Introduction

Investments

Introduction

- This class is about how to make investment decisions.
  - ↪ Suppose that you recently inherited $ 1,000,000.
  - ↪ After going on a (mild) spending spree, you decide to save $ 800,000.
  - ↪ A friend (Susan) approaches you with her investment strategy, which she claims has been making money since she was in college.
  - ↪ Would you invest your money with Susan?
- What factors play a role in your decision?

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1. How much money has Susan made on average?
2. Did she consistently make money? How often did she lose?
3. When did Susan tend to lose money?
4. How easy is it to liquidate the investment?
5. How well do you trust Susan? Do you know her strategy?
6. Will she charge you fees?

What other options do you have? How does her strategy compare to those options?

- We need a way to compare apples and oranges.

Introduction

- What if you had *multiple* investment options? In addition to investing with Susan,
  - ↪ you can keep your money in a savings account.
  - ↪ you can invest through mutual funds.
  - ↪ you can buy ETFs.
- Which one(s) should you pick?
- The right choice will depend on the context

Introduction

- Would the decision be affected if you were an asset manager,
  - ↪ for a university endowment?
  - ↪ for a major pension fund?
  - ↪ for a major hedge fund?
- What if you were a company CFO,
  - ↪ of a major airline?
  - ↪ of a major oil company?
- An individual
  - ↪ about to retire
  - ↪ at the beginning of her career?

One should always divide his wealth into three parts: a third in land, a third in merchandise, and a third ready to hand.

Rabbi Issac bar Aha, 4 century AD.

Quantitative versus qualitative answers

- Ultimately, the decision of how much to invest is a *quantitative* decision
- First, we need a common language, or a way to compare apples and oranges:
  - ↪ Stocks are riskier than bonds; but *how much riskier*?
- Second, we need to know *how much to invest* in each asset.
- Nevertheless, numbers can also be very dangerous. We need to often take a step back and remind ourselves what the assumptions are behind the answer that we got.

This class

- This class will will help you think about investment decisions in a systematic way.
- The aim is to provide
  - ↪ a general framework to think about the previous issues.
  - ↪ the necessary *tools* to implement this framework in practice.
- In the process, we will talk about some high level concepts:
  1. Market efficiency
  2. Equilibrium Pricing
  3. Absence of Arbitrage
- ...but only to the extent that they affect our optimal decisions.

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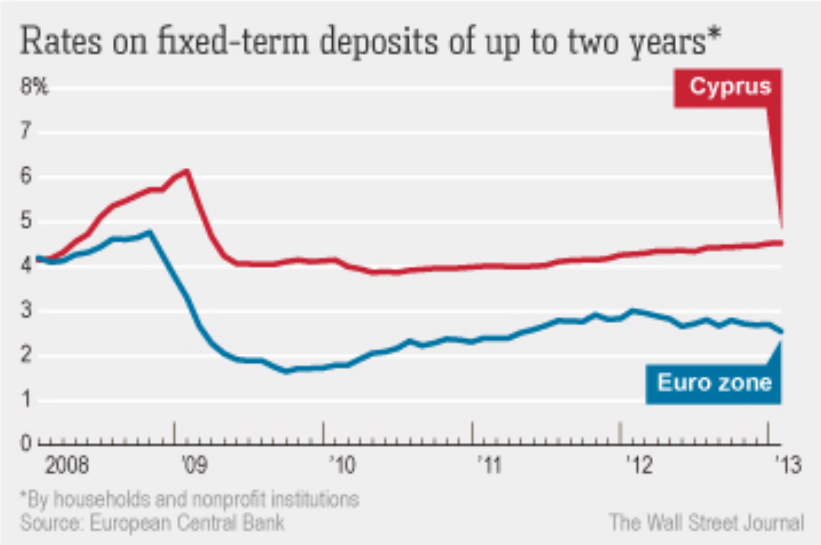
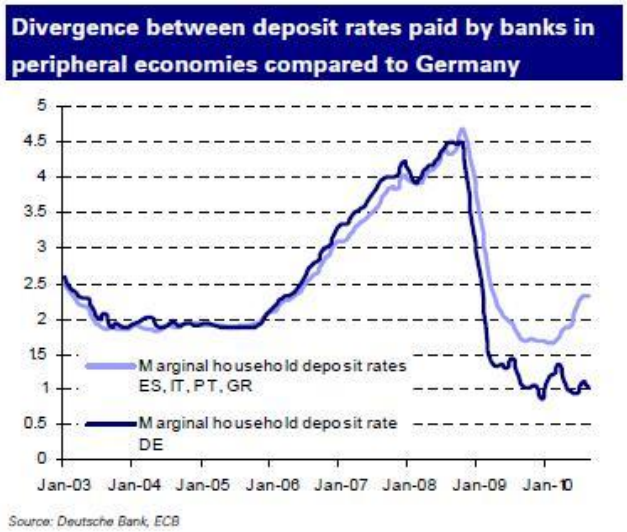
This class, the short version

- There is a tradeoff between risk and reward





- The rest of the class is going to be about characterizing the tradeoff more explicitly, and defining risk and reward

Who is this course for?

- This class will be *particularly* helpful for students who wish to work in the investment industry
  1. Sales and Trading
  2. Equity Research
  3. Investment Management

  ...but all students will benefit.
- I expect you to be familiar with
  1. Statistics DECS-433 and DECS-434.
  2. Finance I (FINC-430-0) and Finance II (FINC-441-0)
- This class is about concepts not mathematical formulas, however we need the formulas to understand the concepts.

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Mechanics: Who am I?

Office: Jacobs 433
Email: d-papanikolaou@kellogg.northwestern.edu

- I graduated from MIT in 2007 with a PhD in Financial Economics.
- My research focuses on the areas of Asset Pricing and Macroeconomics.
- I will (subtly) insert some of my research into the class material.

Mechanics: Teaching Assistants

Hao Sun	hao.sun@kellogg.northwestern.edu
Binying Liu	b-liu@kellogg.northwestern.edu
Review Sessions:	TBA

- Your TAs are your first point of contact.
- Naveen will run review sessions every week.

Mechanics: Course Materials

- What you need
  1. Lecture Notes
  2. Course Packet
  3. Case Studies and Homework Assignments
  4. Textbook: Bodie, Kane and Marcus “Investments”
- You are responsible for printing the lecture notes and bringing them to class.

Mechanics: Case studies

- There will be a case almost every week.
- I expect you to
  - ↪ Read the case before class.
  - ↪ Answer a set of questions about the case as part of your homework assignment.
  - ↪ Be prepared to discuss it at the beginning of the next class.

Mechanics: Homework

- There will be a homework every week.
- You can do the homework in groups.
  - ↪ Maximum group size is **three**.
- Homework is due at the beginning of each week.
- You can submit your homework
  - ↪ via the submit homework link on Blackboard
- Late homework is not accepted under **any** circumstances.

Mechanics: Grading

- The course grade is based on the formula:

$$X_H + X_C + \max[\, 0.3 \cdot X_M + 0.3 \cdot X_F \;, 0.6 \cdot X_F]$$

where

$$\begin{aligned} X_H &= \text{Homework (20 pts)} \\ X_C &= \text{Class Discussion (20 pts)} \\ X_M &= \text{Midterm (100 pts)} \\ X_F &= \text{Final (100 pts)} \end{aligned}$$