



Tim Thompson
Financial Decisions
Finance 442, Section 71
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SYLLABUS

Overview

This class deals with applications of financial theory to cases of financial policy and corporate strategy. While the only prerequisites for Financial Decisions are Finance I and Finance II, Financial Decisions should be considered a capstone course in corporate finance. Corporate financial decisions are not made in a vacuum and many other courses (e.g., Strategy, Marketing, Business Law, Tax, Accounting, Investment Banking) at Kellogg cover valuable information for the cases we study.

References

1. *Case packet*. Contains the cases we will cover, as well as outside readings, teaching notes, lecture transparencies, etc.
2. *Valuation: Measuring and Managing the Value of Companies*, 4th edition, by Tim Koller, Marc Goedhart and David Wessels. Recommended, but each group should have at least one copy of this book.
3. *Principles of Corporate Finance*, by Richard Brealey, Stewart Myers and Franklin Allen, McGraw-Hill, any edition. Recommended. This is the book you used in Finance I/II. Used largely as a review of material covered there.
4. *Class handouts and web documents*. From time to time, I will hand out additional readings in class. Some readings, including some teaching notes, will only be available on the web page.

Office Hours

My scheduled office hours will be 5:15-6:00 in the faculty offices at Wieboldt on the night of class. Appointments can be made to meet other times.

The easiest way to get a question answered quickly is to send me an email. I check my email often and will gladly reply. Well all right, I'm not always glad about it, but I do try to reply quickly. Please identify that you are a TMP Financial Decisions student.

Please see section on “Expectations.”

Grading

The breakdown of the performance measurement to be used in the class follows:

Case write-ups, except for midterm case and final case (equally weighted)	40% of total
Midterm case	15% of total
Final case	20% of total
Class Participation	20% of total
Peer evaluations	5% of total

Group Assignments

Groups will be formed the first night of class. Case write-ups are to be handed in by each group (one paper per group) at the beginning of class.

Group performance is assessed on the case write-ups. Minimum group size is three people; maximum size is six people.

At the end of the quarter, you will be asked to give each of your group members a grade on their performance within your group. I will hand out peer assessment forms which I will use to assess the quality and quantity of each group members contribution to the group performance. This assessment will enter into each student performance measurement as outlined above. A copy of the peer assessment form is on page 8.

You should read the peer assessment form to think about how your group members will be assessing your performance and to think about what expectations you should have about your peers’ performance. You should discuss, at your first group meeting, what your expectations are concerning one another’s performance and behaviors. There are surprisingly few serious group problems in Financial Decisions, but when they occur, they are always due to poor communication and expectations-setting.

Case write-ups

Case write-ups should take the form of case solutions. You should take the perspective of an external consultant to the case decision maker(s) such as the CEO, CFO or Board of Directors. Your case solutions are recommendations concerning the appropriate course of action. Read the following section on format carefully.

Format of case write-ups

The format of case write-ups should begin with a short executive summary stating what course of action should be followed and a succinct description of why. A short list of key assumptions made in your analysis should follow next, followed by the logic of your argument leading you’re your recommendation. (The executive summary plus the key assumptions should not exceed one page. The bulk of your paper should be the logic supporting your recommendation.)

Key assumptions are not numerical estimates – defer numerical estimation assumptions to the tables and exhibits.

Case write-ups are limited to three pages of text (typed, double-spaced, with reasonable point sizes and margins). Supporting tables, spreadsheet exhibits and graphs (herein called *exhibits*) are limited to five pages (unless specifically waived for particular cases).

The exhibits should be referred to in the text of the paper **as they are needed** to support the argument being made. Reference to exhibits should be as explicit as possible, telling the reader what exhibit to look at (and why), what numbers are particularly relevant to the point you are trying to make. Exhibits that are not needed should not be there and all exhibits should be referenced in the text.

Tables and graphs should be clearly labeled: the **assumptions** being maintained and the **formulas** being used should be **obvious to the reader**. Care in preparing the tables is very important: for example, formatting the numbers on spreadsheet exhibits so that the table fits on a page and yet is easy to read without a magnifying glass (by me). When referring to how the calculations on the exhibit are done, you should use footnotes or a legend of some sort, with the calculations described in words or in formulas, **not using spreadsheet formulas**.

A rule of thumb on clarity is that the tables should be able to stand alone: i.e., they could be read without reading the text and the reader could discern exactly what they should learn from the exhibits.

Class participation

Class participation grades will be based on the quality and quantity of in-class participation. Discussion before or after class or in my office does not count. A necessary (but not sufficient) requirement for participation is presence. If you are not in class, you can not have participated. You do not need to tell me that you are going to miss a class, but your performance assessment will be negative if you are not there. I will begin each class with “cold calls” on individuals from the seating chart.

It is very difficult to assess class participation, so there are some important rules concerning attendance. First, always have and display your name plates, even after you are sure I know your name. I also ask that, except in special circumstances, that you sit near your group members. There will be a seating chart handed out on the second day of class and you should sit in your assigned seat from that point on.

Peer evaluations

Group work is the foundation of the Financial Decisions experience and all written assignments are assessed as group product. While this format works very well, the potential for a free-rider problem is clear. The peer evaluations serve to mitigate this free-rider problem.

Class size, waiting lists and auditing

Finance 442 has a 50-person enrollment restriction because of the difficulty of running a class participation-oriented class effectively with more than 50 students. This has nothing to do with the number of open seats. We would prefer to have less than 50 students per section, but 50 is the cap.

If you are on the wait-list, I will make no assurances that there is any probability that you will get in the class. If you do, fine; if you don't, I'm sorry. I will not make statements about how many people have gotten in off the wait-list in the past.

I do not allow auditing, under any circumstances. If you are wait-listed, you can see if you get in, but when the add period is over, you may not continue to attend if you do not get in.

Expectations

At class sessions, I am the client. You are the consultants, well-trained in corporate financial principles. Between classes, I am available for basic theory and clarification questions, **although you should attempt to answer these questions within your group before asking me.** But I am not available for consultation about how to solve the cases, because this would give an unfair advantage over your classmates.

If your analysis contains information from outside sources, then you must properly cite your sources.

The finance department has a concrete rule: **we do not hand out solutions to cases.** During the case discussion, I will almost always put up an example of a solution, as a transparency or from a computer, or I will put it on the blackboard. We will go over the construction of the sample solution, but it will not be distributed. My responsibility is to explain how the analysis was done. Your responsibility is to understand that explanation. **Please do not be the student who asks whether a spreadsheet will be handed out or electronically distributed or posted. You won't believe the impact it has on your class participation score.**

Please also see the honor code and etiquette code.

Honor code

The structure of this class, especially the amount of group work and measurement of performance based on team product, makes the application of the honor code (for both students and teachers) a little trickier than in a midterm-final class. For example, I can not distinguish, other than information that is given to me on peer evaluations, to what extent one group member shirked on their group's behalf. The following examples, however, are concrete violations of the honor code: 1. Using, as a resource to complete any course requirements, any written or verbal account of a solution to any of the cases taught in the class. 2. Any communication to students in other sections of the class for whom a case is due at a later time concerning any details of the class discussion of the case. These are written very broadly, I realize, and certainly do not exhaust the

possible honor code concerns. The main issues I am addressing are the “unfair advantage” and “truthfully representing fact and self” tenets of the honor code.

Etiquette code

The purpose of the etiquette code is to reinforce an atmosphere of mutual respect in the classroom: not only towards the instructor, but towards your fellow students as well. I think it is a little sad that we need an etiquette code, because mutual respect should be expected anyway. Be that as it may, here are some of the main issues:

1. Attendance. Already discussed in class participation section.
2. Tardiness. Class sessions should be considered consulting business engagements with the CEO or Board of the client company. You would not be late to such meetings.
3. Coming and going. Students leaving class during the session should have a good reason. If you are dressed in interview clothes, I will assume you are going to an interview, which is a good reason. However, if you schedule all your interviews during my class, that probably is not a good thing.
4. Food in class. Beverages in class are fine. Food in class is okay as long as it is not disruptive or disgusting. (I am the arbiter.)
5. Computer etiquette. If you use a computer in class, it must not be disruptive to your classmates. The application must be pertinent to the class. No checking email or surfing the web or instant messaging. This is the cyberequivalent of reading a newspaper in class. The etiquette code has been updated to include language about inappropriate use of laptops: http://www.kellogg.northwestern.edu/stu_aff/policies/etiquette.htm

The list is not intended to be exhaustive. Reasonable behavior is the key.

Web page information

The web page contains a description of the course, access to documents for the course not in the case packet, such as the syllabus and some teaching note documents. Also, there will be case files accessible containing case exhibits from the cases.

Course outline

The topics and cases to be covered on each date are listed on page 7. For each class, if a case is to be covered (and a write-up is due), each group’s written case is to be turned in at the beginning of class. Everyone is expected to be prepared for a class discussion every day, whether a case write up is due or not.

A list of question to prepare for each case (or lecture) and the required and recommended readings (including the case) follows the course outline.

The exact set of cases we will cover is subject to some change, but not much.

The structure of the detailed assignment pages (beginning on page 9) is as follows: on a day where a case is covered, “Questions to discuss prior to class” are a smattering of issues (both key and tangential) related to the case which you can use to guide your group discussions. These

issues will usually be brought up at some point in the class discussion. (The case write-up should not be a list of answers to these questions. See the section titled "Case write-ups," above.) The readings refer to the case (or lecture) being covered on the same page: the readings are to be read before the class.

The readings include the case itself and other readings which may prove helpful in doing the case. The philosophy behind the available readings is that different people want different things out of Financial Decisions and different people have different backgrounds (some readings are review for some students, but brand new for others). The list of readings associated with each case is usually annotated pretty well to help you determine how helpful, necessary or essential each reading is to you.

The following page has the schedule of the specific cases and dates:

Session date	Topic and case
June 24	Introduction to course Introductory Lecture
July 1	Optimal capital structure and a conservative capital structure Estimating interest tax shields using APV Bond Ratings Case: <i>Bed, Bath and Beyond: The Capital Structure Decision</i>
July 8	Cost of capital concepts and Divisional costs of capital Case: <i>Marriott Corporation: The Cost of Capital</i>
July 15	Project cash flows: incremental cash flow issues Case: <i>Energy Gel – A New Product Introduction (A)</i> Begin Lecture on Corporate valuation
July 18	<i>Friday, make-up day</i> Finish Lecture on Corporate Valuation Lecture on Option Pricing and the Black Scholes model Financing decisions and tactics: warrants Case: <i>Chrysler's Warrants (just read the case, no write up due)</i>
July 22	Corporate valuation, leveraged buyouts, venture capital Midterm Case: <i>John Case Company</i>
July 29	Financing decisions and tactics: convertibles and other hybrids Case: <i>Avon Products</i>
August 5	Defending against hostile takeover (or IPO) Case: <i>Interco, or West Teleservices</i>
August 12	Equity financed acquisitions Case: <i>PepsiCo's Bid for Quaker Oats or TBA</i>
August 19	Valuing highly levered acquisitions Final case: <i>Pinkerton (A)</i>

GROUP MEMBER BEING EVALUATED:

Directions: Rate this member relative to his/her participation in and contribution to your group by circling the appropriate number. (1=unsatisfactory, 3=satisfactory, 5=exceptional)

					COMMUNICATION
1	2	3	4	5	Listens to and considers others' points of view
1	2	3	4	5	Is open to feedback
1	2	3	4	5	Communicates ideas well with others
1	2	3	4	5	Makes clear his/her personal expectations of group
1	2	3	4	5	Informs group when he/she will not make group timeline
					INNOVATION/IDEA GENERATION
1	2	3	4	5	Offers ideas on how to achieve group goals
1	2	3	4	5	Applies past knowledge to current projects
1	2	3	4	5	Offers alternative approaches to current ways of thinking
1	2	3	4	5	Challenges the status quo when necessary
1	2	3	4	5	Encourages innovative thinking among group members
					INITIATIVE
1	2	3	4	5	Works to enable group to move ahead efficiently
1	2	3	4	5	Goes beyond the requirements of the task
1	2	3	4	5	Looks for opportunities to improve
					TEAM ORIENTATION
1	2	3	4	5	Works well with group
1	2	3	4	5	Acknowledges and pays attention to group and individual activities
1	2	3	4	5	Treats all members as colleagues
1	2	3	4	5	Completes individual task requirements to achieve group goals
1	2	3	4	5	Gives other members credit for their ideas
1	2	3	4	5	Considers the superordinate group goal as the number one priority
1	2	3	4	5	Attends all group meetings or provides advance notice when absent
1	2	3	4	5	Informs group of his/her task so that it can be completed when absent

What strengths did this person bring to the group?

How could this individual be more effective in the group?

Would you like to work with this person again?

Evaluate the above person overall in 0.5 increments on a scale of 1 to 5:

What proportion of the group work would you attribute to this group member?

Lecture on APV vs. WACC valuation

The lecture will review the basic difference between the two most common discounted cash flow (DCF) valuation models when right hand side of the balance sheet effects are relevant: Weighted average cost of capital (WACC) and Adjusted Present Value (APV). Then it will introduce the ways in which financing effects such as interest tax shields and costs of financial distress enter these models.

1. Luehrman, Timothy A. *Using APV: A Better Tool for Valuing Operations*. Harvard Business Review, May-June 1997. Good to contrast with my teaching note. Professor Luehrman is a strong advocate for the APV method and he takes position of an advocate because, at Harvard, he probably found himself in enemy territory to some extent. At most business schools, such as Kellogg, this note would be “preaching to the converted.” My note takes a more agnostic stand on the issue, pointing out that each method is attempting to adjust for financing side effects of investment decisions and that each has its place. In **case packet**.
2. Inselbag, Isik and Howard Kaufold. *Two DCF Approaches for Valuing Companies under Alternative Financing Structures (and how to choose between them)*, Journal of Applied Corporate Finance, 1997. Works as an “examples” counterpart to my APV vs. WACC teaching note. Good that it brings out the point that any APV problem can be solved via a properly formulated WACC method, although it soft pedals on the circularity problem. Points out that the choice between methods, given the problem you are facing, is a matter of convenience, not theory per se, which is my stand as well. In **case packet**.

Bed Bath and Beyond: The Capital Structure Decision

Questions to discuss prior to class

1. How would you characterize the business risk of Bed Bath & Beyond? Review their financial performance.
2. Do you think Bed Bath & Beyond has too much cash? Should Bed Bath & Beyond lever up? Consider both the 40% and 80% debt-to-total capital proposals.
3. What capital structure would you recommend as appropriate for Bed Bath & Beyond? How much financial risk would Bed Bath & Beyond face at each of the proposed levels of debt?
4. How much potential value, if any, can Bed Bath & Beyond create for its shareholders at each of the proposed levels of debt?
5. How would the capital markets react to a decision by the company to increase the use of debt in the capital structure?
6. How might Bed Bath & Beyond implement a more aggressive capital structure policy? What are the alternative methods for leveraging up?
7. What arguments would you advance to persuade management to adopt your recommendation?

Readings

1. *Bed, Bath and Beyond: the Capital Structure Decision*, Kellogg School of Management Case No. 5-204-270, in case packet.
2. Koller, Goedhart and Wessels. Chapter 17, especially 487-504.
3. Brealey and Myers. Chapters 17 and 18 are fundamentals of capital structure. Chapter 24 discusses risky debt in more detail.
4. Piper and Weinhold. *How much debt is right for your company?* Harvard Business Review, 1982. **In case packet.** Somewhat dated, but very good article. Stresses the personal tax angle.
5. Comment and Jarrell. *The relative signaling power of Dutch-auction and fixed price self-tender offers and open market share repurchases*, Journal of Finance, 1991. **In case packet.** This is a very nice article about different types of repurchase methods, with solid empirical work addressing not only the size of market reactions to announcements of different types of repurchases, but also exploring the reasons for the different types of market reactions. Relevant to the case simply because the firm will use repurchases to affect its change in capital structure. It is tangential to the calculations, but useful real world.

Case hints

1. The case sets itself up as a vehicle to talk about optimal capital structure in the context of the “tradeoff” theory of the capital structure, in which the company “trades off” benefits of debt (primarily debt-related tax shields) against costs of debt (e.g., costs of financial distress like bankruptcy costs, distress related costs, agency costs of debt/equity relationship, etc.) In equation form:

$$V_L = V_U + PVTS - COFD$$

where V_L is the value of the levered firm (a function of the amount of debt in the capital structure), V_U is the value of the same firm if it had no debt in the capital structure, PVTS is the present value of future expected leverage related tax shields and COFD is the present value of all future expected costs of financial distress. Of the three terms on the right hand side of the above equation, only PVTS is reasonably easy to estimate quantitatively. The last term is best thought of in qualitative terms. The term V_U is conceivably estimable (e.g., using DCF methods). In this case, however, we do not want to do a full-blown corporate valuation. Instead, let’s *assume that the status quo corporation’s securities are correctly priced in the market*, that is, that the market is reasonably efficiently pricing BBY’s shares.

2. Specifically, as part of your recommendation for the appropriate capital structure for BBY, I want you to do the following calculations for each debt scenario:
 - a. Calculate the present value of all future interest tax shields assuming that BBY takes on a **constant perpetual level of debt** given in case Exhibit 8. **Assuming there are no other benefits of debt or costs of financial distress, what is the value of the levered firm?**
 - b. The case seems to assume that the company can buy back its shares at the current market price of \$37 per share. This is not reasonable. Assume that the company will announce its leverage decision and that it will use the proceeds to repurchase shares (along with \$400M of excess cash as per the case). The market price of the shares will then reflect the “added value” brought by the additional tax shields. This determines the price the firm will have to pay to repurchase shares. **Calculate how many shares BBY will repurchase and at what price for each scenario.**
3. For each of the proforma capital structures, try to assess the bond rating the company’s debt would receive.

Ameritrade Cost of Capital – We are not doing this case

Questions to discuss prior to class

1. What is the cost of capital estimate that Ameritrade should use when evaluating the proposed advertising program and technology upgrades? Why?
2. Towards answering #1, assume that Ameritrade will remain unlevered, so the task at hand is actually to estimate the unlevered cost of capital from Ameritrade investments (this is the same as the unlevered cost of equity for Ameritrade investments).
3. Ameritrade does not have a beta estimate as the firm has been publicly traded for only a short time period. Exhibit 4 of the case 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?
4. 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.
5. What is the estimate of the risk free rate that should be employed in calculating the cost of capital for Ameritrade?
6. What is the estimate of the market risk premium that should be employed in calculating the cost of capital for Ameritrade?
7. How should Joe Ricketts, the CEO of Ameritrade, view the cost of capital estimate you have calculated?

Readings

1. *Cost of Capital at Ameritrade*. HBS case number 9-201-046. **In case packet.**
2. Tim Thompson. *Estimating costs of capital I: Ameritrade*. Powerpoint slides. **In case packet.**
3. Chapters 7-9, 19 of BM for cost of capital. Chapters 6 and 9 of BM for capital budgeting.
4. The chapter on cost of capital in Koller, Goedhart and Wessels recommended text.
5. Tim Thompson. *Cost of Capital Notes: Teaching Note*. You should think about the issues in both the Ameritrade and Marriott cases before looking at this note. Look through BM, CKM, etc., and see that there is not complete consensus. Then try to figure out whom you agree with for different WACC calculation issues. Look at my note last, but save time: it's pretty long. **On the Web page in Acrobat Format.**
6. Bruner, Eades, Harris and Higgins. *Best Practices in Estimating the Cost of Capital*. In case packet. Nice review of practice.

Marriott Corporation: the Cost of Capital

Questions to be discussed prior to class

1. Are the four components of Marriott's financial strategy consistent with its growth objective?
2. How does Marriott use its estimate of the cost of capital? Does this make sense?
3. Using the CAPM, estimate the weighted average cost of capital for
 - a. Marriott Corporation
 - b. The lodging division
 - c. The restaurant division
4. Towards answering #3,
 - a. What risk free rate and market risk premium did you use to calculate the cost of equity? Why did you choose these numbers?
 - b. How did you estimate the required rate of return on the debt of the company and the divisions? Should the debt cost differ across the divisions? Why?
 - c. How did you measure the beta of each division?
5. What is the cost of capital for Marriott's contract services division? How can you estimate its equity costs without publicly traded comparable companies?

Assignment hint:

People often go into long discussions in their write-ups of the appropriateness (or inappropriateness) of different methods used by Marriott. While these discussions are interesting, all I'm really looking for in the write-up is the derivation of the costs of capital for each division and for Marriott as a whole.

Readings

1. *Marriott Corporation: The cost of capital (abridged)*. In case packet.
2. The readings on the Ameritrade case page

Energy Gel – A New Product Introduction (A)

Questions to be discussed before class

1. What is your assess of HPC's capital budgeting process currently in place? Would you recommend any improvements? What is the correct method to value the project?
2. Does Wickler have to consider costs for overhead and mixing machine usage? Why or why not?
3. Should Wickler include potential cannibalization in his estimates?
4. Should HPC invest in the Energy Gel Project?

Readings

1. *Energy Gel – A New Product Introduction (A)*, Kellogg School of Management case. In case packet.
2. Chapter 6 of BM.
3. Thompson, Tim. *Teaching Note: Project cash flows. On the Web Page in Acrobat Format*. Finance I treatment of capital budgeting with extension to corporate valuation issues we will analyze in this class. This is really the same as Chapter 6 of BMA, but with my jokes.

Maintained Assumptions about Market Risk Premia

In the upcoming assignments, the cases take place at different historical times with different market conditions. The risk free rate will obviously be different in each case, but for the sake of clarity, we will maintain a set of assumptions about market risk premiums. These assumptions will be assumed to be true for all future cases:

Market risk premium over long term T-bonds = 7%

Market risk premium over short term (one year) T-bills = 8%

Risk premium on long term T-bonds over short term T-bills = 1%

For Energy Gel, there is a hurdle rate given on Case Exhibit 5. This is a hurdle rate to be compared to an accounting rate of return, ROIC, and is not a discount rate. We don't have a perfect "peer" company in the case, but we can estimate a WACC for HPC given case information. This isn't perfect, but the case is really about cash flows more than the discount rate.

Lecture on Corporate Valuation

Readings on Corporate Valuation

1. Tim Koller, Marc Goedhart and David Wessels. Chapters 7, 8, 9, and 11 of **Valuation: Measuring and Managing the Value of Companies**. These were supposed to be in the case packet, but I ran into copyright difficulties. Someone in your group should have purchased the recommended text. Outstanding overview of many important valuation issues. Often is more detailed than we will be able to use in the cases, but is a very good introduction to valuation issues.
2. Tim Thompson. Teaching note on corporate valuation, powerpoint slides in case packet. Most important resource.

John Case Company

Questions to be addressed before class

1. Before considering price, does the purchase of John Case by the management group make sense? (For the sake of argument, the product looks like a dinosaur today. The case actually took place in the sixties, I believe, and they just adjusted the numbers to look like it was the mid-eighties. At the time of the case, the product looked very stable and its longevity was not so controversial. For the purposes of the assignment, assume that the future demand for the product imbedded in the cash flow forecasts is reasonable.
2. Based on case exhibit 7, estimate the free cash flows from operations for the years 1985-1990.
3. Extend the forecast to 1993, based on the forecasts given by management in Exhibit 7.
4. Assume the unlevered cost of equity for the Case Company is 17%. Estimate the value of the John Case Company from the perspective of the management team. Is it worth the \$20 million asking price?
5. Can management offer the venture capitalist a sufficient expected return (VC's hurdle rate is in 20%-25% range) to get their investment funds, yet maintaining for itself a controlling equity position? How?

Readings

1. *The John Case Company*, Harvard Business School case, in case packet.

Hints

1. Assume that the \$20 million purchase price would be financed as follows: \$0.5 million from the four managers; \$6 million of bank financing; \$4 million of seller financing (\$6 million face value of principal @ 4% interest, but only counts as \$4 million towards the purchase price); \$6 million of venture capital financing (see below); and \$3.5 million from the firm's cash balance.
2. Use APV to value the firm. Use a free cash flow growth framework to value the continuing value of the firm, assuming 5% growth in perpetuity.
3. Assume the expansion project discussed in the case section "Unexploited Opportunities" is not included in the forecasts in Exhibit 7 and do not include it. Value the firm as if these opportunities would not be pursued.
4. Sometimes people think they should throw in something about amortization of goodwill. Don't. At this time, goodwill amortization was not tax deductible and obviously is not a cash flow, so it shouldn't be considered in any way in a DCF valuation here. Also, assume "non cash charges" in Case Exhibit 7 is depreciation.
5. To answer the venture capitalist question, you will have to make some assumptions regarding the structure of the transaction. All that is known is that the venture capitalist is investing \$6 million in the firm up front, and receives in return loan payments on a \$6 million face value loan at an interest rate of 9% *plus* the right to buy some number of shares

at some future date (warrants). Assume the strike price on the warrants is \$1 per share. The management has 500,000 shares. Any shares purchased by the venture capitalist (when exercising their warrants) are *additional* shares. You can decide when the amortization of the VC loan occurs, but you can not pay off principal on the VC loan before John Case's loan is paid and before the original bank loan is paid off. It is convenient, usually, to assume that the VC can sell the shares they buy (by exercising their warrants) at close to fair value when they get them.

The venture capitalist's "targeted return" can be thought of as a hurdle rate, that they will apply to the cash flows of the entire package that they own. Like any other investment, they may discount the package's entire cash flows at their hurdle rate and see if it worth more than their investment amount (NPV) or they may calculate the IRR of the package's entire cash flows and see if the IRR is higher than their hurdle rate.

West Teleservices, Inc.

Questions to be discussed before class

1. What are the factors affecting the growth of the market for teleservices generally and, specifically, for outsourced teleservices?
2. How is West Teleservices performing compared to other firms in the industry? What is WT's strategy in this market and what are its comparative advantages?
3. Using multiples of industry comparables as a guideline, what IPO price do you think Ms. Little should recommend to WT management? Explain thoroughly.
4. When does a multiples approach to valuation make sense in general? Why do investment bankers use this approach to value firms? Specifically, why do bankers use this approach in the IPO context?
5. Why did multiples change over time in this industry? Do these changes make sense?
6. Given your assessment of the company's strategy and the sustainability of its performance, forecast the key value drivers for WT's stock value.
7. Using a discounted cash flow approach and the value drivers forecasted above, estimate the value of WT stock at the end of 1996. For simplicity's sake, you can assume that the weighted average cost of capital for WT at its intended target capital structure is 13.5% and that the firm is expected to grow at 6% per annum, indefinitely, after 2001. You will need to make additional assumptions. It may be helpful to think about the size of the industry and the current value of the other teleservices firms. How does this valuation inform Ms. Little's recommendation about the IPO price?
8. Do you think West Teleservices Inc., should sell equity at this time? Why or why not?

Readings

1. *West Teleservice Case*. Kellogg Case. In case packet.
2. Chapter 15 of Brealey and Myers.

Hints

When deciding on the range for the IPO price, you may want to inform your decision with the S&P analyst report in Exhibit 6.

Lecture on Applications of Option Pricing in Corporate Finance

Readings

1. Chapters 20, 21, 24, BM.
2. Transparencies on Black-Scholes model, in case packet. These will represent some of the material covered in the Lecture.

Chrysler Warrants

Questions to discuss prior to class

1. Value the Chrysler warrants held by the government on four dates: January 7, 1980 (see case exhibit 6); April 8, 1980 (see case exhibit 7); May 12, 1980 (see case exhibit 8) and September 1, 1983 (see case exhibit 4). Why did the warrants' value change over this time?
2. To test the estimate of the standard deviation given in exhibit 4, use the data in case exhibit 10 on Chrysler's publicly traded warrants to solve for the standard deviation implied by the warrant's price.

(Hint here: On Exhibit 10, the implied standard deviation value for the September 1, 1983 numbers is ridiculously large. Don't believe it, give the number no credence in your writeup.)

3. Value the government's loan guarantee as of May 12, 1980. Remember that it amounts to a put option, which allows the banks to put their risky Chrysler loans to the government. The variance of returns on Chrysler debt is suggested by case exhibit 11.
4. From a financial perspective on an ex-ante basis (at the beginning of the deal), evaluate the position of the government, considering the loan guarantee as of May 12, 1980, taking into account the expected fees and the current value of the warrants?

KEY QUESTION: What price should Chrysler bid for its warrants in September 1983?

- a. In particular, why does Chrysler want the warrant back so badly?
- b. How does it benefit their shareholders to repurchase the warrants?

Readings

1. *Chrysler Warrants (1983)*, in case packet.
2. There is a LOTUS spreadsheet (named BS.WK1) on the network which calculates Black-Scholes option prices. There is also a spreadsheet (WARRVAL.WK1) which makes a simple modification of the BS.WK1 program to calculate warrant values. There are also Excel spreadsheet programs provided by Bob McDonald. See Web page.

Avon Products, Inc.

Questions to discuss prior to class

1. What has been Avon's business strategy since the late 1970's?
 - a. Operating?
 - b. Financial?
2. Evaluate Avon's investment and financing decisions in the 1980's. Why is Avon restructuring its business in 1988? Do the proposed changes make sense?
3. Evaluate Avon's financial condition in mid-1988. Why does Avon want to reduce its dividend?
4. What is the purpose of the exchange offer?
5. What, specifically, is motivating the design of the PERCS security?
6. As an institutional investor holding Avon stock, how would you evaluate the trade off between accepting the new preferred and keeping the common stock? Might you just sell the common stock and ignore the offer altogether?
7. What do you think the net impact of the Avon announcements will be on the stock price?
8. What features of the PERC's security represent imbedded "options"?
9. Ignoring the possibility of early redemption, liquidation, and assuming that the common stock dividend remains at its "new" level until the maturity of the PERC's security, determine the cash flows the PERC's will receive holding the PERC's security. Compare these with the cash flows the holder would have received had they had their old common stock *and* Avon did not offer the PERC's *and* AVON had an equivalent reduction in total dividends. (As per my teaching note.)
10. Using the same assumptions as in #9, show that the payoff to a holder of PERC's is equivalent to the payoff on a portfolio containing the same number of shares of Avon common (if there had been no PERC security) plus the extra dividend payment per quarter plus *selling a call option* on Avon shares with strike price equal to \$31.50 per share and maturing on 9/1/91. Using the Black Scholes model, estimate the value of this option and reconsider #6. (As per my teaching note.) Should shareholders exchange their shares for PERC's or not? What assumptions are particularly important in making these conclusions?

Assignment hints:

To estimate the imbedded call option in the PERCS security, you need to know the typical parameters for estimating calls via the Black Scholes model: the stock price, the strike price, the time to maturity, the volatility of the underlying security, the risk free interest rate and the dividend yield on the underlying security. As usual, the volatility estimate represents a challenge, but surprisingly, the stock price itself is unclear for two

reasons: first, the underlying security from which the PERCS derives its value is not Avon stock, but the total value of Avon equity if there were no PERCS in the capital structure (see my Teaching note on PERCS). The pseudo-share price, S^* , that is the relevant stock price is not the price of a share of Avon stock post-PERCS. Secondly, we need to estimate the value of the PERCS on an after-announcement basis --- the company is making several important announcements and it is not easy to say what the net effect of these announcements will be. Therefore, you should do a sensitivity analysis on the PERCS valuation for various values of S^* (post-announcements) and various volatility parameters. The CBOE calls on pre-announcement Avon shares can be used as a starting point for volatility estimation and you can keep in mind for a big picture that most corporate stock volatilities are between 25% and 45%.

Also, when using the traded options in Exhibit 6 to estimate the implied volatility of Avon stock, one of the quotes is a typo. The October 25's price is supposed to read "1 and 13/16," not "11 and 13/16."

Readings

1. *Avon Products, Inc.*, in case packet.
2. Thompson, Tim. *Contingent claims analysis - PERCS*, 1993. Title says it all. **On the Web page.**
3. Emery and Finnerty. *Using a PERCS-for-Common Exchange Offer to Reduce the Costs of a Dividend Cut*. In case packet. Interesting take on the specific issue addressed in this case. Read this paper critically --- think about the issues here, don't just buy their line with the hook and the sinker!

Valuation Methods in M&A and the Market for Corporate Control

Readings

1. Chapter 33 of BM (Chapter 32 in new edition).
2. Andrade, Mitchell and Stafford. *New Evidence and Perspectives on Mergers*. In case packet.

Interco

Assignment

1. Prepare a critique of Wasserstein-Perella's valuation analyses, including
 - a. Premiums paid analysis,
 - b. Comparable transactions analysis,
 - c. Discounted cash flow analysis --- If you find fault with any of WP's assumptions, methodologies, clearly delineate what you think the most influential errors are.
2. As a benchmark to your valuation estimate of the value of Interco (number 3 below), replicate (as well as possible) WP's valuation range using their DCF parameters. There are some parameters you are not given the values of, so there will not be total agreement, but you should be able to get 'close' to their numbers.
3. Prepare your own valuation estimate of the value of Interco and make your recommendations to the board of directors concerning:
 - a. An opinion of the "fairness" of Rales' offer,
 - b. Other alternatives for Interco to realize the value of the firm.

Readings

1. *Interco*, in the case packet.
2. Value Line Industry Review for Interco case, in case packet.

Hints

1. When preparing your own DCF valuation of Interco, you may do a "whole company" valuation rather than valuing the divisions separately and summing the divisions up to calculate the whole firm. (You are welcome to do divisional valuations also, but I am only requiring the company-wide version.) Towards this end, assume that the **unlevered beta** of Interco's portfolio of businesses is in the range of 0.8-1.0.
2. While any of WP's assumptions in their DCF model could be critiqued, pay special attention to the WACC and terminal value assumptions.

Vodafone Air Touch's Bid for Mannesmann

We won't be doing the Vodafone case, but it is in the case packet and these would be the questions. Vodafone is interesting in that it is hostile, like Interco, but is cross border/European/hostile, which makes it somewhat unique. It is also an equity deal, which is similar to Pepsi/Quaker.

Questions to be discussed before class

1. What was the strategic and economic rationale for Mannesmann's acquisition of Orange? Did Mannesman overpay for Orange?
2. Vodafone AirTouch proposed that each Mannesmann share would receive 53.7 Vodafone AirTouch shares, so that in aggregate Mannesmann shareholders would own 47.2% of the equity of the new combined firm.
 - a. As of December 17, what is the market value of the Vodafone shares received by Mannesmann shareholders? As a Mannesmann shareholder, would you accept the current offer? If not, what fraction of the combined entity would you demand? As a Vodafone shareholder would you support this proposed transaction?
 - b. What is the present value of the expected synergies (in pounds) as shown in Exhibit 10 as of March 2000? (You may want to assume that the synergies related to revenues and costs would grow at 4% annually past 2006, but savings from capital expenditures would not extend beyond 2006, and that the merger will not affect the firm's level of working capital.) Given these synergy estimates, as a Mannesmann shareholder would you accept the current offer? If not, what fraction of the combined entity would you demand? As a Vodafone shareholder would you support this transaction? Use the average exchange rate of 1 pound = 1.5789 Euros to convert pound synergies into Euros.
 - c. How does this estimate of synergies compare with those put forth by the Vodafone AirTouch board and by other analysts? (Hint: see page 6 in the case.)
 - d. U.K. equities returned 7.7% (in pounds) over the UK risk free rate for the period 1919-1993 and 6.8% over the risk free rate for the period 1970-1996. How might this observation affect your decision?
3. What hurdles is Vodafone Air Touch going to face to complete its acquisition of Mannesmann? Who is going to be its most likely supporter? Who is going to resist? Why?
4. How is the German Corporate Governance system different from the Anglo-Saxon system?

Readings

1. *Vodafone Air Touch's Bid for Mannesmann*. HBS case number 9-201-096. In case packet.

PepsiCo's Bid for Quaker Oats (A)

Materials for the case:

1. PepsiCo's Bid for Quaker Oats (A). Harvard Business School Case.
2. Value Line report for Quaker Oats.
3. Value Line report for PepsiCo.

Assignment:

In analyzing the case, you are to take the position of financial advisers to the management and board of PepsiCo. In particular, the PepsiCo board would like your input on the following issues:

- 1) Strategic fit between PepsiCo and Quaker Oats.
- 2) Value Quaker "as is", with the three following methods:
 - a) Discounted Cash Flow based on historical results and additional information provided in the case. To accomplish the task, assess the separate values of Quaker's Beverage business and Food business, using the following instructions:
 - i) General assumptions (applies for both divisions):
 - (1) Present a detailed forecast for the results from 2001 until 2005.
 - (2) Inflation rate is projected to be 2.5% in the future.
 - (3) Tax rate is 35%.
 - (4) Quaker Oats is expected to maintain leverage (both for food and beverages divisions) similar to the industry levels.
 - ii) Food division: Forecast future results based on assumptions, estimated from **historical** data.
 - iii) Beverages division:
 - (1) The case has revenue and EBIT growth forecasts that can be used for the projections. Are these projections reasonable?
 - (2) Assume that CAPEX net of depreciation equals to 25% of sales growth in 2001, and drops to 15% of sales growth in 2005.
 - b) Valuation of Quaker "as is" using the multiples method and data for comparable firms.
 - c) You received a forecast for Quaker Oats financials that Value Line published. This is an "as is" forecast that does not consider a current acquisition offer. General instructions and explanations for the Value Line forecast:
 - i) Value Line page includes forecast in bold font.
 - ii) Value Line calculates operating margin before deduction of depreciation.
 - iii) Please treat column 03-05 as a forecast for 2004.
 - iv) For cost of equity calculation use the beta provided by Value Line.
- 3) What are the sources of synergy between PepsiCo and Quaker Oats? What are these synergies worth?
- 4) What is the maximum price PepsiCo should be willing to pay for Quaker? What is the minimum price you believe that Quaker's management would agree to?
- 5) Evaluate PepsiCo's share price using the attached Value Line's projections.
- 6) Assuming that PepsiCo's board is only interested in making a stock-for-stock exchange offer, how would you structure an initial bid for Quaker Oats?
- 7) Assuming the merger goes through, what should PepsiCo do with the Quaker Oats Food division?

Note: There is a misprint in footnotes "a" of Exhibits 5, 6 and 7 of the case (Quaker's financial statements). The notes refer to the partial-year data: All three should read, "Data

represent the first three quarters of 2000, finishing on *September 30, 2000*". The excel files were corrected accordingly.

Additional Note: The beta estimates for the food companies are too low. You should adjust the betas from Exhibit 12 using the "1/3 of the distance to the goal line" approach discussed in my Cost of Capital teaching note.

Pinkerton (A)

Questions to discuss prior to the class

1. What would be the sources of value to CPP from the acquisition of Pinkerton?
2. Could CPP improve Pinkerton's performance? Why or why not?
3. Is Pinkerton worth the \$100 million asking price? Can Wathen justify paying this price? Did the earlier \$85 million bid make sense?
4. Which financing plan would you recommend? What considerations are there in your recommendation?
5. Towards question 4, what is your feeling about the feasibility of the two financing scenarios – which has larger costs of financial distress?

Important!! If you decide, based on your analysis, that Pinkerton is not worth the asking price, assume that Wathen can negotiate the price down below your valuation. Assume that the same financing plans are available (just scaled down to the purchase price you assume) and assess which financing plan is superior.

Assignment hints

1. Use APV to value Pinkerton from the perspective of CPP.
2. Using the data given in the text of the case, find the unlevered cash flows of Pinkerton – the case gives an **expected** scenario and a **pessimistic** scenario for several items. Assume the expected reflects the **expected value**, not an optimistic scenario. The following table **summarizes the expected cash flow forecast parameters**.
3. **You need the change, not the level**, in net working capital to calculate cash flows, not the level. You **also need the change in Net PP&E to calculate (Capex minus Depreciation)** – assume that depreciation has already been subtracted out in the gross margin.

Forecast parameters (expected)	1988	1989	1990	1991	1992
Revenues as % of 1987 rev	90%	80%	70%	G = 5%	G = 5%
Gross Profit Margin (% of sales)	8.5%	9.0%	9.5%	10.25%	10.25%
Operating Expenses (% of sales)	6.0%	5.9%	5.8%	5.8%	5.8%
Net PP&E (% of sales)	4%	4%	4%	4%	4%
Net Working Capital (% of sales)	8.6%	7.4%	6.2%	6.2%	6.2%

4. Assume Pinkerton, Wackenhut and CPP are all in the 34% tax bracket. Assume that cash flows of Pinkerton, CPP and the synergies all would grow at 5% in perpetuity. Assume that Wackenhut is A rated. Like in the John Case Company case, amortization of goodwill was not tax deductible at the time and was not a cash flow, so your DCF's should not include any aspect of value associated with goodwill amortization.