Slide 1

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Economics

-- 2017

Instructor: Jie

Slide 2

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Brief Introduction

Topic weight:

SS1	Ethics & Professional Standards	15%
SS2 - SS3	Quantitative Analysis	12%
SS4 - SS5	Economics	10%
SS6 - SS9	Financial Reporting and Analysis	20%
SS10-11	Corporate Finance	7%
SS12	Portfolio Management	7%
SS13 - SS14	Equity Investment	10%
SS15 - SS16	Fixed Income	10%
SS17	Derivatives	5%
SS18	Alternative Investments	4%
	Weights:	100%

Slide 3

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Brief Introduction

Content:

➢ **Study Session 4: Microeconomics And Macroeconomics**
- Reading 14: Topics in Demand and Supply Analysis
- Reading 15: The Firm and Market Structures
- Reading 16: Aggregate Output, Prices, and Economic Growth
- Reading 17: Understanding Business Cycles

➢ **Study Session 5: Monetary and Fiscal Policy, International Trade, and Currency Exchange Rates**
- Reading 18: Monetary and Fiscal Policy
- Reading 19: International Trade
- Reading 20: Currency Exchange Rates

Slide 4

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Brief Introduction

Exam-importance ranking:

- Reading 14: Topics in Demand and Supply Analysis
- Reading 15: The Firm and Market Structures
- Reading 16: Aggregate Output, Prices, and Economic Growth
- Reading 18: Monetary and Fiscal Policy
- Reading 20: Currency Exchange Rates
- Reading 17: Understanding Business Cycles
- Reading 19: International Trade and Capital Flows

Brief Introduction

考纲对比：

➢ 与2016年相比，2017年的考纲总体变化较大。

➢ 微观经济学部分删掉很多考点，由 4个reading缩减到2个reading。

➢ 宏观经济学和国际经济学这两部分考纲几乎没有变化

Brief Introduction

有助于你理解经济学的几大原理：

➢ 人们面临交替关系

➢ 某种东西的成本是为了得到它而放弃的东西

➢ 理性人考虑边际量

➢ 人们通过比较成本与收益作出决策

➢ 市场通常是组织经济活动的一种好办法

➢ 一国的生活水平取决于它生产物品与服务的能力

➢ 当政府发行了过多货币时，物价上升

➢ 社会面临通货膨胀与失业之间的短期交替关系

Brief Introduction

学习建议：

➢ 本门课程知识点多，覆盖面广，记住经济学的重要原理将有助于你把这些知识点统一起来

➢ 如果经济学基础薄弱，在时间允许下，建议阅读 CFA协会原版教材，或曼昆《经济学原理》

➢ 听课前务必提前预习，课后务必及时复习

➢ 每完成一个章节的学习，应通过做题来检验学习成果

➢ 考试题型包括概念和计算，但考察重点偏向概念

Brief Introduction

学而时习之，不亦乐乎！

Demand, Substitution and Income Effect

Tasks:

➢ Compare Substitution and Income effects

➢ Distinguish between normal goods and inferior goods

Basic Concepts of Demand

Demand

➢ **Demand**: willingness and ability of consumers to purchase a given amount of a good or service at a given price.

➢ **Law of demand(需求定律)**: as price of a good rises, buyers buy less of it, and as its price falls, they buy more.

➢ **Demand function** : the relationship between quantity of demand and variables that have influence on demand

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

Basic Concepts of Demand

Demand Curve

➢ Graph of the inverse demand function
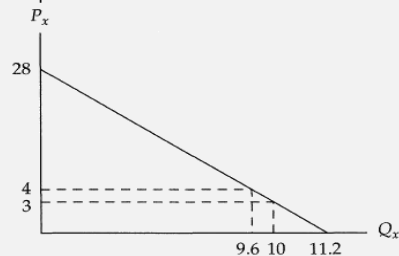
Consumer Surplus

Consumer Surplus(消费者剩余)

➢ The difference between the highest price consumers are willing to pay for each additional unit and the actual price they pay

➢ The area beneath the demand curve and above price
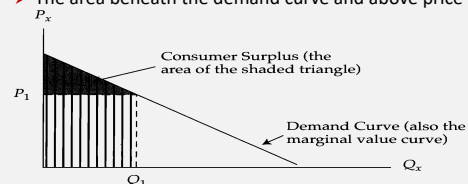
Substitution and Income Effect

Substitution Effect(替代效应)

➤ When the price of A decreases, the relative price of A against B will decrease, which results in an increase in the demand of A.

Income Effect(收入效应)

➤ Nominal income is constant, when the price of A decreases, consumer's real purchasing power will increase, which results in a change in the demand of A.

Normal and Inferior Goods

Normal goods (e.g. restaurant meals)

➤ the income effect reinforces the substitution effect, both leading to a negatively sloped demand curve.

Inferior goods (e.g. generic beverages)

➤ the income effect and the substitution effect work in opposite directions; the income effect tends to mitigate the substitution effect.

Giffen and Veblen Goods

Exceptions to the Law of Demand

➤ **Giffen goods (吉芬商品)**
  • Giffen goods are inferior goods
  • Demand decreases as price decreases, demand curve has positive slope.
  • Negative Income effect > Positive Substitution effect

➤ **Veblen goods (韦伯伦商品)**
  • Demand increase as price rises, goods are not inferior goods.
  • Demand curve has positive slope

Substitution and Income Effect

Substitution and income effect conclusion

When price down		Substitution Effect	Income Effect	Total Effect	Demand curve
Normal Goods		+	+	+	Downward
Inferior goods	Not Giffen	+	-	+	Downward
	Giffen	+	-	-	Upward

Practice

Which of the following statements best illustrates the difference between a Giffen good and a Veblen good?

A.The Giffen good alone is an inferior good.

B.The substitution effect for each is in opposite directions.

C.The Veblen good alone has a positively sloped demand curve.

Answer: A

Veblen goods are not inferior goods, whereas Giffen goods are. An increase in income for consumers of a Veblen good leads to an increase in the quantity purchased at each price. The opposite is true for a Giffen good.

Summary

➤ **Importance:** ☆☆

➤ **Content:**

- Definition of demand
- Consumer Surplus
- Substitution and Income effects
- Normal and Inferior goods

➤ **Exam tips:**

- 理解需求定义和消费者剩余
- 比较替代效应和收入效应
- 区别正常商品和低档商品，以及吉芬商品和韦伯伦商品

Demand Elasticity

Tasks:

➤ Calculate and Interpret price, income, and cross-price elasticity of demand

➤ Describe factors that affect each elasticity

Demand Elasticity

Price Elasticity of Demand(价格弹性)

➤ The responsiveness of the quantity demanded to a change in price.

$$E_{p_x}^d = \frac{\%\Delta Q_x^d}{\%\Delta P_x} = \frac{\dfrac{\Delta Q_x^d}{Q_x^d}}{\dfrac{\Delta P_x}{P_x}} = \left(\frac{\Delta Q_x^d}{\Delta P_x}\right)\left(\frac{P_x}{Q_x^d}\right)$$

➤ **Arc method(弧弹性):** Use average quantity and average price as the base for calculating the percentage changes.
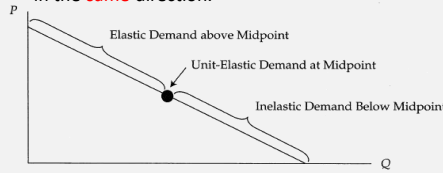
$$E = \left(\frac{\Delta Q}{Q_{avg}}\right) \bigg/ \left(\frac{\Delta P}{P_{avg}}\right)$$

Demand Elasticity

Price Elasticity of Demand (价格弹性**)**

➢ Total revenue is maximized when demand is unit elastic.
- When demand is elastic, price and total expenditure move in opposite direction.
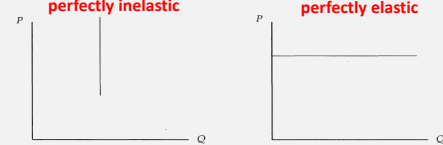- When demand is inelastic, price and expenditure move in the same direction.

Demand Elasticity

Price Elasticity of Demand (价格弹性**)**

➢ **Perfectly elastic(** 完全弹性**):** Demand curve is horizontal, elasticity is infinite.

➢ **Perfectly inelastic(** 完全不弹性**):** Demand curve is vertical, elasticity is zero.

Demand Elasticity

Factors that Influence Price Elasticity of Demand

➢ **Portion of income spent on a good**
- The larger the proportion of income spent on a good, the more elastic the demand for that good.

➢ **Availability and closeness of substitutes**
- If good substitutes are available, elasticity of demand tends to be greater.

➢ **Time**
- Elasticity of demand tends to be greater the longer the time period since the price change.

Demand Elasticity

Income Elasticity of Demand(收入弹性**)**

➢ The responsiveness of the quantity demanded to a change in income.

$$E_I^d = \frac{\%\Delta Q_x^d}{\%\Delta I} = \frac{\frac{\Delta Q_x^d}{Q_x^d}}{\frac{\Delta I}{I}} = \left(\frac{\Delta Q_x^d}{\Delta I}\right)\left(\frac{I}{Q_x^d}\right)$$

➢ Key points of income elasticity
- **Normal good(** 正常商品**):** positive income elasticity
- **Inferior good(** 低档商品**):** negative income elasticity

Demand Elasticity

Cross-Price Elasticity of Demand(交叉价格弹性)

➤ The responsiveness of the quantity demanded to a change
in price of substitutes or complements.

$$E_{p_y}^d = \frac{\%\Delta Q_x^d}{\%\Delta P_y} = \frac{\frac{\Delta Q_x^d}{Q_x^d}}{\frac{\Delta P_y}{P_y}} = \left(\frac{\Delta Q_x^d}{\Delta P_y}\right)\left(\frac{P_y}{Q_x^d}\right)$$

- **Substitutes(替代品):** positive cross-price elasticity
- **Complements(互补品):** negative cross-price elasticity

Summary

➤ **Importance:** ☆ ☆ ☆

➤ **Content:**
  - Price elasticity of demand
  - Income elasticity of demand
  - Cross-price elasticity of demand

➤ **Exam tips:**
  - 记住三种弹性的计算公式
  - 理解价格弹性与总收入的关系
  - 能根据收入弹性和交叉价格弹性的计算结果判断商品属性

Revenue, Cost, Product

Tasks:

➤ Calculate, Interpret, and Compare total, average,
and marginal revenue; total, average, fixed, and
variable costs; total, marginal, and average
product of labor

➤ Describe the phenomenon of diminishing
marginal product

Economic Profit

Opportunity Costs(机会成本)

➤ The foregone return from using resources for one action
versus another.

Explicit costs (accounting costs)(显性成本)

➤ Payments to non-owner parties for goods and services
that they supply to the firm.

Implicit costs(隐形成本)

➤ Opportunity costs of resources supplied to the firm by
its owners.

➤ **Total Economic costs = Explicit costs + Implicit costs**

Economic Profit

Economic Profit(经济盈利)

Accounting profit = total revenue - accounting costs (explicit costs)

Economic profit = total revenue – total economic costs

= total revenue - explicit costs - implicit costs

= accounting profit - implicit costs

= accounting profit - normal profit

➢ **Normal Profit(正常盈利):** The accounting profit that makes economic profit zero.

Revenue, Cost, Product

Summery of revenue

➢ **Total revenue (TR)(总收入):** Sum of individual units sold times their respective prices, TR = P * Q

➢ **Average revenue (AR)(平均收入):** Total revenue divided by quantity **,** AR = TR / Q = P * Q / Q = P

➢ **Marginal revenue (MR)(边际收入):** Change in total revenue divided by change in quantity, MR = AR = P

• The relationship between MR and price elasticity:

$$MR = P[1-\frac{1}{\varepsilon_P}]$$

Revenue, Cost, Product

Summery of cost

➢ **Total fixed cost (TFC):** Sum of all fixed expenses

➢ **Total variable cost (TVC):** Sum of all variable expenses

➢ **Total costs (TC):** TFC + TVC

➢ **Average fixed cost (AFC):** TFC ÷ Q

➢ **Average variable cost (AVC):** TVC ÷ Q

➢ **Average total cost (ATC):** TC ÷ Q or AFC + AVC

➢ **Marginal cost (MC)(边际成本):** Change in total cost divided by change in quantity.

Revenue, Cost, Product

Factors of production(生产要素)

➢ The inputs(投入量)to the production of goods and services.

• Land, labor, capital, materials

Production function(生产函数)

➢ Assume only consider capital and labor.

$$Q = f (K , L)$$

➢ **In the short-run:** Capital is fixed, only consider labor.

$$Q = f (L)$$

Revenue, Cost, Product

Summery of product

➢ **Total product (TP)(总产量):** Sum of the output from all inputs during a time period.

➢ **Average product (AP)(平均产量):** Total product divided by the quantity of a given input.

➢ **Marginal product (MP)(边际产量):** The amount of additional output resulting from using one more unit of input assuming other inputs are fixed.

Revenue, Cost, Product

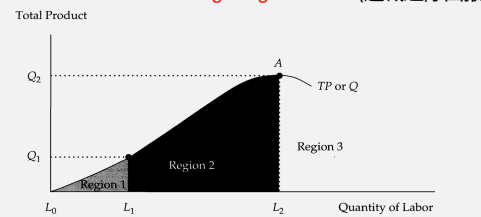**A Firm's Production Function**

➢ Increasing Marginal Return: the productivity of each additional unit of a resource —increases as additional units of that input are employed.

➢ Diminishin Marginal Return （递减边际回报）: when more and more workers are added to a fi xed capital base, the marginal return of the labor factor eventually decreases.

Revenue, Cost, Product

➢ Firm's production function has three distinct regions where both the direction of change and the rate of change in total product vary as production changes.

➢ Labor exhibits diminishing marginal return (递减边际回报).

Total Product

Q_2 .... A

TP or Q

Q_1

Region 3

Region 2

Region 1

L_0 L_1 L_2 Quantity of Labor

Summary

➢ **Importance:** ☆ ☆☆

➢ **Content:**

• Revenue, cost, and product

• Diminishing marginal return

➢ **Exam tips:**

• 理解收入，成本，和产量的相关概念

• 理解递减边际回报
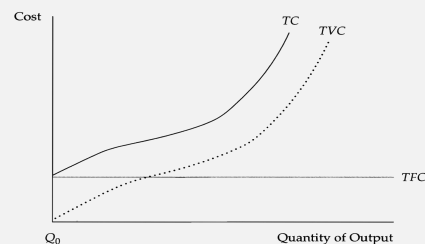
Slide 1

Cost Analysis in the Short and Long Run

Tasks:

➢ Describe how economies of scale and diseconomies of scale affect costs

Slide 2

Short-run cost curve

TC (total cost) = TFC (total fixed cost) + TVC (total variable cost)

Slide 3

Short-run average cost curve

ATC(average total cost) = AFC(average fixed cost) + AVC(average variable cost)

Slide 4
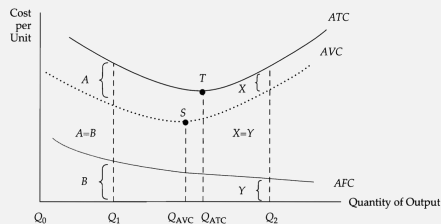
Short-run average and marginal cost curve

➢ MC intersects AVC and ATC at their minimum points.
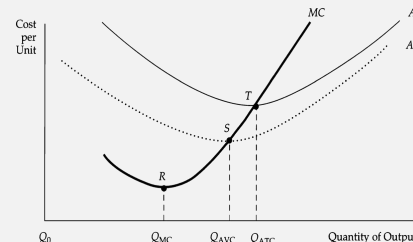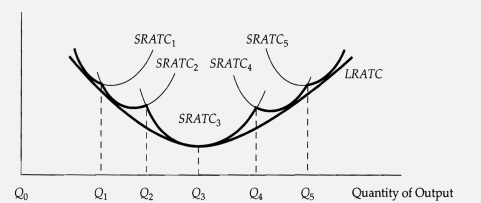
Cost Analysis in the Short and Long Run

Long-run average cost curve

➤ Q3 (minimum efficient scale, MES) is the scale the firm can produce at lowest average cost.

Cost Analysis in the Short and Long Run

Economies of scale (increasing returns to scale)(规模经济)

➤ A firm moves to lower cost structures when it grows in size.

➤ Reasons:

- Division of labor
- Being able to afford more-expensive, but more-efficient equipment
- Effectively reducing waste and lowering costs
- Making better use of market information and knowledge
- Discounted price on resources when buying larger quantities

Cost Analysis in the Short and Long Run

Diseconomies of scale (decreasing returns to scale)(规模不经济)

➤ A firm becomes less efficient with size.

➤ Reasons:

- Management inefficiency
- Overlap and duplication of business functions
- Higher resource prices due to supply constraints

Minimum efficient scale(成本最低有效规模)

➤ The minimum point on the LRATC(long run average total cost)

Summary

➤ **Importance:** ☆ ☆

➤ **Content:**

- Cost analysis in the short run
- Economies of scale and diseconomies of scale

➤ **Exam tips:**

- 理解和区别短期与长期的成本分析
- 掌握规模经济，规模不经济，和成本最低有效规模的概念

Profit Maximization

Tasks:

- Describe approach to determining the profit-maximizing level of output
- Determine and describe breakeven and shutdown points of production
- Distinguish between short-run and long-run profit maximization

Perfect Competition

Perfect competition(完全竞争)

- The individual firm has virtually no impact on market price (price taker)
- It is assumed to be a very small seller among a very large number of firms selling essentially identical products.
- The individual firm faces a horizontal demand curve .
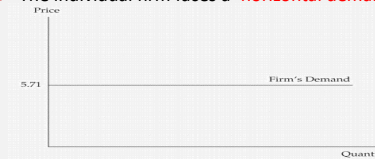
## Imperfect Competition

Imperfect competition(不完全竞争)

- The individual firm has enough share of the market and is able to exert some influence over price(price maker).
- A smaller number of firms in the market and in the extreme case only one firm.
- Firms face downward-sloping demand curve .
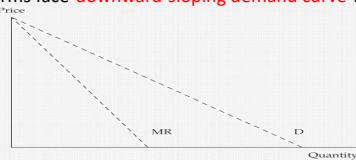
Profit Maximization

Profit maximization(盈利最大化)

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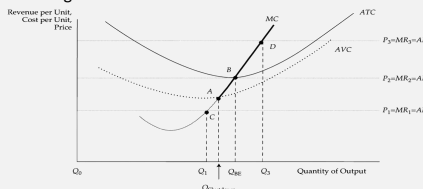- Marginal revenue (MR) equals marginal cost (MC).

MR=MC

Slide 1
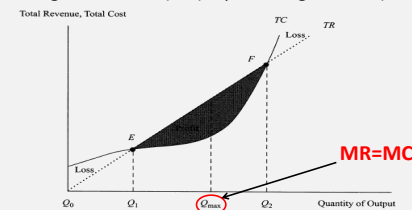
Shutdown and Breakeven Point

Shutdown and Breakeven Point(停业和盈亏平衡点)

➢ **AR ≥ ATC,** firm stay in the market.

➢ **ATC > AR ≥ AVC,** firm stay in market in the short run, but will exit the market in the long run.

➢ **AR < AVC,** firm shut down in the short run and exit the market in the long run.
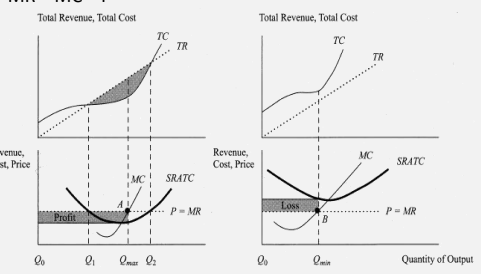

Slide 2

Shutdown and Breakeven Point

➢ **Short-run shutdown point** : When average revenue is less than average variable cost.

➢ **Long-run shutdown point** : When average revenue is less than average total cost.

➢ **Breakeven point(盈亏平衡点)**: When price, average revenue and marginal revenue equal average total cost.

Slide 3

Profit Maximization

Short-run equilibrium

➢ MR = MC = P
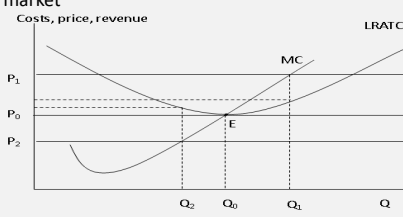

Slide 4

Profit Maximization

Long-run equilibrium

➢ MR = MC = P = ATC

➢ Firms earn zero economic profits in perfect competition market

Practice 1

The short-term breakeven point of production for a firm operating under perfect competition will most likely occur when:

A. price is equal to average total cost.

B. marginal revenue is equal to marginal cost.

C. marginal revenue is equal to average variable costs.

Answer: A

Under perfect competition, price equals marginal revenue. A firm breaks even when marginal revenue equals average total cost.

Practice 2

Under conditions of perfect competition, in the long run firms will most likely earn:

A. normal profits.

B. positive economic profits.

C. negative economic profits.

Answer: A

Competition should drive prices down to long-run marginal cost, resulting in only normal profits being earned.

Summary

➢ **Importance:** ☆ ☆ ☆

➢ **Content:**

  • Profit maximization(short-run and long run)

  • Shutdown and breakeven point

➢ **Exam tips:**

  • 必须掌握盈利最大化的条件，区分完全竞争市场的短期和长期盈利最大化

  • 必须掌握短期和长期的停业和盈亏平衡点