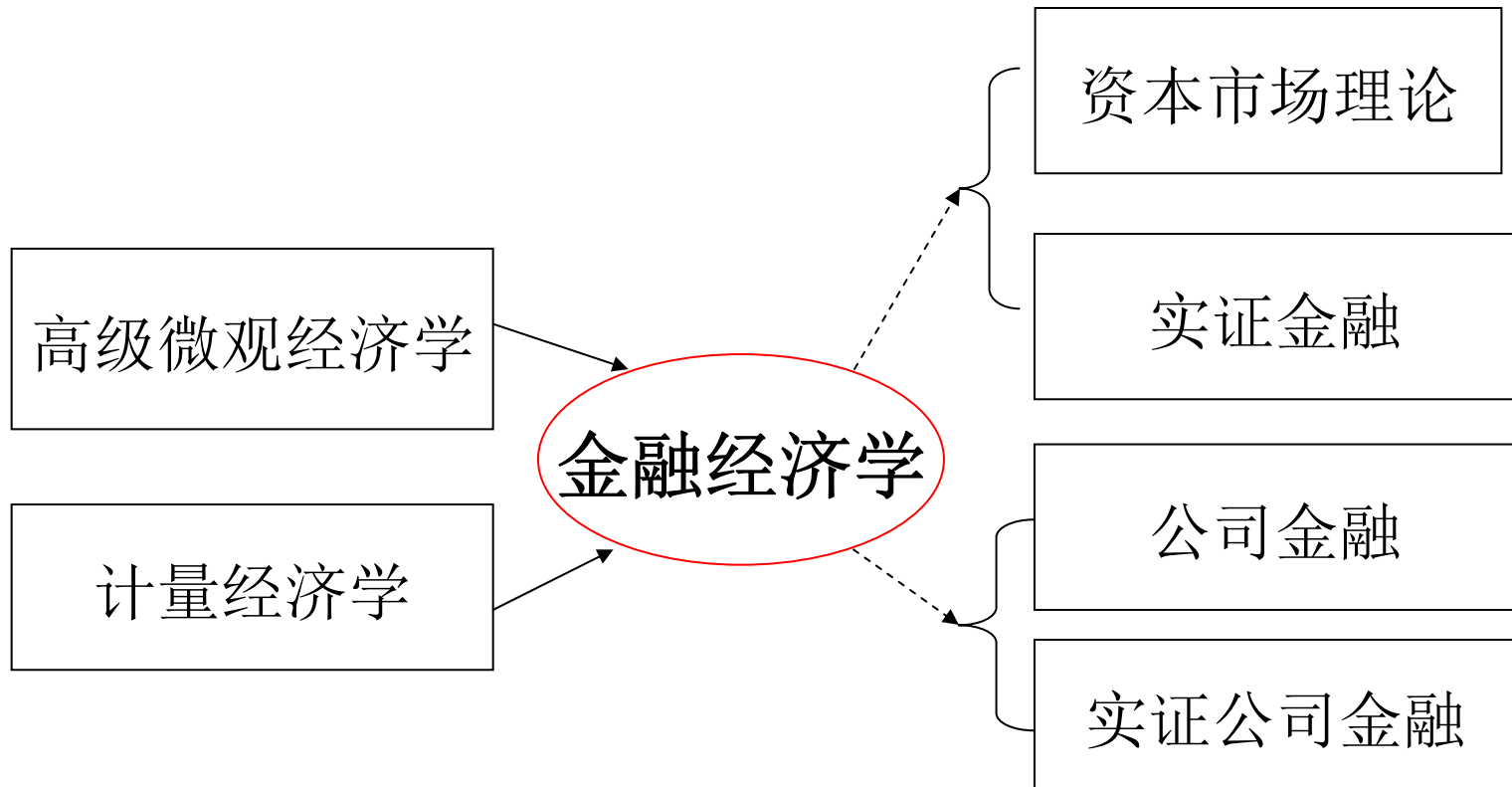


# 金融经济学

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中国人民大学出版社，2006

# 金融课程体系



# ManKiw's Principles of Economics

1. People face **tradeoffs**
2. The cost of something is what you give up to get it
3. **Rational** people think at the **margin**
4. People responds to incentives
5. **Trade** can make everyone better off
6. Markets are usually a good way to organize economic activity
7. Government can sometimes improve market outcomes
8. A country's standard of living depends on its ability to produce goods and services
9. Prices rise when the government prints too much money
10. Society faces a short-run tradeoff between inflation and unemployment

# Liu's Principles of Finance

1. People prefer more to less (to a point)
2. Rational people are **risk-averse**
3. People accept **fair** games
4. **Risk-neutral** prices all
5. Uncertainty means risk (variation, volatility)
6. High risk, **possible** high reward
7. Diversification reduces risk
8. Extremely hard to beat markets
9. Arbitrage is highly unlikely
10. *Cash-flow discount!*

# Financial Economics

用经济学的一般原理和方法分析  
金融所涉及的基本经济问题

假设（公理）、逻辑与数学：经济科学？

# Finance

study of how to allocate scarce resources over time — *Bodie & Merton*

- costs and benefits of financial decisions:
  1. spread out over **time**
  2. not known with certainty in advance by either the decision-maker or anybody else (**risk**)

# 金融学

- 核心问题：资源的有效配置
- 资源配置的效率：
  - ✓ 微观：经济参与者如何使用他们所拥有的资源来最优地满足他们的经济需要
  - ✓ 宏观：稀缺资源如何流向最能产生价值的地方
- 关注：金融市场在资源配置中的作用和效率

# 金融经济学vs金融学

- ✓ 区别不太明显
- ✓ **Financial economics: fancy for finance (Ross)**

王江：金融经济学

- 介绍现代金融学的理论基础
- 讨论基础金融理论（**Neo-classical theory of finance**）



# Modern Neoclassical Economics

## Samuelson & Arrow

- Marginal utility: subjective theory of value
- Rational person maximizes utility, firm maximizes profit: assumption
- Optimization: math as tools

# 本课程的目标

- 建立一个基本理论框架、基本概念和原理，并运用这个框架及相应的概念和原理分析：
  1. 个体参与者的金融决策，尤其是交易决策
  2. 个体参与者的决策如何决定金融市场的整体行为，尤其是金融资产的价格
  3. 金融资产的价格如何影响资源的实际配置

# 金融理论的发展阶段

- Pre-1950s, 传统金融经济学（属于经济学）
- 1950s, 现代金融学的诞生
- 1950—1980, 现代金融学发展的黄金时期：  
投资组合理论、期权定价
- 1980—：市场微结构、行为金融、广义效用

# 传统金融经济学

- 1654年Pascal & Fermat不确定性下的决策
- 1900年Bachelier价格差正比于时间差方根
- 1930年Fisher separation theorem
- 1934年Graham: Security Analysis
- 1936年凯恩斯liquidity preference
- 1938年Williams: dividend discount model
- 1944年冯·诺依曼与摩根斯坦期望效用

# 悲剧英雄 Louis Bachelier

- his 1900 dissertation anticipated much of standard financial theory: random walk of market prices, Brownian motion and martingales (**all before both Einstein and Wiener!**)

[cepa.newschool.edu/het/profiles/bachelier.htm](http://cepa.newschool.edu/het/profiles/bachelier.htm)

LOUIS BACHELIER ON THE CENTENARY OF  
THÉORIE DE LA SPÉCULATION



The photo was taken in Le Havre, France, on August 17, 1858 by professional photographer M. Caccia, 126 Blvd. de Strasbourg.

# John Maynard Keynes, 1883-1946

- The General Theory of Employment, Interest and Money, 1936

most influential economist  
of the 20th century



# 现代金融理论

- 1959 Arrow-Debreu 证券
  - Debreu, 1959, Theory of Value: An Axiomatic Analysis of Economic Equilibrium
  - Nobel, 1972, 1983



# General Equilibrium Theory

## Arrow-Debreu

- Consumer: maximize utility
- Firm: maximize profit
- Each agent behaves optimally
- Each market clears



# 现代金融理论（续）

- **1952年 投资组合理论**
  - **Markowitz, 1952, Portfolio Selection, *Journal of Finance***
  - **25 years old grad**
  - **Nobel, 1990**



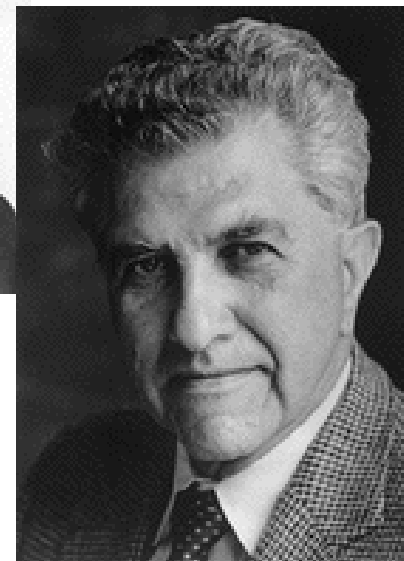
# 现代金融理论（续）

- 1958年Tobin's Separation Theorem (**mutual** fund)
  - Tobin, 1958, Liquidity Preference as Behavior Towards Risk. *Review of Economic Studies*
  - Nobel, 1981



# 现代金融理论（续）

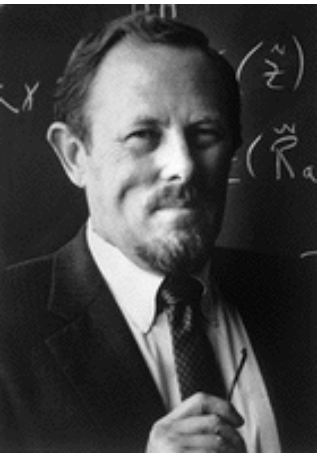
- **1958年MM定理**
- Modigliani, Miller, 1958, The Cost of Capital, Corporation Finance and the Theory of Investment, American Economic Review
- Nobel, 1985, 1990



# 现代金融理论（续）

## ■ 1964年 CAPM

- **Treynor**, 1961, Market Value, Time, and Risk (from MM)
- **Sharpe**, 1964, Capital Asset Prices: A Theory of Market Equilibrium under Conditions of Risk, *Journal of Finance*. (Nobel, **1990**)
- Lintner, 1965, The Valuation of Risk Assets and the Selection of Risky Investments in Stock Portfolios and Capital Budgets, *Review of Economics and Statistics*. (from MM)



# 现代金融理论（续）

## ■ 1965年有效市场假说（EMH）

- Fama, 1965, Behavior of Stock-Market Prices, *Journal of Business*
- 1959, Roberts, 价格变化随机; Osborne, 价格百分比变化随机
- 1965, Samuelson, 信息随机

# 现代金融理论（续）

## ■ 1973年期权定价

- Black, Scholes, 1973, The Pricing of Options and Corporate Liabilities, *Journal of Political Economy*.
- Merton, 1973, Theory of rational option pricing, *Bell J. Econ. & Mgmt. Sci.*
- Nobel, 1997



# Fischer Black (1938-1995)

- Black model, approximation
- Black-Derman-Toy model
- Black-Litterman model
  
- The CAPM man: **MM funds** only
  
- Cox: Fischer is the only real genius I've ever met in finance.



# 现代金融理论（续）

- 1973年 Intertemporal CAPM
  - Merton, 1973, An Intertemporal Capital Asset Pricing model, *Econometrica*.
- 1979年 partial equilibrium 资产定价
  - Breeden, 1979, An Intertemporal Asset Pricing model with stochastic consumption, *Journal of financial economics*.
- 1978年 离散时间 general equilibrium 资产定价
  - Lucas, 1978, Asset Prices in an exchange economy, *Econometrica*.



# 现代金融理论（续）

- 1976年 Risk-neutral pricing
  - Cox, Ross, 1976, A survey of some new results in financial options pricing theory. *Journal of Finance*
  - Cox, Ross, 1976, The valuation of options for alternative stochastic processes. *Journal of Financial Economics*
- 1979年 鞅表示理论
  - Harrison, Kreps, 1979, Martingales and Arbitrage in Multiperiod Securities Markets, *Journal of Economic Theory*

# 现代金融理论（续）

## ■ 1976年 APT

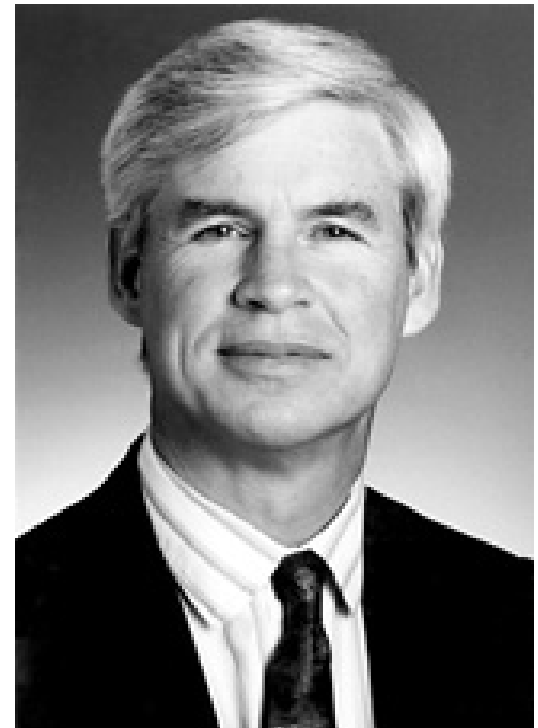
- Ross, 1976, The Arbitrage Theory of Capital Asset Pricing, *Journal of Economic Theory*

## ■ 1979年 二叉树期权定价

- Cox, Ross, Rubinstein, 1979, Option Pricing: A Simplified Approach, *Journal of Financial Economics*

# 现代金融理论（续）

- 1982年ARCH
  - Engle, 1982, Autoregressive Conditional Heteroskedasticity With Estimates of the Variance of UK Inflation. *Econometrica*
  - Nobel, 2003



# 现代金融理论（续）

- 1987—89年 完全市场动态随机优化控制-静态状态空间表示等型
  - Cox, Huang, 1989, Optimal consumption and portfolio policies when asset prices follow a diffusion process. *Journal of Economic Theory*
  - Karatzas, Lehoczky, Shreve, 1987, Optimal portfolio and consumption decisions for a small investor on a finite horizon. *SIAM J. Control & Optimization*
- 1985年 连续交易下的效率
  - Duffie, Chi-fu Huang, 1985, Implementing Arrow Debreu Equilibria by Continuous Trading of Few Long-Lived Securities, *Econometrica*

# 现代金融理论（续）

- Vasicek, 1977 利率模型
- Ho, Lee, 1986
- 1992, HJM: Bond Pricing and the Term Structure of Interest Rates: A New Methodology for Contingent Claims Valuation. *Econometrica*
- Duffie, Singleton, 1999, Modeling Term Structure of Defaultable Bonds. *Review of Financial Studies*
- BGM, 1997, LIBOR 市场模型
- Longstaff, Schwartz (2001). Valuing American options by simulation: A simple least-squares approach. *Review of Financial Studies*

# 现代金融理论（续）

- 1979—1990年代，非对称信息分析方法的运用及公司财务理论的发展
- 1990年代，行为金融理论的发展

# Informational Asymmetries

Akerlof, Spence, Stiglitz (Nobel, 2001)

- Adverse selection: ex-ante (hidden type)
- Moral hazard: interim (hidden action)
- Costly state verification: ex-post

# Behavioral Economics

Kahneman & Smith (Nobel, 2002)

- prospect theory: Kahneman-Tversky, 1979
- experimental: Smith
  
- Allais paradox (Nobel 1988)
- Ellsberg paradox



# 群星灿烂: 26 US Jewish Nobel

- Norbert Wiener, John von Neumann
- George Akerlof, Kenneth **Arrow**, Robert Aumann, Gary Becker, Robert Fogel, Milton **Friedman**, John Harsanyi, Daniel Kahneman, Leonid Kantorovich, Lawrence Klein, Paul Krugman, Simon Kuznets, Wassily Leontief, Harry **Markowitz**, Eric Maskin, Robert **Merton**, Merton **Miller**, Franco **Modigliani**, Roger Myerson, Leonid Hurwicz, Paul **Samuelson**, Myron **Scholes**, Reinhard Selten, Herbert Simon, Robert Solow, Joseph Stiglitz

# 参考书

- Bodie, Kane, Markus (2004). *Investments*
- LeRoy, Werner (2001). *Principles of Financial Economics*
- Pliska (1997). *Introduction to Mathematical Finance*
- Duffie (1996). *Dynamic Asset Pricing Theory*