Financial Economics 2019 Spring

Lec 1 Introduction 2019.2.18

1.1 What is financial economics (FE)?

What is finance?

- allocation of financial assets
  - Time
  - Uncertainty

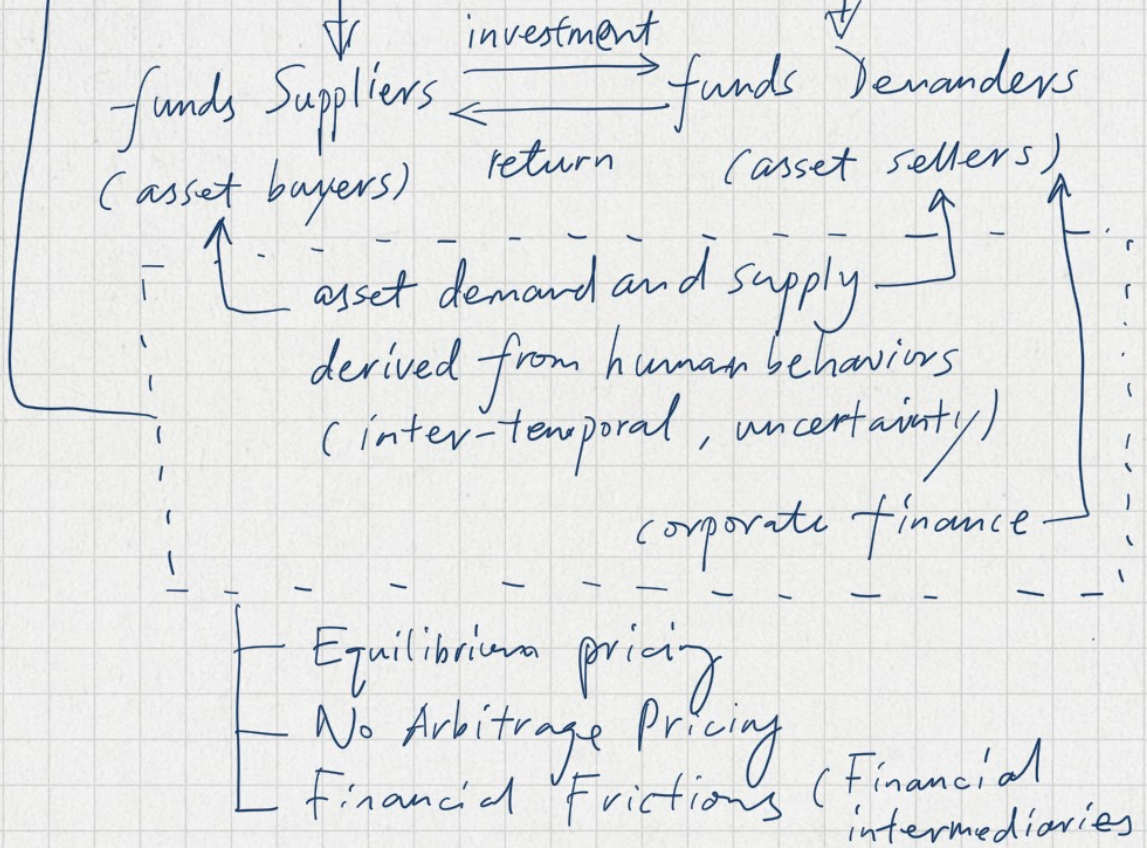
} future

claims of future economic values.

Financial Economics vs. { monetary economics / public finance

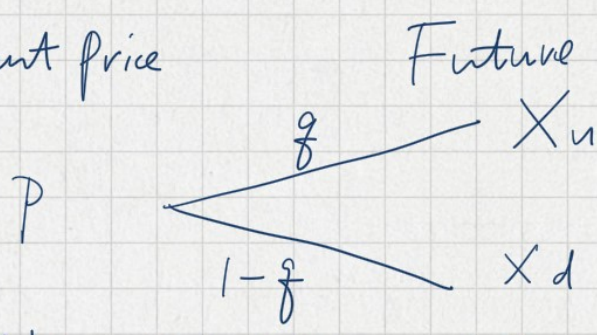
1.2 Logic Framework

Market efficiency? → Behavior Finance



1.2.1 Assets and Rate of return on assets

- assets : claims of future economic values



- Asset Pricing $(X_u, X_d) \Rightarrow P$?

  How to forecast X_u, X_d ? — A much broader topic than I-E !

- Rate of return

$$r_u = \frac{X_u}{P} - 1 \quad , \quad r_d = \frac{X_d}{P} - 1$$

$$\begin{aligned} E(\tilde{r}) &= q r_u + (1-q) r_d \\ &= q\left(\frac{X_u}{P} - 1\right) + (1-q)\left(\frac{X_d}{P} - 1\right) \\ &= \frac{1}{P}\left[q X_u + (1-q) X_d\right] - 1 \\ &= \frac{E(\tilde{X})}{P} - 1 \end{aligned}$$

- Asset Pricing $(X_u, X_d) \Rightarrow E(\tilde{r})$?

  higher $P \longleftrightarrow$ lower $E(\tilde{r})$

- BOX 1-1 : Whose rate of return is higher, "good" assets or "bad" assets ?

1.2.2 Equilibrium Pricing (Absolute Pricing)

(1)

asset price ← demand and supply ← human behavior (under uncertainty / risk)

- What is risk?
- How to measure risk? (high, low)
- How to measure people's altitude towards risk? (risk aversion, risk neutral, risk loving)
- How people behave under risk?

Mean-Variance
CAPM
C-CAPM

Box 1-2: St. Petersberg paradox

Nicolaus Bernoulli

$$\frac{1}{2}\times 1 + \frac{1}{4}\times 2 + \cdots + \frac{1}{2^n}\times 2^{n-1} = \frac{1}{2} + \frac{1}{2} + \cdots = +\infty$$

Box 1-3: • 张P (more risk averse) vs. 小乙

Stock A (low return, low risk)

Stock B (high return, high risk)

risk-free asset

$$\left(\frac{\text{holding of A}}{\text{holding of B}}\right)_{\text{张P}} > \left(\frac{\text{holding of A}}{\text{holding of B}}\right)_{\text{乙}} ?$$

P_{steel}: $\frac{1}{2}$ → 25, $\frac{1}{2}$ → 15

$P_{pharmaceutical}$: 40, 0

P_{steel} vs. $P_{pharmaceutical}$?

1.2.2 No-Arbitrage Pricing (Relative Pricing)

(2)

Loop: Law of One Price

Arbitrage: violation of Loop ⇒ riskfree profit

P(hamburg coke set) = P(hamburg) + P(coke)

Replication → Hedge

Box 1-4: Pricing of a magic box.

$r_{box} = 2\%$ (riskfree)

$r_{market} = 3\%$

option to get 2%. (derivative)

- N.A. pricing (risk-neutral pricing, martingale method)
- Absolute pricing vs. Relative pricing
- Equilibrium ⇒ N.A. (NOT vice versa)

1.2.3 Financial Frictions and Financial Contract

- Frictions (mainly informational frictions)

in Corporate Finance

investment, financing, dividend.

capital structure

in Financial Intermediaries

banks,

financial crisis

Box 1-5: Will internet eliminate financial intermediaries?

1.2.4 Market efficiency and behavior finance

Fama vs. Shiller 2013 Nobel Prize

Behavior Finance { Irrationality / Limited Arbitrage

Box 1-6: Can we find a 10-dollar bill on the ground?

Grossman - Stiglitz paradox

Box 1-7: Behavior bias

- Over-confidence
- Disposition effect (related to mutual funds in A-share market)

1.3 Financial Economics in Economics

- Finance vs. Economics
  - Equilibrium → Economics
  - N.A. Theory (more like engineering)
- Economists vs. Investors
  - positive (be) → Investors
  - normative (ought to be)

1.4 Teaching Objectives

- Financial theories and methods
- Financial vocabulary
- Financial Thinking

Lec 2 Overview of Financial Markets

2.1 Functionalities of financial markets

Trading financial assets (financial instruments, securities)

- Price discovery
- Providing liquidity
- Lower transaction costs

2.2 Classification of financial markets

- equity market vs. fixed-income market
- primary vs. secondary
- spot vs. derivative (futures, options)
- exchange market vs. OTC market (centralized bidding)

2.3 Main financial institutions

- depository (banks)
- non-depository (investment banks, funds ...)
- regulators (central bank, CSRC, CBRC ...)

2.4 China's financial markets

Dominated by { banks
indirect finance (bank loans)
debt financing