

BEM 103: Introduction to Finance

J-L Rosenthal

Lectures MW 9-10:25 Baxter 25

Ta Section F 9-10:25

Contact: jlr@hss.caltech.edu

Class web site: <http://www.hss.caltech.edu/~jlr/courses/BEM103/BEM103Syllabus.htm>

Office hours: Friday 9-11

Baxter 133

Goals of the Class: This class introduces key concepts and issues in finance. To do so we will learn some of the basic (but fully relevant models) behind asset pricing and investment evaluation. We will also learn about the organizations and institutions that structure financial transactions in the US and elsewhere. Finally we will bring the theory and the rules of the game to examine important events and ongoing trends in finance today.

Text books: The class relies, mostly on open source material, so there is no required text book. The relevant background material will be posted on line. You should however purchase Arnold Glen's [Financial Times Guide to the Financial Markets](#) (FT Press 2012. \$25.49) as it is a critical guide to institutions and basic facts.

Student responsibilities

Home work: There will be weekly homework sets. These will be of moderate length and not graded. You are welcome to do these homework sets as team. To ensure you attend class and engage the homework, there will be 9 in class quizzes based on the previous week's homework and in class material.

Finance journal: You are asked to hold a finance journal in electronic form. This will involve making stock/bond picks and following their returns. Doing so will allow you to evaluate your decisions relative to the financial models we choose. The updated version of the journals will be due by Friday at 1pm (close of market in NY) each week. Journals will be graded for completeness and extra credit will be given for journals that outperform the market. (More details at end of syllabus)

Examinations: There will be a mid-term (25 pt), a final (50pts), and 12 in class quizzes (4pts each). 27 pts will be given for a completed journal (because work is cumulative this does not break down into weekly returns). Thus 150 pts total are available, 50% guarantees an F, and every additional 10% an extra grade. 90% guarantees an A.

10 pts are available for extra credit. Journals will be ranked in terms of final asset performance by decile, your decile rank will decide you the number of extra credit points.

9-30. Class 1: From claims to value

Relevance of Class, Basic material, The problem of value, Value for investors, Market value and efficient markets (1) Why do different people have different demands vs (2) No trade result.

Reading: [JW1](#) and [BO1](#) and Arnold CH 1. (note all of these are very brief and very easy)

10-02 Class 2: Value for Issuers

Acceleration and Evaluation of projects; Capital budgeting; Modigliani Miller vs Risk and taxes

Reading: [JW2](#) and [JW5](#)

The Original Paper: Franco Modigliani, Merton H. Miller “[The Cost of Capital, Corporation Finance and the Theory of Investment](#)” *The American Economic Review*, Vol. 48, No. 3 (Jun., 1958), pp. 261-297

10-07 Class 3: Exchange mechanisms

Secondary markets and the double auction; Primary markets and underwriting; rapid changes in the structure of global finance

Reading: Arnold Chapter 10-12

10-09 Class 4: Modern Finance?

Financial axioms vs behavioral finance and imperfect markets; Financial markets are competitive Value additivity; No Free Lunch; Markets are efficient

Reading: [BO2](#)

10-14 Class 5: Asymmetric Information

The market for lemons and the winner’s curse. Efficient market Information aggregation

Reading: Benmelech, Efraim, and Jennifer Dlugosz, 2009b, [The Credit Rating Crisis](#), NBER Macroeconomics Annual 2009, 161-207.

10-16 Class 6: Pricing riskless Bonds

Net Present value, again; Fed policy and inflation; Expectations and the yield curve; Implication for assets with risk; Digression junk bonds and bankruptcy; Application: QE2 and the unwinding of the Fed Position.

Reading: [JW3](#)

10-21 Class 7 : Risk

Each Security has uncertain payoffs; Down side VS Upside; Risk aversion: Expected utility and utility of expected value; Basic mean variance trade off in utility; Individual heterogeneity and sorting in markets.

Reading: [JW6](#)

10-23 Class 8: The Portfolio approach to risk

More than one security out there and returns not perfectly correlated; Portfolios have better mean return profiles than individual stocks; Efficient frontier and the Sharpe value; Basic portfolio separation; Why not insurance contracts?

Reading: [JW7](#)

An Early Paper: Harry Markowitz, [Portfolio Selection](#) *The Journal of Finance*, Vol. 7, No. 1 (Mar., 1952), pp. 77-91

10-28 Class 9: The portfolio approach and the Price of securities

CAPM; Rise of the passive investor; What happens when new information comes in; Another no trade result?

Reading: [JW8](#);

An Early Paper: William F. Sharpe, [Capital Asset Prices: A Theory of Market Equilibrium under Conditions of Risk](#) *The Journal of Finance*, Vol. 19, No. 3 (Sep., 1964), pp. 425-442

10-30 Class 10: Market efficiency

Alpha and Beta; Problems with CAPM

Reading: [JW9](#);

Eugene Fama and Kenneth R French; [The Value Premium and the CAPM](#); *The Journal of Finance*, Vol. 61, No. 5 (Oct., 2006), pp. 2163-2185

11-04 Class 11: Intermediaries and assets

Definition; creating new assets: Transformation; Bundling; Unbundling; taking positions Leverage

Reading: Arnold Chapters 2-5

11-06 Class 12 Forwards and Futures

Financial markets as insurance markets; Instruments and exchanges; The counterparty risk problem

Reading: [JW10](#) Arnold Chapters 14 and 15.

Visit Chicago merchantile exchange [website](#)

11-11 Class 13 Options and Hedging

Why Hedge; Why options; Pricing options, the one period problem;, the multi-period problem; The Black-Sholes equation and formula

Reading: [JW11](#); Arnold Chapter 17.

Original Paper: Black, F. and Scholes, M. [The Pricing of Options and Corporate Liabilities](#) *Journal of Political Economy*, Vol. 81, No. 3 (May - Jun., 1973), pp. 637-654

11-13 Class 14 Risk and the firm (one project)

Firms as projects; information revelation; then Financial governance as corporate governance: Debt vs equity; the bankruptcy constraint; Sunk costs.

Reread [JW5](#) and

Tirole, Jean: [Corporate Governance](#) *Econometrica*, Vol. 69, No. 1 (Jan., 2001), pp. 1-35

11-18 Class 15 Firms as portfolio of projects

Debt equity and retained earnings; implications for governance. Project selection again. Should firms' hedge?

Reading [BO3](#)

11-20 Class 16 Taxes and balance sheets.

Taxes and financial structure; Modigliani Miller (again); The attraction of leverage; Consequences of leverage (again)

Reading TBA.

11-25 Class 17, The problem of Mortgages

Lending on collateral before 1940 (land and real property); Information constraint (value of collateral only known locally); Short maturity, balloon payment, illiquid and poorly diversified

Solutions (1): Raise the information quality (lien registries); Financial innovation (covered mortgages)

Solution (2): Mortgage backed securities and no leverage rules; Boom and bust

Debate: role of government here.

Juan Carlos Hatchondo, Leonardo Martinez and Juan M. Sánchez “Europe May Provide Lessons on Preventing Mortgage Defaults”. *The Regional Economist* July 2013

Elena Loutskina and Philip E. Strahan “informed and uninformed investment in housing; the downside of diversification; forthcoming *Review of Financial Studies*.”

11-27 Class 18 Government and financial structure

Regulated vs unregulated financial actors; Banks vs the shadow banking sector; Commercial banks vs investment banks; Aided vs unaided financial actors; Consequences for firms; Consequences for investors. Bail outs vs No bail outs

Reading Ragu Rajan “Has Financial Development Made the World Riskier?” *European Financial Management*, September 2006, 12(4), pp. 499-533.

Ross Levine, [“The Governance of Financial Regulation: Reform Lessons from the Recent Crisis”](#)
International Review of Finance, forthcoming,

12-02 Class 19 Liquidity Crises

History: 1907 and the founding of the FED; LTCM vs Barings (1890s and 1990s); 2008 (AIG, some banks)
rationale for deployment of TARP; Deleveraging vs Reform.

Reading: Arnold Chapter 17-18. And one of the two below.

Frederic S. Mishkin, “Over the Cliff: From the Subprime to the Global Financial Crisis” (pp. 49-70) *Journal of Economic Perspectives*: Vol. 25 No. 1 (Winter 2011)

Vincent Reinhart “A Year of Living Dangerously: The Management of the Financial Crisis in 2008” (pp. 71-90) *Journal of Economic Perspectives*: Vol. 25 No. 1 (Winter 2011)

12-04 Class 20 Long Term Crashes

Japan since 1989; Nasdaq vs NYSE 2001-2; Older bubbles; Consequences for survivors? Reform?

Homework and exam calendar

Iten	Posted	Due
Financial portfolio 1		Oct 4 9 AM
Homework 1		Oct 7 5 PM
Financial portfolio 2		Oct 11
Homework 2		Due 14
Financial portfolio 3		Oct 18
Homework 3		Due 21
Financial portfolio 4		Oct 25
Homework 4		Due 28
Midterm	Oct 30	Nov 1 5 PM
Financial portfolio 5		Nov 1
Homework 5		Nov 4
Financial portfolio 6		Nov 8
Homework 6		Nov 11
Financial portfolio 7		Nov 15
Homework 7		Nov 18
Financial portfolio 8		Nov 22
Homework 8		Nov 25
Financial portfolio 9		Nov 27
Homework 9		Dec 2
Financial Portfolio liquidation		Dec 5
Final Exam	Dec 10	Dec 12 rpm

Bem 103 Financial journals

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Overview: As part of BEM 103 students are expected to keep a financial journal and turn it by Email in 10 times in the quarter. The data have no research value and the instructor will not use the data for research purposes. The purpose of the journal is to engage students with real financial decisions and have them investigate different classes of assets and different ways of dealing with financial markets. The journals, once turned in will allow the instructor to produce a data base of student choices that will be use solely for expositional purposes. For instance, it is likely that students will be more engaged in discussion of yield curves and risk return trade-offs if they see a distribution of portfolio decisions they and their peers made than if the instructors just simply displays the current yield curve. Discussions of attitudes towards risk are likely to be sharper if they are accompanied with distribution of leverage choices (week 5 and 6).

Description for students (Finance Journal-Instructions for students)

You will be making 9 investment decisions (one per week through week 9) each will have a fictitious \$10,000 attached. By the end of the week 9 you will have thus invested a fictitious \$90,000. At the end of week 10 you will liquidate your portfolio and total up your gains or losses.

Each week you will make an investment decision and evaluate the performance of the decisions you made in previous weeks and compare them to relevant benchmarks.

Regular credit: You will earn regular course credit for turning in your journals on time. Journals are due Friday in section, they can be turned earlier in the week but not later a journal that is turned in late automatically forfeits that week's credit. Each week the work is turned in completed you will earn 3pts (out of a total of 150 for the course). Late journals cannot be accepted because they would have an informational advantage over those turned in on time.

Extra credit: How well you do does not influence your grade. Instead, journals will be ranked in terms of final performance by decile your extra credit will simply the decile of your performance relative to your peers. Only those investment decisions made on time (before Friday 9 am of the relevant week) will count in your earnings. We will also use the distribution of portfolio choices for discussion in class but the individual data will remain confidential.

Week 1: Bond decision.	Week 2: An equity investment
Week 3: Portfolio decision No short sales	Week 4: Portfolio decision (With short sales)
Week 5 Portfolio decision with transactions costs	Week 6: : Leverage decision with Limited Liability
Week 7: leverage decision with Aggregate Liability	Week 8: Commodities
Week 9: Mutual fund	Week 10: Liquidation

Open an excel spread Sheet use the first sheet for the first week. Please use your initials followed by a three digit number (e.g. JLR801) to identify your spread sheet.

Financial Journal Week 1

Decision 1: On sheet 1. you have \$10,000 to invest in a bond what would you chose among those that are quoted on US exchanges. Give details of the bond: name, maturity, coupon, current face value, yield and anything else you found out about it. And Current price! Why did you pick it?

Email to your TA by October 4 9 am

Financial Journal Week 2

Update

Return to sheet 1. Keep the data you had before and Update data so that you have price and check if coupon payment was made. What is your one week return? What is the variance using daily close as observations?

Decision 2.

On sheet 2 of your excel spread sheet .You have \$10,000 to invest in a stock what would you chose among those that are quoted on US exchanges. Give details of the bond: name, anything else you found out about it, And Current price! Why did you pick it?

Email to your TA by deadline

Financial Journal Week 3

Update

Return to sheet 1. Update price and check if coupon payment was made. What is your two week return? What is it weekly? What is the variance using daily close as observations? Is the same if you use week 2 observations or week 2 and 1?

Return to sheet 2. Update price and check if dividend payment was made. What is your one week return? What is the variance using daily close as observations?

Decision 3.

On sheet 3 of your excel spread sheet: You have \$10,000 to invest in up to 10 stocks that are quoted on US exchanges. How much do you invest in each stock? Give details of the bond: name, anything else you found out about it, And Current price!

Email to your TA by deadline

MORE LATER!