

Asset Pricing

Fudan University

Department: School of Economics

Course Code	ECON130259		
Course Title	Asset Pricing		
Credit	4	Credit Hours	72
Course Nature	<input type="checkbox"/> Specific General Education Courses <input type="checkbox"/> Core Courses <input type="checkbox"/> General Education Elective Courses <input type="checkbox"/> Basic Courses in General Discipline <input type="checkbox"/> Professional Compulsory Courses <input checked="" type="checkbox"/> Professional advanced Courses <input type="checkbox"/> Others		
Course Objectives	Course Objectives: After you finish the course, you are supposed to <ul style="list-style-type: none">● Master the idea of equilibrium pricing and arbitrage free pricing● Grasp the application of stochastic dynamic programming in finance models● Understand the characteristics of discrete time model and continuous time model● Learn about the latest development of asset pricing		
Course Description	The aim of this course is to introduce students to the modern theory of asset pricing, portfolio theory and derivatives pricing. Topics covered include (i) no-arbitrage, Arrow-Debreu prices, and equivalent martingale measures, (ii) security structure and market completeness, (iii) mean-variance analysis, Beta pricing, CAPM, and (iv) derivatives pricing.		
Course Requirements: Prerequisites: The undergraduate level background in calculus and probability theory			
Teaching Methods: Lecture, presentation, group discussion			

Instructor's Academic Background:

陈思好，复旦大学经济学院助理教授。2019 年获得香港科技大学经济学博士。主要研究领域集中于国际宏观经济学和国际金融学。其工作论文多次入选国际顶级经济学/宏观经济学会议包括 ASSA Meetings, Society of Economic Dynamics (SED) Annual Conference 等。担任 Journal of International Economics, Pacific Economic Review 匿名审稿人。

Members of Teaching Team				
Name	Gender	Professional Title	Department	Responsibility

Course Schedule**Module 1: Introduction**

Market Efficiency: Role of Financial Markets and Empirical Regularities

Module 2: One-Period Models

- 2.1. Setup
- 2.2. Security structure and market
- 2.3. Options, Forwards, Futures, Swaps

Module 3: Pricing in the One-Period Model

- 3.1. LOOP, No Arbitrage
- 3.2. Basics of Forward and Option Pricing
- 3.3. The four Pricing Formulas:
 - Arrow-Debreu (State) Prices/Stochastic Discount Factor/Martingale Pricing

Module 4: Risk Measures and Preferences

- 4.1. Stochastic Dominance, Expected Utility, Portfolio Choice
- 4.2. Optimality, Representative Agent Analysis
- 4.3. Mean Variance Analysis, Beta-Pricing, CAPM

Module 5: General Equilibrium, Efficiency and Aggregation

- 5.1. Pareto Efficiency
- 5.2. The Welfare Theorems

Module 6: Sharpe Ratio Bounds, Equity Premium Puzzle

Hansen-Jagannathan Bound Theorem

Midterm test

Module 7: Mean-Variance Analysis and CAPM

- 7.1. Traditional derivation
- 7.2. Modern derivation: projections and pricing kernel
- 7.3. Testing CAPM
- 7.4. Black-Litterman

Module 8: Multi-Period Models

- 8.1. Setup
- 8.2. Dynamic Market Completeness
- 8.3. Ponzi Schemes
- 8.4. "Rational Bubbles"

Module 9: Fixed Income, Futures, Swaps

- 9.1. Bonds, Bond Duration, Term Structure of interest rates
- 9.2. The Expectations Hypothesis
- 9.3. Futures, Repos, Swaps

Module 10: Option Pricing

- 10.1 . Black-Scholes Option Pricing Formula
- 10.2 . Basics of Dynamic Optimization
- 10.3 . Equilibrium Models: ICAPM, Hedging Demand

Module 11: Multiple Factor Pricing Models (APT, FF)

Conditional versus unconditional beta

Module 12: Friction Finance

- 12.1 . Market Efficiency – Asymmetric Information
- 12.2 . Liquidity Asset Pricing, Funding Liquidity Risk, Violation of LOOP

Final Exam

The design of class discussion or exercise, practice, experience and so on:

The course program consists of weekly regular classes and question sessions.

Class: Twice per week, 75 minutes/time, and doing of assignments

Question sessions: Once per week, 45 minutes/time

During each term there will be two mid-term exams and one final exam.

If you need a TA, please indicate the assignment of assistant:

Yes, a TA is needed and will help the lecturer with the attendance, organization of group discussion.

Grading & Evaluation (Provide a final grade that reflects the formative evaluation process):

Class Performance: 10%

Homework: 20%

Midterm test: 30%

Final Exam : 40%

Closed book; a silent battery operated calculator is suggested.

Passing grade: 60, below 60 = fail

Teaching Materials & References (Including Author, Title, Publisher and Publishing time):

A less technical introduction to the course can be found in

Danthine and Donaldson , "Intermediate Financial Theory", Elsevier,2005

A more advanced treatment of the material can be found in

Kerry Back, "Asset Pricing and Portfolio Choice Theory", Oxford University Press, 2010

Stephen F. LeRoy and Jan Werner, "Principles of Financial Economics", Cambridge University Press (optional), 2001

The elements of the course that focus on derivative pricing are based on

Robert L. McDonald, "Derivatives Markets", Addison Wesley, 2009

or

John C. Hull, "Options, Futures and Other Derivatives" Prentice Hall, 2011

Supplementary reading

George Pennacchi, "Principles of Financial Economics", Addison Wesley, 2007

Yvan Lengwiler, "Microfoundations of Financial Economics: An Introduction to General Equilibrium Asset Pricing", Princeton University Press, 2004

Jakša Cvitanić and Fernando Zapatero, "Introduction to the Economics and Mathematics of Financial Markets", MIT Press (optional), 2004

Materials

2.1 Stephen F. LeRoy and Jan Werner(2001) Ch3;

Yvan Lengwiler(2004) Ch2&3

2.3 John C. Hull(2011) Ch1-6;

Robert L. McDonald(2009) Ch1-8;
Jakša Cvitanić and Fernando Zapatero(2004) Ch1&2
4.1 Yvan Lengwiler(2004) Ch6
Stephen F. LeRoy and Jan Werner(2001) Ch21-28
4.2 Yvan Lengwiler(2004) Ch4;
Stephen F. LeRoy and Jan Werner(2001) Ch8,9,11,12;
4.3 Stephen F. LeRoy and Jan Werner(2001) Ch17-19
Danthine and Donaldson(2005) Ch4,5.2-5.5, 6;
Jakša Cvitanić and Fernando Zapatero(2004) Ch5.1,13.1-13.2
Stephen F. LeRoy and Jan Werner(2001) Ch14.4
10.1 John C. Hull(2011) Ch7-10;
Robert L. McDonald(2009) Ch9-13
11 Stephen F. LeRoy and Jan Werner(2001) Ch20;
Jakša Cvitanić and Fernando Zapatero(2004) Ch14