) = P \times 0.333$$

$$P = \$120$$

Q-3. **Solution: A.**

Both inventory—sales and unit labor costs are lagging indicators that decline somewhat after a peak. Real personal income is a coincident indicator that by its decline shows a slowdown in business activity.

Q-4. **Solution: A.**

Using the expenditures approach:

GDP = Consumer spending on goods and services + Business gross fixed investment + Change in inventories + Government spending on goods and services + Government gross fixed investment + Exports – Imports + Statistical discrepancy

Consumer spending on goods and services	875,000
Business gross fixed investment	286,000
Change in inventories	(68,000)
Government spending on goods and services	305,000
Government gross fixed investment	84,000
Exports	219,000
Imports	(250,000)
Statistical discrepancy	(2,800)
GDP	1,448,200

Q-5. **Solution: C.**

The fundamental relationship among saving, investment, the fiscal balance, and the trade balance is $S = I + (G - T) + (X - M)$. Given the levels of output and investment spending, an increase in saving (reduction in consumption) must be offset by either an increase in the fiscal

deficit or an increase in net exports. Increasing the fiscal deficit is not one of the choices, so an increase in net exports and corresponding increase in net capital outflows (increased lending to foreigners and/or increased purchases of assets from foreigners) is the correct response.

Q-6. Solution: B.

The slope of the short-run aggregate supply curve reflects the extent to which wages and other input costs adjust to the overall price level. Automatic adjustment of wages would mitigate the impact of price changes on profitability. Hence, firms would not adjust output as much in response to changing output prices—the SRAS curve would be steeper.

Q-7. Solution: C.

The sustainable rate of economic growth is a measurement of the rate of increase in the economy's productive capacity. An economy's sustainable rate of growth depends on the growth rate of the labor supply and the growth rate of labor productivity. Due to diminishing marginal productivity, an economy generally cannot achieve long-term sustainable growth through continually increasing the stock of capital relative to labor (i.e., capital deepening).

Q-8. Solution: B.

With a decline in economic activity and domestic inflation, the currency of the developing country would start to rise against the dollar. To protect the exchange rate target, the developing country's monetary authority will purchase foreign exchange reserves and sell its own currency. This action will increase the domestic money supply and decrease short-term interest rates.