

# **Corporate Finance and Real Estate Syllabus**

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## **Course Focus**

We will explore how corporations make financial decisions through the analysis of Harvard Business School cases. Should a firm undertake a new investment opportunity, raise equity, acquire another firm, or conduct an IPO? How much is A-Rod worth? How should small firms manage their working capital? How fast should a firm grow? These questions can be answered through incremental cash flow analysis technique, and in this course we will learn how to properly apply the technique to real-life situations. We will also examine how market imperfections, such as taxes, information asymmetries, and conflicts of interest, affect optimal corporate policies and what managers can do to increase the value of the firm.

## **Course Materials**

Textbooks: 1. Principles of Corporate Finance by R.A. Brearly, S. Myers, and F. Allen, 10<sup>th</sup> edition\*  
2. Analysis for Financial Management by R.C. Higgins, 10<sup>th</sup> edition\*

*\*These textbooks will be used for background readings only, and earlier editions are also fine.*

Cases will be available on [study.net](http://study.net)

## **Course Format**

Case analysis will involve building Excel models and conducting sensitivity analysis to assumptions in support of the final recommendation. Due to the labor-intensive nature of case preparation, I strongly encourage students to work in groups to get ready for class. Attendance and participation are essential parts of the learning process for this course. I expect students to attend all scheduled sessions and to come prepared to contribute to the discussion. Reading assignments should be read in advance of class, and everyone is expected to participate in discussions. If you have a compelling reason for missing a

class, you should inform me in advance (email is best). **Missing classes will affect your grade; missing any without reasonable cause is likely to do so significantly** (see participation grading scheme below). If you absolutely need to miss a class, please let me know ahead of time, and I will, most likely, ask you to submit written answers to case questions prior to the missed class and evaluate your participation based on this writeup.

### **Class Participation**

Class participation is a very important part of the learning process in this course. A major part of your final grade (40%) will be based on an assessment of the quality of your contributions to class discussions.

### **Homework**

There will be two homework assignments that will comprise of several multiple-choice questions and will be computer-based. Basic knowledge of all course material covered in prior classes will be tested. Students are free to consult their notes, textbooks, and the internet (but not another person) and will have a total time of two hours (not including breaks) to complete each homework assignment. A sufficiently long time window (a week or more) will be given for each assignment.

### **Final Project**

The final project involves solving a case and preparing a detailed report showing all relevant analysis.

### **Office Hours**

Office hours are held by appointment.

### **Evaluation**

Final grades will be computed as:

Individual participation	40%
Timed homework	20%
Final Project	40%

## COURSE SCHEDULE

The course is comprised of six modules:

### **Module 1: Financial statements, pro forma forecasting, working capital management**

Recommended reading:

- R.C. Higgins, *Analysis for Financial Management*, Chapters 1 through 4
- R.A. Brealey, S. Myers and F. Allen, *Principles of Corporate Finance*, Chapters 29 and 30

### **Module 2: Time value of money, cash flow recipe, regression analysis, financial modeling**

Recommended reading:

- R.C. Higgins, *Analysis for Financial Management*, Chapter 7
- R.A. Brealey, S. Myers and F. Allen, *Principles of Corporate Finance*, Chapters 2 and 3

### **Module 3: Cost of capital**

Recommended reading:

- R. A. Brealey, S. Myers and F. Allen, *Principles of Corporate Finance*, Chapters 8, 9, and 10

### **Module 4: Valuation ratios**

Recommended reading:

- R.C. Higgins, *Analysis for Financial Management*, Chapter 9

### **Module 5: Capital structure and taxes**

Recommended reading:

- R. A. Brealey, S. Myers and F. Allen, *Principles of Corporate Finance*, Chapters 18 and 19

### **Module 6: Asymmetric information and agency problems**

Recommended reading:

- R. A. Brealey, S. Myers and F. Allen, *Principles of Corporate Finance*, Chapters 16, 32, and 33

## LIST OF CASES:

In this course, we will analyze the following cases (quizzes may be taken in any one-hour period during the week that follows the session under which the quiz is listed):

### Session 1:

- Butler Lumber Company

### Session 2:

- Ginny's Restaurant: An Introduction to Capital Investment Valuation

### Session 3:

- A-Rod: Signing the Best Player in Baseball

### Session 4:

- Ocean Carriers

### Session 5:

- Partners Healthcare

### Session 6:

- Cost of Capital at Ameritrade
- **HW #1 assigned**

### Session 7:

- Eskimo Pie Corporation (Abridged)

### Session 8:

- Debt Policy at UST Inc.

### Session 9:

- Pharmacyclics: Financing Research & Development
- **HW #2 assigned**

### Session 10:

- Radio One, Inc.

## **CASE QUESTIONS:**

### **Module 1**

#### **Session 1**

##### **Case: Butler Lumber Company**

##### **Case Questions:**

1. How well is Butler Lumber doing? Why?
2. What has been the company's financial strategy? Why does Mr. Butler have to borrow so much money to support this profitable business? Has he been managing his company's cash flow wisely?
3. Do you agree with his estimate of the company's loan requirements? How much will he need to borrow to finance his expected expansion in sales in 1991 (assume sales volume of \$3.6 million)? How much will he need over the next several years?
4. Would you urge Mr. Butler to proceed with, or to reconsider, his anticipated expansion plans?

### **Module 2**

#### **Session 2**

##### **Case: Ginny's Restaurant: An Introduction to Capital Investment Valuation**

**Case Questions:** Please complete the questions contained in the Ginny's Restaurant case.

#### **Session 3**

##### **A-Rod: Signing the Best Player in Baseball**

##### **Case questions:**

1. What is the pre-tax present value of the incremental costs of signing Alex Rodriguez?
2. How many extra tickets do you expect the Rangers to sell each year if they sign Rodriguez? What is the pre-tax present value of those additional spectators? Hint: Consider using a regression – perhaps with more than one variable – to estimate the additional attendance for each additional win.
3. What is the change in the probability for the Rangers of participating in the American League Championship Series and the World Series? What are the expected pre-tax cash flows and the associated pre-tax present value? Hint: Please see the information on the playoff probabilities for the Rangers at the end of these assignment questions.
4. Will the signing Alex Rodriguez increase the potential sales price of the Rangers? If so, what is the pre-tax present value? Assume that the Rangers

would be sold in ten years, right after the expiration of Alex Rodriguez's contract.

5. Should the Texas Rangers sign Alex Rodriguez? If you find that the pre-tax present value of the incremental costs exceeds the pre-tax present value of incremental benefits, how much would ticket prices have to increase for the Rangers to break even?

Note on baseball playoffs:

The Texas Rangers play in the American League of Major League Baseball, which consists of 14 teams. Each year the top four of those 14 compete for the right to play in the World Series. There are three sets of playoffs: (i) a first round which involves four American League Teams; (ii) the American League Championship Series which involves two American League teams; and (iii) the World Series in which the winner of the American League Championship plays the winner of the National League Championship. Use the following estimates on the playoff probability:

- The probability that the Rangers make playoffs without Rodriguez is  $4/14=28\%$
- The probability that the Rangers make playoffs with Rodriguez is  $6/14=42\%$
- The probability that the Rangers will advance to American League Championship Series, conditional on making playoffs is 50% (with or without Rodriguez)
- The probability that the Rangers will advance to World Series, conditional on making playoffs is 25% (with or without Rodriguez)

**Session 4**

**Case: Ocean Carriers**

**Case Questions:**

Ocean Carriers uses a 9% discount rate.

1. Do you expect daily spot hire rates to increase or decrease next year?
2. What factors drive average daily hire rates?
3. How would you characterize the long-term prospects of the capsize dry bulk industry?
4. Should Ms. Linn purchase the \$39 million capsize? Make two different assumptions. First, assume that Ocean Carriers is a US firm subject to 35% taxation. Second, assume that Ocean Carriers is located in Hong Kong, where owners of Hong Kong ships are not required to pay any tax on profits made overseas and are also exempted from paying any tax on profit made on cargo uplifted from Hong Kong.
5. What do you think of the company's policy of not operating ships over 15 years old?

## Module 3

### Session 5

#### **Partners Healthcare**

##### **Case questions:**

1. Based on what we have done so far in class, must it be that the required return (discount rate) of any asset be related to its risk? Could it be that some assets with high standard deviations of return rationally have low expected returns?
2. Suppose that there are two assets: A and P. Assume that asset P has a standard deviation of returns of 20% per annum. You invest fraction  $x$  of your wealth in asset A and  $(1-x)$  in asset P. Suppose that  $x$  is in the range 0-3%.
  - a. How does the risk of the portfolio change with  $x$  if asset A is riskless?
  - b. How does the risk of the portfolio change with  $x$  if asset A is risky, with a standard deviation of 50% p.a., but with a zero correlation with asset P?
  - c. How does the risk of the portfolio change if, instead of zero, asset A has a correlation of 0.6 with asset P?
  - d. How does the risk of the portfolio change if asset A is perfectly correlated with asset P and has a standard deviation of 30%?

Do the same for  $x$  in the range of 3%-50%. For small  $x$ , why are the answers similar for (a) and (b), and also (c) and (d), but not for large  $x$ ?

### Session 6

#### **Cost of Capital at Ameritrade**

##### **Case questions:**

1. What factors should Ameritrade management consider when evaluating the proposed advertising program and technology upgrades? Why?
2. How can the Capital Asset Pricing Model be used to estimate the cost of capital for a real (not financial) investment decision?
3. What is the estimate of the risk-free rate that should be employed in calculating the cost of capital for Ameritrade?
4. What is the estimate of the market risk premium that should be employed in calculating the cost of capital at Ameritrade?
5. In principle, what are the steps for computing the asset beta in the CAPM for the purposes of calculating the cost of capital for a project?
6. Ameritrade does not have a beta estimate because the firm has been publicly traded for only a short time period. Exhibit 4 provides various choices of comparable firms. What comparable firms do you recommend as the appropriate benchmarks for evaluating the risk of Ameritrade's planned advertising and technology investments?
7. Using the stock price and returns data in Exhibits 4 and 5, and the capital structure information in Exhibit 3, calculate the asset betas for the comparable firms.
8. How should Joe Ricketts, the CEO of Ameritrade, view the cost of capital you have calculated?

## **Module 4**

### **Session 7**

#### **Eskimo Pie Corporation (Abridged)**

##### **Case questions:**

1. What is your estimate of the per share value of Eskimo Pie using the discounted cash flow approach?

Hints:

- a. Begin by estimating the cash flows anticipated in 1992. You should build your cash flows off the updated forecasts on page 5 of the case instead of using the information in Exhibit 6.
  - b. The working capital listed in the balance sheet data portion of Exhibit 1 equals current assets less current liabilities, and therefore includes a substantial amount of cash. Because the business involves so little manufacturing or retailing, it is reasonable to assume that working capital (A/R plus Inventory less A/P) is negligible.
  - c. You can also reasonably assume that capital expenditures equal depreciation.
  - d. Choose your comparable companies from Exhibit 8, and follow the procedure we used in Ameritrade to estimate the cost of capital for Eskimo Pie.
  - e. Use your cash flow estimate for 1992 along with your estimate of a growth rate and cost of capital in a growing perpetuity formula to estimate the discounted cash flow value of Eskimo Pie.
2. How does the value you estimated using the discounted cash flow approach compare to the market value of the comparable companies?

Hints:

- a. Use multiples of sales and cash flows
  - b. Consider multiples implicit in Nestle's offer for Eskimo Pie
3. Why would Nestle want to acquire Eskimo Pie? Is Eskimo Pie worth more to Nestle than it worth as a stand-alone company?
  4. As an advisor to Reynolds, would you recommend the sale to Nestle or the proposed initial public offering?

## **Module 5**

### **Session 8**

#### **Debt Policy at UST Inc.**

##### **Case Questions:**

1. What are the primary business risks associated with UST Inc.? What are the attributes of UST Inc.? Evaluate from the viewpoint of a bondholder.
2. Why is UST Inc. considering a leveraged recapitalization after such a long history of conservative debt policy?



3. Should UST Inc. undertake the \$1 billion recapitalization? Calculate the marginal (or incremental) effect on UST's value, assuming that the entire recapitalization is implemented immediately (January 1, 1999).
  - a. Assume 38% tax rate.
  - b. Prepare a pro-forma income statement to analyze whether UST will be able to make interest payments.
  - c. For the basic analysis, assume the \$1 billion in new debt is constant and perpetual. Should UST alter the new debt via a differential level or change in the amount of debt through time?
4. UST Inc. has paid uninterrupted dividends since 1912. Will recapitalization hamper future dividend payments?

## Module 6

### Session 9

#### **Pharmacyclics: Financing Research & Development**

##### **Case Questions:**

5. Why is Pharmacyclics (PCYC) considering an equity issue in March 2000? Why \$60 million? What factors should Dr. Richard Miller consider in deciding whether to raise equity?
6. What is your forecast of after-tax cash flows for PCYC through 2002 assuming Xcytrin and Lutrin are approved? How would your forecast change if the drugs were not approved?
7. Compare these cash flows to PCYC's liquid assets (cash and investments that can be easily converted to cash). As of March 2000, how many future years of funding does PCYC have?
8. Repeat this analysis for 1994. What funding strategy is apparent in PCYC's pre-IPO financing? Why would the managers of PCYC want to follow this strategy? Would its investors also want PCYC to follow this strategy?
9. Forecast after-tax cash flows for PCYC through the expiration of the four drug patents. Use a tax rate of 35% and the following additional assumptions in your analysis:
  - **For Lutrin:** 50% probability of FDA approval in 2002.
  - **For Antrin:** 30% probability of FDA approval in 2004. If Antrin is approved by the FDA, its contribution to pre-tax income would be \$191 million in FY05 and peak at \$281 million in FY06.
  - **For Optrin:** 30% probability of FDA approval is 2004. If Optrin is approved by the FDA, its contribution to pre-tax income would be \$25 million in FY05, \$40 million in FY06, and peak at \$50 million in FY07.
  - **For all drugs:** Patent protection for these drugs ends ten years after FDA approval. Upon patent expiration, analysts expected revenue to fall at a perpetual rate of 20% per year (for example, if revenue is \$1.00 prior to patent expiration, the pattern of revenues after patent expiration is forecast at \$0.80, \$0.64, \$0.51, etc.).

10. What is the appropriate discount rate to value the after-tax cash flows following approval in 2002? Is that rate also appropriate prior to approval?
11. What is the appropriate terminal value?
12. What is the value of PCYC? What is your estimate of value per share?
13. How sensitive is your estimate of per share value to your assumption about price per treatment and off-label use of Xcytrin? What other assumptions are important?

## **Session 10**

### **Radio One, Inc.**

#### **Case Questions:**

1. Why does Radio One want to acquire 12 urban stations from Clear Channel Communications in the top 50 markets along with the nine stations in Charlotte, NC, Augusta, GA, and Indianapolis, ID? What are the benefits and risks?
2. Are the cash flow projections for the potential new markets reasonable?
3. What are the incremental after-tax cash flows for 2001 through 2004 for the potential new markets? Use the information in Exhibit 9 along with your estimate of capital expenditures, working capital, and taxes to estimate the after-tax cash flows.
4. What discount rate is appropriate for valuing the after-tax cash flows?
5. What terminal value should be used to estimate the value of cash flows beyond 2004?
6. What price should Radio One offer based on the discounted cash flow analysis?
7. What price should Radio One offer based on a transaction and trading multiples analysis?
8. Assuming that Radio One's stock price is 30X BCF, can it offer as much as 30X BCF for the new stations?
9. What should Radio One offer for the new stations?