Financial Economics

1 Introduction

LEC, SJTU

2024 Summer

Lecturer

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  - Associate Professor, Fudan SOE
  - Ph.D in Finance, PKU
- Research Field: Behavioral Finance, Household Finance, FinTech
- Teaching: Advanced Economics, Financial Risk Management, Probability and Statistics
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Overview

- Course Schedule
  - 11:20 - 14:00 Mon - Fri, Jun. 24 - Jul. 12
  - Office Hour: E-mail or After each lecture
- Textbook
  - Microfoundations of Financial Economics (2006) by Yvan Lengwiler
  - Financial Economics (1997) by Jürgen Eichberger and Ian R. Harpe
- Course Website
  - http://www.jiangjj.fun/teaching/2024-summer-fe
- TA
  - SUN Wanyi 孙婉怡

Grading

- The final grade consists of:

Attendance	12%
Participation	8%
Homework	15%
In-class Mid-term Quiz	20%
Final	45%

Schedule

Week	Lecture	Readings
Week 1	Introduction / Contingent claim economy	Chapter 2 of Lengwiler (2006)
	Asset economy	Chapter 3 of Lengwiler (2006)
	Asset economy	Chapter 3 of Lengwiler (2006)
	Risky decisions	Chapter 4 of Lengwiler (2006)
	Utility in financial market	Chapter 2 & 3 of Eichberger and Harper (1997)
Week 2	Risk Allocation Principles	Chapter 2 & 3 of Eichberger and Harper (1997)
	In-Class Quiz	
	Static finance economy	Chapter 5 of Lengwiler (2006)
	Static finance economy	Chapter 5 of Lengwiler (2006)
	Dynamic finance economy	Chapter 6 of Lengwiler (2006)
Week 3	Dynamic finance economy	Chapter 6 of Lengwiler (2006)
	Empirics and the puzzles	Chapter 7 of Lengwiler (2006)
	Adapting the theory	Chapter 8 of Lengwiler (2006)
	Adapting the theory	Chapter 8 of Lengwiler (2006)
	Final	

About Homework

- We have two homework assignments, mainly based on problem sets from the textbook
- Assignments need to be submitted to the TA in Monday's class on the second and third weeks

About Quiz and Final Exam

- In-Class Quiz
  - 2 hours closed-book exam
  - Similar to the homework problem
  - Covering Lecture 1 - 4
  - July 2nd 11:20-13:20
- Final Exam
  - 2 hours closed-book exam
  - Covering the whole course
  - July 12th 11:20-13:20

What is Financial Economics About?

- **Finance**: How prices are determined in financial markets? How risk and capital is allocated across agents and across the economy?
- Individual agents make decisions about savings and investments with regard to the risk they can bear
- If markets work well, risk and capital will be allocated to projects that get the best risk-return profile
- Finance theory is also useful for policy analysis to assess welfare gains and losses
- *Origins of Finance*: Draws on General Equilibrium Theory, Macroeconomics, and Microeconomic theory

What is General Equilibrium About?

- Describes the behavior of an economy, focusing on the optimal behavior of each member of the set of agents in the economy and looks for a point of mutual compatibility
- Underlying assumptions:
  - Agents do not interact with each other directly but through anonymous markets on which only prices are posted
  - Agents are small relative to the market i.e. there is perfect competition
- Such models are called Walrasian in honour of Leon Walras who was the first to formulate such a model
- The economy is in **equilibrium** if
  - at a certain price, each individual buys or sells the optimal quantities (given his tastes and possibilities) of all commodities
  - the total supply of each commodity equals the total demand for it

Modern General Equilibrium Theory

- Modern GE theory-follows Arrow and Debreu (1954)- allows for a large number of goods and diverse preferences of individuals
- Establishes the conditions that guarantee the existence of an equilibrium
- Develops the properties of equilibrium allocations –the famous Welfare Theorems
- Welfare Theorems- show that market equilibrium allocations and socially efficient allocations are, under some conditions, equivalent
- Radner (1972) built financial markets into these models, making general equilibrium theory applicable to finance

Macroeconomic Origins

- Keynesian macro-models do not feature individual agents or dynamics explicitly- focus on interaction between different aggregate variables- lack the individual optimization perspective
- Led to the rational expectations revolution in economics- to construct dynamic models of aggregate economic fluctuations based on individual decisions together with shocks of some sort (mainly to technology)
- Also led to the models with one agent and one good to get easily computable equilibria (Real Business Cycle model): computable dynamic stochastic general equilibrium (DSGE) models

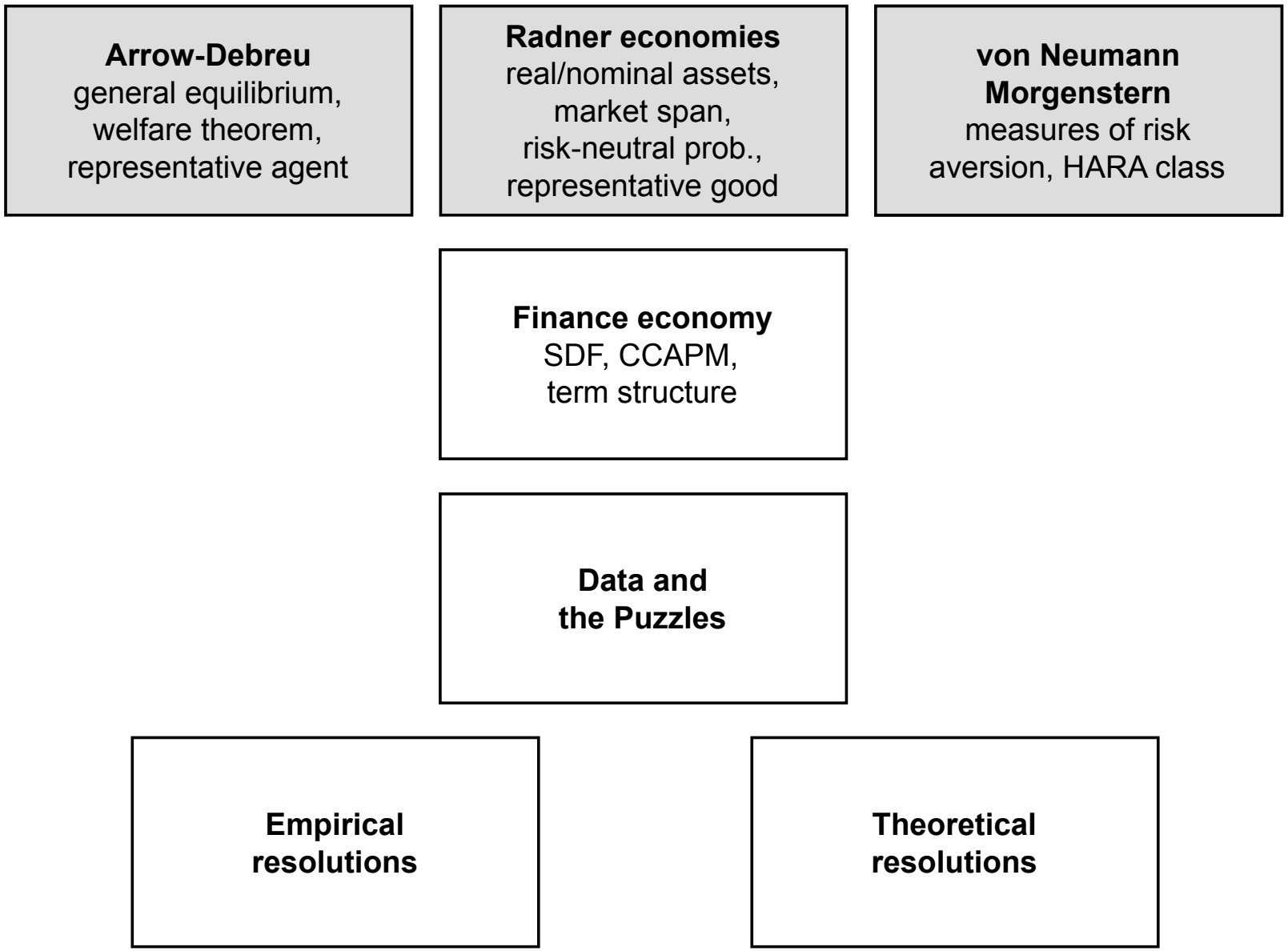
Origins of Finance

- Finance started as a field of business administration.
- Markowitz (1952): Offered a simple decision rule for investing in financial assets (mean-variance optimization)
- Sharpe and others: Emphasis on the determinants of asset prices-showed that only that part of the risk is priced in equilibrium that covaries with the market (e.g. the CAPM)
  - the market portfolio must be mean–variance efficient
  - every agent must hold a mixture of the risk-free asset and the market portfolio (*two-fund separation theorem*)

Macro-Finance

- Traditional GE theory: Describes properties of equilibrium allocations, existence, and efficiency of equilibria
- Macroeconomics: Focuses on time series or dynamical properties of aggregate economic activity
- GE theory focusing on financial assets is equilibrium asset pricing theory
- Stiglitz (1970) connected finance closely with economic theory, later leads to Lucas (1987) tree model and Breeden CCAPM.
- Finance economy: the combination of Arrow–Debreu–Radner general equilibrium theory and von Neumann–Morgenstern expected utility theory
  - One-agent, one-good, exchange economy
  - Equilibrium prices are the focus
  - Models study how changes of stochastic properties of endowments affect equilibrium prices of different kinds of securities

Big Picture


Arrow-Debreu
general equilibrium,
welfare theorem,
representative agent
Radner economies
real/nominal assets,
market span,
risk-neutral prob.,
representative good
von Neumann Morgenstern
measures of risk
aversion, HARA class
Finance economy
SDF, CCAPM,
term structure
Data and the Puzzles
Empirical resolutions
Theoretical resolutions

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	Final	