Session 1: Introduction

Foundations of Finance
Fall 2025

Outline

- Practical Information about the class:
- Overview of class:
  - Outline of topics covered
  - The axioms underlying finance
  - The main insights of finance
- Some words about fintech

General information

- Class Times:
  - Monday (17:00 - 18:20 p.m.)
  - Wednesday (17:00 - 18:20 p.m.)
- Office Hours:
  - Monday (16:00 - 17:00 p.m.) & Wednesday (16:00 - 17:00 p.m.)
  - Or by appointment
- Prof. Luis Garvía,
  - 28 sessions to get to know each other
  - lg139@nyu.edu (questions)
  - +34 671 035 094 (appointments )
  - https://www.linkedin.com/in/garvia/

General information

WhatsApp Group:

https://chat.whatsapp.com/HhXIzngS4beKAam9zkFGCw

Resources

- Recommended Readings:
  - Bodie, Kane and Marcus (BKM), "Essentials of Investments,"
  - Ross, Westerfield, and Jordan (RWJ), "Essentials of Corporate Finance,"
- The Web Page on NYU BrightSpace will contain:
  - the slides
  - the problem sets and their solutions
  - the handouts,
- Calculators:
  - You need a calculator for problems and exams (e.g. ln, exp).
  - Having a financial calculator is an advantage, but not an absolute requirement.
  - Start familiarizing yourself with the calculator ASAP.
  - Exams will be solvable with standard calculator…

Problems

- Solving lots of problems is *crucial*!
- 6 problem sets
  - Hand in individual assignments
  - You may collaborate, but you need to state it at the top
  - Checked, not graded
- Suggested problems from BKM on class

We will deal with so many languages: English / Spanish, Maths, Accounting, Excel, Programming… and Finance itself. Practice is the only way.

Co-curricular activities

Students are required to submit the **21st November** a report, including a photographic report.

- The report must be uploaded as a post in the BrightSpace Forum (1 hour per response/post).
- Additionally, each student is required to comment on one or two reports from other students (1 hour per response/post).

1) The student must have participated in at least one of the following activities from the "Mapping Madrid" series:
   - Money Heist, with Professor Luis Garvía - Friday, September 5th (2 hours)
   - Food Cultures and the City's Markets, with Professor Ellen Gordon - Saturday, September 8th (2 hours)
   - One Person's Trash is Another Person's Treasure: Exploring El Rastro (Flea Market), with Professor Luis Garvía - Sunday, September 7th (2 hours)
2) Visit to the Madrid Stock Exchange - **Friday, October 31st** (4 hours)
   From 11:00 to 15:00.
   Palacio de la Bolsa. Plaza de la Lealtad, nº 1. 28014-Madrid.

Grades

• Participation	5%
• Co-curricular activities	10%
• Problem sets	10%
• Midterm	30%
• Final	45%

Participation

- During Class:
  - Interactive!
  - Slides and white board – take notes!
- Before class: readings (see Syllabus, see last slide).
- After class: Review your notes, handouts, and readings

Midterm & final

- Cumulative
- Format:
  - Closed book
  - 1 sheet of notes plus formula sheet
  - Multiple choice questions and short problems from problem sets, lectures and text

Prerequisites

- Some knowledge of the basics of finance, although the course is self-contained.
- Because of the nature of modern practical finance, the course is heavily quantitative:
  - Calculus and algebra in class and in problems.
  - Statistics: mean, variance, correlation and regression analysis (read **Statistics Review**).
- Knowledge of how to use a calculator and excel
- Stay up to date: FT, WSJ, Economist

The Course Outline

1. Market Structure: Financial Instruments and Markets
2. Performance Measures: Time Value of Money
3. Valuing Financial Assets:
   - Portfolio Selection
   - The Capital Asset Pricing Model
   - Market Efficiency, Frictions, and Anomalies
   - Equity Valuation
   - Arbitrage
   - Fixed Income Securities
   - Derivative Securities

Learn to add

Return and risk

Can we predict the future?

Stocks

Bonds

Derivatives

Options | Futures | SWAPs

Finance is Based on Simple Axioms

1. Investors prefer more to less
   - Example: $100 is better than $10.

2. Investors are risk averse
   - Example:
     A) $1 million for sure
     B) 50/50 gamble $0/$2 million

3. Money paid in the future is worth less than the same amount today
   - Example: $100 today is better than $100 next year

4. Financial markets are competitive; no arbitrage
   - Example: There should not be a stock that people agree is under-priced

Price vs. Value

- Are price and value the same thing?
  - Price: Is objective (there is only one)
  - Value: Is subjective (each one has its own)
- Equilibrium models, efficient markets and no arbitrage hypothesis.
- Rational investors vs. irrational investors
- It is reasonable apply valuation models based on equilibrium when talking about technology?

How much would you pay for Whatsapp?

WhatsApp Free For All Users After App Removes 99 Cent Subscription Fee

Facebook $22 Billion WhatsApp Deal Buys $10 Million in Sales

Bloomberg 2014

Nobel-Prize-Winning Insights


Harry Markowitz


William Sharpe


Myron Scholes


Robert Merton


Eugene Fama


Lars Hansen


Robert Shiller

- Harry Markowitz (1990): Optimal portfolio selection.
- William Sharpe (1990): Capital Asset Pricing Model. In equilibrium, riskier assets have higher returns
- Robert "Bob" Merton, Myron Scholes (1997): No arbitrage and pricing of derivatives
- Gene Fama (2013): efficient markets
- Robert Shiller (2013): irrational markets
- Lars Hansen (2013): statistical methods
- Jean Tirole (2014): market power and regulation
- Richard Thaler (2017): nudge theory
- Nordhaus and Romer (2018): Climate change and Tech
- Banerjee, Duflo and Kremer (2019): poverty


Jean Tirole


Richard Thaler

Some words about Fintech

- 1452 – Printing press
- 1661 – First bank note (200 years later)
- 1776 – Adam Smith (100 years later)

  …. Ricardo (1817), Malthus (1798), Ramsey (1928), Young (1934), Schumpeter (1934), Keynes (1936),Hayek (1941), Domar (1946)…

- 1990 – Internet
- 2008 – Bitcoin or 2020 Digital Yuan (30 years)

Conclusions

- Things happen quickly: do not relax and enjoy
- Simple ideas become complex by aggregation. The more you work at the beginning the easier it will be at the end.

- Next class we will continue working on simple ideas.

Next Session Assignments

- Read the syllabus
- Skim BKM Chap 1-3