COURSE: Financial Decision Making (Fina 6221)  
Funger Hall Room 207  
Monday 7:10 PM – 9:40 PM  

INSTRUCTOR:  
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Office Hours Monday 2-6 p.m. and by appointment

COURSE DESCRIPTION:

• Financial Decision Making is a three credit course offered by the Department of Finance.

• Through a series of readings, lectures, class discussions, programming assignments, case studies and research project, the student will:

  (1) Gain an understanding of the strengths and weaknesses of financial theory that underlies all areas of finance including corporate finance, investments, financial markets and institutions, and risk management;
  (2) Develop skills in applying financial theory, modeling, and analysis to the solution of real world problems.

• PREREQUISITES: MBAD 250.

REQUIRED TEXTS:

2) Notes and materials provided in class

Recommended Text:

   http://www.amazon.com/Financial-Theory-Corporate-Student-Solutions/dp/0201106493
2) Case Problems in Finance, 12th ed., Kester, Ruback, and Tufano
3) Options, Futures, & Other Derivatives, 8th ed., Hull
COURSE OBJECTIVES:

- To enhance students understanding of financial theory which underlies many models and analytical techniques used in all areas of finance,
- Explore in particular the implications of financial theory for corporate financial policies.
- Explore recent financial crises and understand how failures in risk modeling contributed to systemic risks encountered in the global financial system.

METHOD OF INSTRUCTION: Lectures, case studies, guest speakers.

COURSE REQUIREMENTS:

Elements of Evaluation:

1. Quizzes (Average of Best 8 out of 10 grades) 300
2. Average of Group Programming Assignments (portfolio modeling and swap valuation) 200
3. Average of Group Case studies 300
4. Group Research Project 200
5. Total Points = 1,000

Definition of a Theory

From Wikipedia, the free encyclopedia

Originally the word theory as it is used in English is a technical term from Ancient Greek philosophy. It is derived from theoria, θεωρία, meaning "a looking at, viewing, beholding", and refers to contemplation or speculation, as opposed to action. Theory is especially often contrasted to "practice" (from Greek praxis, πρᾶξις) an Aristotelian concept which is used in a broad way to refer to any activity done for the sake of action, in contrast with theory, which does not need an aim which is an action. By extension of the philosophical meaning, "theoria" is also a word still used in theological contexts.

In modern contexts, while theories in the arts and philosophy may address ideas and empirical phenomena which are not easily measurable, in modern science the term "theory", or "scientific theory" is generally understood to refer to a proposed explanation of empirical phenomena, made in a way consistent with scientific method. Such theories are preferably described in such a way that any scientist in the field is in a position to understand, verify, and challenge (or "falsify") it. In this modern scientific context the distinction between theory and practice corresponds roughly to the distinction between theoretical science and technology or applied science. A common distinction sometimes made in science is between theories and hypotheses, with the former being considered as satisfactorily tested or proven and the latter used to denote conjectures or proposed descriptions or models which have not yet been tested or proven to the same standard.
Definition of a Model

From Business Dictionary.com

Graphical, mathematical (symbolic), physical, or verbal representation or simplified version of a concept (e.g. value at risk), phenomenon, relationship, structure, system, or an aspect of the real world. The objectives of a model include (1) to facilitate understanding by eliminating unnecessary components, (2) to aid in decision making by simulating 'what if' scenarios, (3) to explain, control, and predict events on the basis of past observations. Since most objects and phenomenon are very complicated (have numerous parts) and much too complex (parts have dense interconnections) to be comprehended in their entirety, a model contains only those features that are of primary importance to the model maker's purpose. Models range from simple sketches to computer programs with millions of lines of code, but all of them have one thing in common: some elements of the actual 'thing' are abstracted or mapped (see mapping) into the model. Models are divided into three classes on the basis of their degree of abstraction (1) Iconic model: least abstract, physical, 'look-alike' model, such as a model airplane or train. (2) Analogous model: more abstract but having some resemblance to what it represents, such as a chart, graph, map, network diagram. (3) Symbolic model: most-abstract model with no resemblance but only an approximation to what it represents, such as a mathematical equation or formula, financial statement, language, and set of accounts. See also mental models.

“All models are wrong but some are useful.”

George Box

“Insanity: doing the same thing over and over again and expecting different results.”

Albert Einstein

Definition of Analysis

“Analysis is the substitution of error for ignorance.”

Unknown wise analyst
COURSE OUTLINE:

Week 1 (September 10) – Introduction.

Course Overview.

Review of class background and experience

Review of Corporate Financial Management

Overview of Financial Crises

Week 2 (September 17) –

Lecture Topics:

• Capital Markets, Consumption, and Investment
• Investment Decisions: The Certainty Case
• The Theory of Choice: Utility Theory Given Uncertainty
• State Preference Theory

Assignments:

Copeland Chapters 1, 2, 3 and 4.

Week 3 (September 24) –

Quiz 1

Lecture Topics:

• Continue from week 2
• Objects of Choice: Mean-Variance Portfolio Theory
• Market Equilibrium: CAPM and APT

Assignments:

Copeland Chapters 1, 2, 3, 4, 5 and 6.

Week 4 (October 1) –

Quiz 2

Lecture Topics:

• Continue from week 3
• Market Equilibrium: CAPM and APT

Assignments:

Copeland Chapters 1, 2, 3, 4, 5 and 6.

Programming Assignment 1: Create an Excel program to calculate the expected return, standard deviation of returns, and value at
risk for a portfolio of 20 common stocks. What variable drive the expected return and risk of a portfolio of common stocks? How confident are you in your ability to model the expected return and risk of a portfolio of common stocks?

Week 5 (October 8) –
Quiz 3
Lecture Topics:
• The Term Structure of interest Rates, Forward Contracts, Futures, swaps, and hedging
• Pricing Contingent Claims: Option Pricing Theory and Evidence
• Value at risk analysis
Assignments:
Copeland Chapters 7, 8.
Hull Chapters 2, 4, 5, 7

Week 6 (October 15) –
Quiz 4
Lecture Topics:
• Continue the Term Structure of interest Rates, Forward Contracts, Futures, swaps, and hedging
• Continue Pricing Contingent Claims: Option Pricing Theory and Evidence
• Continue Value at risk analysis
Assignments:
Copeland Chapters 7, 8.
Hull Chapters 2, 4, 5, 7
Turn in and present Programming assignment 1.
Programming Assignment 2: Create an Excel program to value interest rate swaps.
Week 7 (October 22).

Quiz 5

Case: Reverse Yen Principal Exchange Rate Linked Securities (PERLS)

All Groups turn in a case write up.

Group A presents an analysis of the case.

Lecture on systemic risk modeling

Assignment: Modeling Correlated Systemic Liquidity and Solvency Risks in a Financial Environment with Incomplete Information
Theodore Barnhill Jr. and Liliana Schumacher, IMF, 2011

Week 7 (October 29).

Quiz 6

Lecture Topics:
• Efficient Capital Markets: Theory
• Efficient Capital Markets: Evidence
• Information Asymmetry and Agency Theory

Assignments:
Copeland Chapters 10, 11 and 12.

Week 8 (November 5).

Quiz 7

Lecture Topics
• Capital Structure and the Cost of Capital: Theory and Evidence
• Dividend Policy: Theory and Empirical Evidence

Copeland Chapters 15 and 16.

Turn in and present Programming assignment 2.
Week 10 (November 12).

Quiz 8- Williams

Case Assignment: Williams

• Evaluate the terms of the proposed $900M financing from the perspective of both parties. What is the purpose of each of the terms of the proposed financing?
• How would you calculate the return to investors in this transaction? What result do you get?
• As the CEO of Williams, would you recommend accepting the proposed $900 million financing offer? If not, what alternatives would you pursue?

All Groups turn in a case write up.

Group B presents an analysis of the case.

Week 11 (November 19).

Quiz 9 - Marriot

Case Assignment: Marriott Corporation: The Cost of Capital

• What is the weighted average cost of capital for Marriott Corporation?
• If Marriott used a single corporate hurdle rate for evaluating investment opportunities in each of its lines of business, what would happen to the company over time?
• What is the cost of capital for the lodging, restaurant divisions of Marriott?

All Groups turn in a case write up.

Group C presents an analysis of the case.
Week 12 (November 26).

Quiz 10 - Gulf

Case Assignment: Gulf Oil Corporation-Takeover

- What price would you recommend that Socal bid for Gulf?
- Justify your proposed price with appropriate valuation analysis.

All Groups turn in a case write up.

Group D presents an analysis of the case.

Week 13 (December 3).

Presentation of Group Research Projects, on a company in financial distress and development of a reorganization proposal.
Reverse Yen Principal Exchange Rate Linked Securities (PERLS)

On June 24, 1988, a AAA rated United States Government Agency ("AAA Agency") issued U.S.$110,000,000 face amount of 10.95% Reverse Principal Exchange Rate Linked Securities with a major investment bank ("Major Bank") acting as the lead underwriter. An abridged summary of the offering is as follows:

Issuer: AAA Agency
Amount: US$110,000,000
Maturity: July 7, 1993
Launch Date: June 24, 1988
Settlement Date: July 7, 1988
Price to Public: 100.00%
Price to AAA agency: 99.375%
Net Proceeds: $109,312,500
Proceeds before Option: -$1,650,000
Foreign Exchange Option: $107,662,500
Net Proceeds: $109,312,500
Interest on Notes: 10.95% on US$ 110,000,000, payable semi-annually in arrears in US$.

Maturity Principal: Final US$ principal at maturity will be determined using the following equation:

US$220 MM – (Yen 14.311 billion/spot rate)

At the June 24, 1988 spot rate of 130.10 Yen/USD, the formula produces a redemption value of $110 million

Interest Payment Dates: January 7, and July 7, commencing January 7, 1989
Lead Underwriter: Major Bank

Market Data June 24, 1988:

- par-bond, semiannually compounded yield curves for each currency were estimated as follows:

<table>
<thead>
<tr>
<th>Maturity</th>
<th>U.S. Treasury</th>
<th>AAA Agency All-In-Cost Spd to U.S.T.</th>
<th>USD LIBOR Deposit Quotes</th>
<th>USD LIBOR Swap</th>
<th>Yen LIBOR/SWAP</th>
</tr>
</thead>
<tbody>
<tr>
<td>3-month</td>
<td>6.72%</td>
<td>0.82%</td>
<td>7.62%</td>
<td>4.35%</td>
<td>4.51%</td>
</tr>
<tr>
<td>6-month</td>
<td>7.09%</td>
<td>0.74%</td>
<td>7.75%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1-year</td>
<td>7.48%</td>
<td>0.50%</td>
<td>0.60%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3-year</td>
<td>8.21%</td>
<td>0.59%</td>
<td>0.69%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5-year</td>
<td>8.45%</td>
<td>0.61%</td>
<td>0.68%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7-year</td>
<td>8.72%</td>
<td>0.64%</td>
<td>0.71%</td>
<td>5.44%</td>
<td></td>
</tr>
<tr>
<td>10-year</td>
<td>8.85%</td>
<td>0.64%</td>
<td>0.74%</td>
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<td></td>
</tr>
</tbody>
</table>

- Exchange rate of Yen = 130.10 Yen/$ or 0.007686395 $/Yen
Questions:
1. Identify all the relevant cash flows for the structured financing,
2. Identify a set of financial instruments (cash, forwards, swaps, options, etc.) which in combination produce the same future cash flows as the structured financing,
3. Value these component parts,
4. Assuming that Major Bank is prepared to provide hedging services for AAA Agency develop an appropriate hedge.
5. Estimate the all-in-cost of financing for AAA Agency
6. Undertake a value-at-risk analysis for the investor in the security.