

Venture Capital and the Finance of Innovation

Professor David Wessels, The Wharton School of the University of Pennsylvania

FNCE 250/750 Fall 2008, MW (F95 10:30, G60, 1:30PM & 3:30PM)

This course will focus on the funding, valuation, and capital structure design related to venture capital and high growth, privately held company.

We start by outlining **how venture capital funds are organized**, how and from who they raising capital, and in what type of firms do they typically invest. A good portion of the section will **examine the risk return profile of venture capital** and whether venture capital “beats the market,” whether it lowers risk of the limited partner’s portfolio, and how the high uncertainty of growth firms should be priced.

The **second section** of the course will examine corporate valuation and value drivers. Given the incredible uncertainty associated with high-growth companies, alternative methods such as **key value driver models and comparable transactions** must be employed to triangulate results. Special attention will be given to the valuation process for small, illiquid, high-growth companies versus mature companies. For instance, how do you bound reasonable estimates of revenue growth, margins, and capital productivity when little historical data is available?

The **third section** of the course will examine valuation techniques necessary to **value complex securities** associated with venture capital and high growth companies. Preferred stock held by venture capitalist has conversion features that resemble a combination of debt and equity. Therefore, options models must be employed to determine their true (versus fully-diluted) value.

During the **final section** (time permitting), we discuss **corporate venture capital using real options**. Real options combine decision trees with options valuation theory from the financial markets (i.e. calls, puts, and forwards).

Complementary Classes: The class will focus on the financial aspects of funding and valuing high growth companies. A **critical skill** to venture capital that we will NOT cover is screening and selecting potential investments using business plans. For more on this topic, I highly recommend Entrepreneurship MGMT 230) and Venture Capital and Entrepreneurial Management (MGMT 264).

Reading Material

The course will rely on a textbook, a supplemental reader, and article downloads (which can be found on the download website). The textbook can be purchased on Amazon.com:

“Venture Capital and the Finance of Innovation” by Andrew Metrick, 2007, John Wiley & Sons, Inc, NY.

The course will also rely on chapters from a secondary text:

Valuation (4rd Ed) by Koller, Goedhart, and Wessels, 2005, John Wiley & Sons, Inc, NY.

These chapters will be provided for you on webcafe. Lecture notes and articles will be distributed in class and will be available on webcafe. There will be a lot of additional material (mostly lecture notes), so you should purchase a binder for course slides and articles.

Assignments

There will be three graded assignments (each worth 10%) and a midterm quiz (worth 20%). The final exam will be worth half your final grade and will be cumulative. For group work, please self select groups of between 3-5 people, no exceptions. Class participation will not formally be scored, but students at the grading cutoffs will be evaluated for their ability to generate an active and positive class environment.

1. Group Project 1: Due Diligence
2. Midterm Quiz (10/8/08)
3. Group Project 2: Private Company Valuation
4. Group Project 3: Capital Structure
5. Final Exam (Determined by Registrar)

Project due dates will be announced when the assignment is distributed, but no earlier than 3 class sessions in the future.

Special Circumstances:

When I agreed to teach this course in April of 2008, I had already made three commitments to speak in Europe to Wharton affiliates as part of global development programs. Therefore, we will not be holding class on September 10, October 15, and November 5.

Course Schedule

	Date	Session Topic	Associated Reading
Venture Capital Funds	9/3/08	Overview of the Venture Capital Process & Industry Statistics	Metrick Chapter 1
	9/8/08	Fundamentals of Fund Structure	Metrick Chapter 2
	9/10/08	<i>NO CLASS – Professor Wessels in Europe</i>	
	9/15/08	Risk & Return in venture capital: Theory	Metrick Chapter 4
	9/17/08	Risk & Return in venture capital: Empirical evidence	Metrick Chapter 3
	9/22/08	Fund Structure: VC Incentives, Conflicts, & Persistence of VC Performance	Metrick Chapter 5
Valuing High Growth Companies	9/24/08	Value Creation: Debunking Rules of Thumb	Valuation Chapter 3
	9/29/08	Value Creation: Key Value Drivers	Valuation Chapter 6
	10/1/08	<i>Guest Speaker: Understanding the Business (Case)</i>	TBD
	10/6/08	Venture Capital valuation: Simplified DCF Valuation Overview	Metrick Chapters 10-11
	10/8/08	MIDTERM EXAM	
	10/15/08	<i>NO CLASS – Professor Wessels in Europe</i>	
	10/20/08	Venture Capital valuation: Analyzing the Financials	Valuation Chapter 7
	10/22/08	Venture Capital valuation: Forecasting free	Valuation Chapter 8

		cash flow	
	10/27/08	Valuation multiples & Terminal values	Metrick Chapter 12
Capital Structure & Financing Growth	10/29/08	Term Sheets & Entrepreneur Incentives	Metrick Chapter 8
	11/3/08	Capital Structure in VC Backed Firms	Metrick Chapter 9
	11/5/08	<i>NO CLASS – Professor Wessels in Europe</i>	
	11/10/08	Fundamentals of Options Pricing	Metrick Chapter 13
	11/12/08	Valuation of Series A Preferred	Metrick Chapter 14
	11/17/08	Valuation of Later Rounds	Metrick Chapters 15 & 16
	11/19/08	Going Public: IPO Process, Book building & Auctions	A Guide to the Initial Public Offering Process (Ellis, Michaely & O'Hara)
	11/24/08	Going Public: Underpricing & VC Grandstanding	A review of IPO Activity, Pricing, and Allocations (Ritter & Welch)
Financing Innovation in Large Companies	11/26/08	Overview of Corporate R&D	Chapter 19
	12/1/08	Real Options: Decision Trees vs. Options Pricing	Metrick Chapters 21 & 22
	12/3/08	Real Options: Building a Portfolio of Options	Entrepreneurial Mindset (McGrath and MacMillan)