

HCMG 849: Financial Management of Health Institutions

Fall 2011, MW 3:00-4:20, JMHH G55

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Health Care Management
Office: MW 1:30-2:30 and by appt.

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TA and liaison: Michael Meng, second year; office hours to be announced

Prerequisite: Finance 601, equivalent, or instructor permission

Overview

The course focuses on the application of quantitative financial analysis to investment, financing, and operating decisions in the health care sector.

Analytical methods covered:

- Discounted cash flow, comparable firm, and venture capital valuation
- Expected net present value, decision tree, and real option valuation of products in development
- Payor/provider product-line performance evaluation

The course is structured around six cases dealing with the biopharma, device, managed care, and provider sectors. The cases, which are accompanied by background on relevant institutions and markets, examine the following decisions/situations:

- Estimating the value of a publicly-traded medical device company acquisition
- Estimating the value of a drug in development using expected NPV valuation
- Analyzing financing and deal structure for a start-up device company
- Estimating the value of a drug in development using decision tree analysis and option pricing
- Evaluating profitability of different customer cohorts and associated strategy for a Medicare managed care organization
- Evaluating financial alternatives for a health system (tentative)

The approximate breakdown of the course by sector / subject is:

- Pharmaceuticals, biotechnology, and devices (\approx 17 sessions)
 - Valuing companies with revenue-generating products – Case 1
 - Valuing products in development – Cases 2 & 4
 - Funding early stage ventures – Case 3
- Payors and providers (\approx 7 sessions)
 - Managed care organizations – Case 5
 - Health systems – Case 6

WebCafé room

The cases and readings will be posted in the course WebCafé room. A copy of the lecture slides usually will be distributed in class. The slides will be posted on WebCafé after class.

Case teams, write-ups, and presentation

Groups of **three or four** students should assemble to form a case team. Each team will be responsible for submitting 5 case write-ups and presenting one case in class. A case write-up should consist of no more than 6 pages of text, with as many supporting exhibits and figures as needed. The written report should address the suggested discussion questions that are included with each case, as well as any additional issues that the team regards as important and/or interesting.

A team's oral presentation should take approximately 20 minutes. Each member is required to participate. The presenting team should turn in its slides/overheads and **may** also turn in a write-up if the presentation slides will not fully reflect adequately the team's analysis.

A team member's overall case grade may be adjusted based on teammate evaluations.

Exam

An exam will be given in class on November 21. You can bring one sheet of paper with helps on one side. This exam may be made up subject to University rules for making up a final examination. If necessary, the makeup exam will be given at 3 p.m., Dec. 21 (the final examination time for MW classes beginning at 3:00).

Course grade

	<u>Numerical Weight</u>
Case write-ups	40%
Case presentation	15%
Class participation	20%
Exam (November 21 in class)	25%

Protocol

- Attendance is important, **including all case and outside speaker dates**.
- No laptops, netbooks, iPads, cell phones, smart phones, electronic readers, etc. during class.
- There will be a seating chart.

Date	Topic	Reading
Sept. 7	The financing environment	
Sept. 12	Valuing health companies: overview of methods; background on device sector	1. Healthcare: Products and supplies
Sept. 14	Cost of capital; more Case 1 background	2. Cost of capital for biotech, pharma, and device firms
Sept. 19	ENPV of a drug in development	3. Returns on research and development
Sept. 21	Case 1 due: Medtronic/Kyphon; guest (off-site) discussant: George Montague, VP Finance and Strategy, Restorative Therapies Group, Medtronic	4. Vertebral compression fracture treatments under pressure
Sept. 26	Guest Speaker – Geoff Porges, Sanford C. Bernstein	
Sept. 28	Understanding and valuing licensing arrangements	5. The economics of licensing contracts
Oct. 3	Guest Speaker – Steve Kroghes, CFO, Genentech	TBA
Oct. 5	Case 2 due: Estimating the ENPV of a drug	
Oct. 12	Guest Speaker – Geoff Myerson, Locust Walk Partners	
Oct. 17	Valuing early stage ventures	6. In defense of life sciences venture investing
Oct. 19	Alternative financing structures	7. With pharma ready to pare portfolios, project financing funds make their pitches
Oct. 24	Case 3 due: Financing an early stage device co.	
Oct. 26	Valuing development flexibility with decision tree analysis	8. Valuing pharma R&D: the catch-22 of DCF
Oct. 31	Valuing flexibility with real options	9. Getting real about valuation in biotech
Nov. 2	Guest Speaker -- Michael Aberman, VP Strategy and IR, Regeneron Pharmaceuticals	
Nov. 7	Case 4 due: Valuing flexibility in drug development	
Nov. 9, 14	Managed care financing, plan design, and portfolio management	10. Medicare Advantage: private health plans in Medicare 11. What's wrong with minimum MLRs and rate review?
Nov. 16	Case 5 due: Plan design in the Medicare HMO market	
Nov. 21	Exam	
Nov. 28	Issues in health system financial management	12. Analyzing shifts in economic risks to providers
Nov. 30	Guest speaker – Michael Dandorph, Senior VP of Business Development, U of PA Health System	
Dec. 5	Guest speaker – Steve Filton, CFO, Universal Health Services, Inc.	
Dec. 7	Case 6 due: Health system financial analysis (tba)	

Assigned Readings (*posted on WebCafé*)

1. **Healthcare: Products and Supplies**, pp. 1-33, by Phillip Seligman, August 11, 2011, *Standard & Poor's Industry Surveys*.
2. **The Cost of Capital for Biotechnology, Pharmaceutical, and Medical Device Firms**, by S. Harrington, 2010, in P. Danzon and S. Nicholson, eds., *The Handbook of the Economics of the Biopharmaceutical Industry*, in press.
3. **Returns on Research and Development** for 1990s New Drug Introductions, by Grabowski, J. Vernon, and J. DiMasi, *Pharmacoeconomics* 20, Suppl. 3 (2002): 11-29.
4. **Vertebral Compression Fracture Treatments under Pressure**, by T. Salemi, December 2010, *IN VIVO*.
5. **The Economics of Licensing Contracts**, by R. Mason, N. Savva, and S. Scholtes, *Nature Biotechnology* 26 (August 2008): 855-857.
6. **In Defense of Life Sciences Venture Investing**, by B. Booth and B. Salehizadeh, *Nature Biotechnology* 29 (July 2011): 579-583.
7. **With Pharma Ready to Pare Portfolios, Project Financing Funds Make their Pitches**, by A. Lash, June 2010, *IN VIVO*.
8. **Valuing Pharma R&D: The Catch-22 of DCF**, by R. Villiger and B. Bogdan, *Journal of Applied Corporate Finance* 17 (Spring 2005): 113-116.
9. **Getting Real About Valuations in Biotech**, R. Villiger and B. Bogdan, *Nature Biotechnology* 23 (April 2005): 423-428.
10. **Medicare Advantage: Private Health Plans in Medicare**, Congressional Budget Office Economic and Budget Brief, June 28, 2007.
11. **What's Wrong with Minimum MLRs and Rate Review?**, by S. Harrington, January 2011.
12. **Analyzing Shifts in Economic Risks to Providers in Proposed Payment and Delivery System Reforms**, by J. Goldsmith, *Health Affairs* 29 (July 2010): 1299-1304.

The textbook *Principles of Corporate Finance*, by Brealey, Myers, and Allen, provides useful background for the first half of the course (9th ed. Chapters 3, 6-10, 18-19, 21-23).