

Syllabus, BEM 103 **Introduction to Finance**

Tuesday and Thursday, 13:00 to 14:25, Location to be announced

Textbook: Stephen A. Ross, Randolph W. Westerfield, and Jeffrey Jaffe, (RWJ)
Corporate Finance, 10th edition, McGraw-Hill Irwin

Instructor

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Teaching Assistants

to be announced

In a famous passage, Keynes said ...

The ideas of economists and political philosophers, both when they are right and when they are wrong, are more powerful than is commonly understood. Indeed, the world is ruled by little else. Practical men, who believe themselves to be quite exempt from any intellectual influences, are usually slaves of some defunct economist.... Madmen in authority, who hear voices in the air, are distilling their frenzy from some academic scribbler of a few years back

In many if not most cases, current financial practice was originated, as Keynes put it so picturesquely, by the “scribbling” of some academic a few years back. Especially over the last several decades, research in finance has made notable strides in both sophistication and in more rapid implementation into financial practice. At the forefront are academic scholars who publish their findings in peer-reviewed journals. The most original ideas usually appear first in the best of these journals.

More accessible papers often follow in less technical journals that have larger circulations and are read by many prominent finance practitioners in investment management, investment banking, consulting, government and the financial arms of industrial firms.

Some firms, particularly investment managers and investment banks, have their own research departments that have become significant competitors for journal space with academics. Research from such sources is often proprietary at first, but it appears eventually in a publication if it has any genuine intellectual or practical value.

Finally, the academic and practitioner research is distilled into accessible textbooks, such as the one assigned for this course.

There is keen interest among academics and practitioners alike in modeling all sorts of financial variables, developing better forecasts and managing risks. Sophisticated and specialized software has fostered the use of financial models for investors from the smallest day trader to the largest institution. Continual improvement in computing power has made the tools of quantitative finance and data analysis available to almost everyone. Indeed, financial modeling has become so ubiquitous that it has achieved the dubious distinction of being blamed for the recent economic distress.¹

This course introduces the key theoretical concepts of finance, illustrates their practical implementation, and provides basic information about the organizations and institutions that engage in financial transactions. The textbook is the main resource, but the course will discuss some seminal papers from the leading peer-reviewed journals and from the more practitioner-oriented large circulation reviews. There are also a few recent working papers that have not yet appeared in print.

Grading

Homework will not be graded. It will be discussed fully in the TA sessions. Quiz and Exam questions will be similar to Homework questions.

There will be a fifteen-minute quiz at the beginning of class on October 15 and November 19 (after 25% and 75%, respectively, of the quarter.) These two quizzes will count as 15% of the final grade each.

There will be a take home mid-term exam after the fifth week; it will be distributed electronically after the class on October 29. It will count as 30% of the final grade.

The take home final exam will count as 40% of the grade; it will be distributed electronically on December 9.

¹A typical article is: David H. Freedman, 2011, A Formula for Economic Calamity, Scientific American 305, 5 (November), 77-79.

Schedule²

Week 1: September 29 and October 1, Elementary Financial Information

Background: Organizational Form, Agency Issues, Regulations, RWJ Chapter 1

Background: Financial Statements, RWJ Chapter 2

Background: Accounting Financial Ratios, RWJ Chapter 3.

Discounting: RWJ Chapter 4.

Compounding

Logarithms and exponentials

Background: NPV and its alternatives, RWJ Chapter 5

Capital Budgeting: RWJ Chapter 6.

Average returns: arithmetic, geometric, time-weighted

On Computing Mean Returns and the Small Firm Premium

Homework: Ratios and Financial Planning at East Coast Yachts, RWJ pp. 84-86.

Questions 21-25, RWJ pp. 81-82.

Questions 20-28, RWJ pp. 167-169.

Questions 37-38, RWJ pp. 204-205.

Week 2: October 6 & 8, Risk

Return Distributions: RWJ Chapter 10

A. Volatility

B. The Normal Distribution

C. Higher moments, particularly skewness and kurtosis

D. Tail probabilities and value-at-risk

E. Risk Aversion and Tolerance

F. Using the St. Petersburg Paradox to determine the degree of risk aversion

Risk Assessment by the St. Petersburg Game.xlsx

Homework: A Job at East Coast Yachts, RWJ pp. 332-334.

Questions 27-28, RWJ pp. 331-332.

² Note: Items on the schedule in italics refer to published papers, working papers, spreadsheets or presentations. The two latter items have suffixes. Everything is posted on the course web site.

Week 3: October 13 & 15, Fixed-Income

The Basics: RWJ chapter 8.

Bond Markets: RWJ chapter 15, pp. 478-486.

- A. Interest Rates, Real and Nominal
Fisher relation under certainty
- B. Expected and Actual Inflation
Bills and Inflation.xlsx
- A. Bond yields and prices
- B. Default Risk
- C. Forward rates and spot rates
- D. Theory of the yield curve
Term structure arithmetic
- E. Duration and immunization
Macauley
- F. Convexity
- G. Specialized Topics
Empirical TIPS
Adjustable Rate Mortgages: Valuation

Homework: Financing East Coast Yachts's Expansion with a Bond Issue,
RWJ pp. 271-272.

Questions 28 & 31, RWJ pp. 269-270.

BEM 103 Homework Week 3

15-Minute Quiz, Beginning of Class October 15
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Week 4: October 20 & 22, Risk and Return, Part I.

Markowitz Portfolio Analysis, RWJ chapter 11, pp. 335-352.

- A. Diversification
- B. Systematic risk and diversifiable (idiosyncratic) risk
- C. Review of Two-asset diversification
- D. Mean/variance optimized portfolios
Mean Variance Optimization
Efficient Frontier Calculations in EXCEL
- E. Diversification and correlation
The Benefits of Diversification
- F. Improving the inputs with Shrinkage
- H. Diversification of Extreme Price Movements
Internationally Correlated Jumps (and pptx)

Homework: A Job at East Coast Yachts, Part 2, RWJ pp. 376-377.
Questions 33-38, RWJ pp. 373-375.

Week 5: October 27 & 29, Risk and Return, Part II

The Capital Asset Pricing Model, RWJ chapter 11, pp. 353-368.

- A. Expected Returns on Individual Securities
- B. The Security Market Line
- C. The CAPM and the Market (Index) Model
- D. Extensions of the CAPM (the Zero-Beta Model)

Multi-factor market models, RWJ chapter 12.

- a. The Arbitrage Pricing Theory (APT)
 - b. Diversifiable and idiosyncratic risk in the APT framework
 - c. The no-arbitrage equilibrium
- E. Approaches to identifying factors
- a. Macro-economic candidates
 - b. Attributes-based candidates
 - c. Statistical factors
 - d. ETFs

Introduction to the APT.pptx

Volatility, Correlation, and Spread ETFs as Factors (and pptx)

- F. Tests of the CAPM and APT
- G. Human Capital and other Non-Traded Assets
- H. The Fama-French Three-Factor Model and Carhart Momentum
- I. Liquidity; time-varying volatility; the equity premium puzzle
The Market Portfolio May be Efficient After All (and pptx)

Homework: The Fama-French Multifactor Model and Mutual Fund Returns,
RWJ p. 399.
Questions 8-10, RWJ pp. 396-398.

**Take Home Mid-Term Exam,
After Class, October 29**

Week 6: November 3 & 5, Market Efficiency and Behavioral Finance

The Basics: RWJ Chapter 14.

- A. Evidence for and against market efficiency
 - The Adjustment of Stock Prices to New Information*
 - Orange Juice and Weather*
 - Stock Return Variances: The Arrival of Information and the Reaction of Traders*
 - R^2
- B. The Psychology of Investing
 - a. Overconfidence
 - b. Optimism and Pessimism
 - c. Representativeness
 - d. Framing
 - e. Mental Accounting
 - f. Prospect Theory
- C. Limits to arbitrage
- D. Evidence of behavioral influences on markets?
 - a. Closed-end funds
 - b. Bubbles

Homework: Your 401(k) Account at East Coast Yachts, RWJ pp. 472-473.

Week 7: November 10 & 12, International Finance

The Basics: RWJ chapter 31.

- A. International interest rate comparisons
- B. Foreign Exchange; spot and forward rates
- C. International Parity Conditions
 - Notes on International Parity Conditions*
 - Gold and the Dollar (and the Euro, Yen and Pound)*
- D. Foreign exchange futures
- E. Developed and Emerging Markets
- F. Exchange rate risk
- G. Benefits from international diversification
- H. Bull and bear market correlations
- I. The home bias
- J. Performance attribution
- K. Using development economics to improve returns
 - Why many developing countries just aren't (and pptx)*
- L. Market Integration
 - International Crash of October, 1987*
 - Global Market integration (and pptx)*

Homework: *BEM 103 Homework Week 7*
Questions 17-19, RWJ p. 971.

Week 8: November 17 & 19, Capital Structure and Dividends

The Basics: RWJ chapter 16.

- A. The M&M Propositions
- B. Taxes

Problems Associated with Debt: RWJ chapter 17.

- C. Financial Distress, Signalling, Agency Costs
 - D. Personal Taxes
- How Stable Are Corporate Capital Structures?*

Dividends and Repurchases: RWJ chapter 19

- E. Dividend Irrelevance?
- F. Taxes and the Clientele Effect

Homework: RWJ, questions 9-10, pp. 556-557 & questions 17-20, pp. 618-619.

<p style="text-align: center;">15-Minute Quiz, Beginning of Class, November 19</p>

**Week 9: November 24 & Thanksgiving Makeup Date to be Scheduled,
Options, Futures, Other Derivatives, and Hedging**

Options: RWJ chs. 22 & 23.

Black Scholes Currency Option Value

Futures, Swaps, and Hedging: RWJ chapter 25.

Hedging With Futures

EV with FX Hedging

Homework: *BEM 103 Homework Week 9*
Questions 30, 35-38, RWJ pp. 721, 723.
Clissold Industries Options, RWJ pp. 724-725.
Questions 8-10, RWJ p. 749.
Williamson Mortgage, Inc., RWJ p. 803.

Week 10: December 1 & 3, Mergers and Corporate Restructuring

Mergers, Acquisitions and Divestitures: RWJ chapter 29.

Is there one best way to sell a company?

Corporate Takeovers

Bankruptcy: RWJ chapter 30.

A. M&A, Behavioral Aspects

The Hubris Hypothesis of Corporate Takeovers

MicroHoo: Lessons from a takeover attempt

CEO Narcissism and the Takeover Process

B. Insolvency, Default, and Bankruptcy

Restructuring Key Terms and Concepts

Corporate Bond Defaults for 150 Years

Homework: The Birdie Golf – Hybrid Golf Merger, RWJ pp. 926-927.
Questions 17-18, RWJ p. 925.

**Take Home Final Exam,
During Finals Week, December 9-11**