# ENTREPRENEURIAL FINANCE AND PRIVATE EQUITY

ENTREPRENEURIAL FINANCE AND PRIVATE EQUITY (EFPE) explores a comprehensive set of financial situations that arise in high growth and high risk enterprises. We cover early to late stage enterprises to provide perspective on how the maturity of an organization influences the nature and structure of financing and valuation. The course examines issues related to the measurement of returns in private equity funds, the value of enterprises at different stages of development, and the structure of deals using various contract terms and forms of financing. The focus of this course is on *analytical tools and methods* – to better measure performance or to value enterprises and intellectual property. Each party’s view of the value of the enterprise forms a basis for negotiation upon which the percent of equity participation and the terms of the contract are chosen. The terms depend not only the deal itself but also on the custom and practices of the industry and prevailing market conditions.

Over the past decade there has been tremendous growth in private equity. In terms of the dollars invested, the U.S. is the relative leader in venture capital and buyouts. Based on the year to date statistics through September 2009, there are signs of slowing – as neither the number of deals nor the total dollars invested appear likely to reach 2008 levels in the U.S. or globally.[[1]](#footnote-1)

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| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Private Equity Investment** | | | | | | | | |
|  | Venture Capital | | | | Buyouts | | | |
| Year | No. of Deals | | Investment  (US$ MM) | | No. of Deals | | Investment  (US$ MM) | |
|  | US | World | US | World | US | World | US | World |
| 2000 | 8,779 | 5,807 | 117,977 | 35,303 | 3,424 | 1,869 | 85,064 | 32,734 |
| 2001 | 5,520 | 4,123 | 45,672 | 27,825 | 2,035 | 1,526 | 32,390 | 25,672 |
| 2002 | 5,351 | 2,650 | 27,711 | 15,057 | 1,116 | 1,007 | 27,197 | 18,574 |
| 2003 | 5,324 | 4,090 | 31,974 | 14,543 | 1,077 | 1,678 | 45,579 | 21,769 |
| 2004 | 4,702 | 4,273 | 31,958 | 18,305 | 1,195 | 2,204 | 33,796 | 17,808 |
| 2005 | 3,991 | 3,850 | 34,203 | 20,497 | 1,435 | 2,274 | 33,126 | 22,370 |
| 2006 | 3,604 | 4,353 | 42,454 | 32,269 | 1,845 | 2,353 | 49,084 | 43,163 |
| 2007 | 3,833 | 3,602 | 55,180 | 41,361 | 2,651 | 2,877 | 69,682 | 55,054 |
| 2008 | 3,706 | 3,321 | 63,175 | 26,470 | 2,338 | 2,471 | 48,093 | 40,536 |
| 2009YTD | 2,314 | 1,357 | 20,112 | 13,353 | 936 | 836 | 17,219 | 16,943 |
| Total | 47,124 | 37,426 | 470,416 | 244,982 | 18,052 | 19,095 | 441,231 | 294,623 |
| % of Total | 55.7% | 44.3% | 74.5% | 25.5% | 48.6% | 51.4% | 60.0% | 40.0% |

Despite this overall growth, private equity remains a relatively small part of total invested dollars. For every dollar of private equity in the portfolio of U.S. institutional investors, there is approximately $40 of publicly traded equities. While there is strong consensus that private equity will grow, entrepreneurial firms will continue to face sizeable challenges in accessing capital.

**Why Study Private Equity?**

First, an important motivation to study private equity is what it teaches us about finance in general. The situations encountered in private equity often stretch the assumptions used in standard valuation methods (i.e., the traditional CAPM), and thus the practice of entrepreneurial investment requires good judgment in altering existing methods to fit this new context. The class is intended to both broaden and deepen a student’s understanding of corporate finance. Second, the private equity market is becoming increasingly institutionalized. The “back of the envelope” calculations that once sufficed are not likely to prevail in the future and the course critically explores some of the latest valuation methods and assesses their usefulness. Third, new institutions are entering the private equity market and are drawing on their traditional strengths to tap and compete in this market. Banks extend loans to start-up firms, investment banks have started merchant banks to take positions in start-up companies, and non-bank financial institutions lease equipment against the value of intellectual property. We examine the strategies of these institutions and the potential challenges they face. A final reason to study private equity is that young and growing companies often face extraordinary challenges. In financial markets, there is a strong relationship between “challenge” and complexity. Professional managers must be prepared to handle complexity and, in so doing, understand the implications of their decisions beyond the immediate.

##### Overview of the Course

The private equity cycle involves several steps: fundraising, investment, and exit. The terms and success at exit influence future fund raising, and hence facilitate the next round of investment, and so forth.

In order to understand the structure of private equity partnerships, the course begins with a short module on partnership structure and performance. The partnership structure is critical to shaping the incentives and behavior of the parties involved in the deal. We spend two days on this topic —to understand the differences in general versus limited partners, the types of compensation arrangements used in private equity funds, and primarily how returns are measured.

EFPE focuses primarily on the investment phase of the private equity cycle and examines the investment strategy, management, valuation, and structure of enterprises at various stages of development before becoming public companies. The classes are sequenced to reflect the progression of investments from early to late stage.

|  |  |
| --- | --- |
| **Early Stage** | **Late Stage** |

|  |
| --- |
| First Round Financing  Second Round Financing  Middle Stage/Expansion  Mezzanine  Buyouts |
|  |

The sequencing of the course material from early stage to late stage is intended to provide a perspective on how financing and valuation change over the life-cycle of a firm. There are many judgments in finance that rely on an intuitive sense of the capability and maturity of an organization. How much uncertainty must be resolved before an investment moves from early stage to late stage in investors’ mind? The rate of resolution of uncertainty plays a critical role in the value of enterprises, in the returns required by investors, in the type of financing available, and the structure of the deal. It is intended that this sequence and the class discussions will help identify the factors that are most influential in managing the development of enterprises.

**Course Material and Requirements**

**Course materials:** All of the cases and required readings for the course are contained in a course pack that can be purchased in the Darden bookstore. For your convenience, these materials are also available on the course portal. All spreadsheets of case data and reference materials are posted on the class portal. **Required materials** for the class are highlighted in **Boldface.** Materials marked “To Be Distributed (TBD)” will be posted on the class portal at a later date.

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**Pre-requisites**: *Valuation in Financial Markets* is a pre-requisite for the class due to the over-riding emphasis on the value of companies and the use of contingent and option-based financing.

**Grade:** The grade in the class will be based on class participation (35%), two take home quizzes (7.5% each) and a take home final exam (minimum 50%). You may choose not to complete the quiz assignment(s), in which case the weight of the quiz(zes) will be allocated to the final exam grade. Depending on the choice you make with respect to the quizzes, your weight on the final exam can range from a minimum of 50% to a maximum of 65%. Quizzes are to be completed individually without consultation of classmates or anyone else.

First quiz: Available Friday, October 23rd; Due Sunday, November 1st by 8 p.m.

Second quiz: Available Friday, November 13th; Due Sunday, November 22nd by 8 p.m.

Final exam: Due Friday, December 11 by 4:30 p.m.

**Class participation:** Your attendance and participation are essential ingredients to a successful class. Quarter 2 usually has a high level of recruiting activity. Absence from more than three classes, without extenuating circumstances (e.g., illness, family emergency), will adversely affect your grade. Please email me to explain absences.

**Reference Resources**:

The Camp Library has a number of database resources on private equity:

*Venture Economics* (VentureXpert) is a database of private equity financings. *Venture Economics* gives the history of financing and prices paid by round for venture companies, fund performance statistics, and capital commitments.

*Securities Data Corporation (SDC)* database provides information on the types and terms of securities issued (IPOs, high yield debt) and corporate transactions (M&A, spin-offs) in the U.S. and internationally. The pricing of public company comparables often provides an upper bound valuation for private companies.

*Placementtracker.com* provides comprehensive information on Private Placements by Public Companies (PIPEs). Transaction Reports are available on every closed PIPE transaction since 1995. Access to the membership portion of placementtracker’s website and data requires my permission but involves no financial cost.

**Module 1: Partnership Structure and Performance**

Class # 1: Monday, October 19, 2009

Topic: Introduction to Private Equity

**Case: Investure, LLC and Smith College** (UVA-F-1537)

Network File: Investure(student).xls.

Reference: Note on Private Equity Partnership Agreements (9-294-084)

1. What is private equity investing? What are the benefits and costs of investing in private equity?
2. Describe the structure of a traditional limited partnership. What are the potential benefits and drawbacks to small university endowments of direct investments in private equity through traditional limited partnerships, funds of funds, and Investure?
3. How unique, if at all, is Investure’s approach to investing in alternative assets? How good is their business model?
4. Consider the representative investment in the venture capital fund shown in the Investure (student).xls worksheet “VC Fund I.” Assume that the fund-of-funds or Investure commits $7.5 million to VC Fund I.[[2]](#footnote-2)
   1. Estimate the returns to a limited partner that invests in VC Fund I through a fund of funds with the following terms. The fund of funds has a management fee of 1.5%, carried interest of 10%, and a preferred rate of 8% per annum, compounded annually.
   2. Estimate the returns to a limited partner that invests in VC Fund I through Investure. Investure has a management fee of 0.4%, carried interest of 3%, and a preferred rate of 10%. Profits above 20% are not subject to carried interest.
5. Given Investure’s philosophy, what changes do you expect Handy and Miller to make to Smith College’s endowment allocations? If you were a trustee for Smith College, what questions or concerns would you have with these new allocations?

Class #2: Tuesday, October 20, 2009

Topic: Public Disclosure and Private Equity Returns

**Case: CalPERS vs. Mercury News: Disclosure Comes to Private Equity** (UVA-F-1438)

Network File: CalPERS(student).xls

1. Who are the various parties involved in private equity? How aligned or divergent are their interests over the issues raised in the CalPERS case?
2. What information will funds be asked to report and disclose under GIPS?
3. What do you see as the strengths and weaknesses of the new GIPS standards?
4. Calculate the Since Inception IRR, DPI, RVPI and TVPI for the Keswick Buyout Fund I in Exhibit 4. How do you assess the performance of Keswick Fund I.
5. Assume you are a prospective investor for the new buyout fund about to be launched by Keswick Partners. Would you invest in Keswick Buyout Fund II?
6. What do you believe the overall impact of the GIPS standards will be on private equity investment in the future?

**Module 2: Early Stage Investment**

Class #3: Wednesday, October 21, 2009

Topic: Valuing an Early Stage Company

**Case: IN-*f*usion, Inc.**

**Reading: Valuing the Early Stage Company** (UVA-F-1471)

Network File: IN-*f*usion(student).xls

Reference: The Liquidity discount in Valuing Privately Owned Companies *Journal of Applied Finance* Vol. 17, No.2 Fall/Winter 2007. This is a useful article describing the different approaches used to adjust for a lack of liquidity.

1. Using the assumptions and data given in the case, prepare a discounted cash flow analysis of IN-*f*usion. (For discussion purposes, please assume a terminal value growth rate of 5 percent.)
2. What is the value of the firm under the “venture capital” method?
3. What percentage of equity will first round investors’ likely demand?
4. Which method do you believe is most appropriate for valuing the enterprise?

**Note:** The first quiz becomes available on the class portal Friday, October 23rd. The quiz is due Sunday, November 1st by 8 p.m.

Class #4: Monday, October 26, 2009

Topic: First Round of Venture Financing

**Case: Plurogen Therapeutics** (UVA-F-1469)

Network File: Plurogen(student).xls

1. How attractive isPluroGen as an investment opportunity? What are the key strengths and weaknesses of the opportunity and business plan?
2. What are the advantage and disadvantages of pursuing “orphan drug” status?
3. How does the long process of developing drugs affect investors and founders? Which of the proposed funding strategies would you advise the doctors to take?
4. First ignoring the potential second round investment, what return do you estimate that the angel investors will earn on their investment in PluroGen?
5. Following question 3, what percentage of the company are investors likely to demand for their $1.5 million investment?
6. Now incorporating a potential second round investment, what percentage of the company are investors likely to demand for their $1.5 million investment?

Class #5: Tuesday, October 27, 2009

Topic: Term Sheets

**Case: SecureNet: Series A Round** (UVA-F-1396)

**Reading: The Early Stage Term Sheet** (UVA-F-1444)

Network File: SecureNet (A).xls

Guest Speaker: Thomas Hanley, Attorney at Law, MBA

1. Based on the term sheet for the Series A round, would you say it generally favors the Entrepreneur or the Angel Investor? Be sure to cite specific terms and features of the contract to support your opinion.
2. What incentives are built into the Series A round to motivate Goodson? Are they sufficient incentives in your opinion?
3. What is the post-money value and per-share price of SecureNet *prior* to the Series A round? After the Series A round - if the offer is accepted as proposed?
4. What are the implications to Trio if another investor offers to provide SecureNet an additional $3 million in equity after the Series A round at a price of $8 per share? At $1.5 per share?
5. Is the $1.4 million offer from Trio, LLC a reasonable price for a 40% stake in SecureNet?
6. If you were Mr. Goodson, would you reject the offer and seek out a more experienced venture capitalist, accept Trio’s offer as proposed, or attempt to negotiate certain terms of the offer? If you choose to negotiate, what adjustments would you seek to make?

Note: The first quiz is due Sunday November 1st by 8 p.m.

Class #6 Monday, November 2, 2009

Topic: Venture Leasing

**Case: Aberlyn Capital** (9-294-083)

Reference: Methods of Intellectual Property Valuation (UVA-F-1401)

Network File: none

1. How does venture leasing differ from traditional venture capital investing? In what ways is it similar?
2. Aberlyn proposes to lend RhoMed $1 million. RhoMed will make three even payments of principal, at the end of years 1, 2, and 3, as well as 15% interest on the amount outstanding before the repayment. For example, at the end of the first year, RhoMed will pay $333,333 of principal, plus $150,000 of interest ($1,000,000\* 15%). In addition, Aberlyn receives about 70,000 warrants. Each warrant allows it to purchase one RhoMed share for $1.45 at any point over the next five years.
3. How did Aberlyn calculate how many warrants it should receive? Does the warrant exercise price of $1.45 reflect RhoMed’s value.
4. What is the real rate of return to Aberlyn? To calculate this, you will need to compute the value of the options using the information above and in the case. Footnote 9 in the case provides two suggestions of value.
5. How reasonable is the valuation (reproduced in Exhibit 8) of the patent to be transferred to Aberlyn as part of the FLIP?

**Module 3: Middle Stage and Mezzanine**

Class #7: Tuesday, November 3, 2009

Topic: Expansion and Subscriber Models

**Case: Growing Up in China: The Financing of Baby Care Ltd.**

(9-204-029)

Network File: Babycare\_Model\_template.xls

1. How is (or isn’t) BabyCare’s business model tailored to the unique challenges of an emerging market?

2. The venture capitalist is challenging Mumford and his team on their projections. Build a subscriber model following the framework provided in BabyCare\_Model\_template.xls to judge whether the projections are realistic. What critical assumptions does the subscriber model rely on? Which assumptions would you question as a venture capitalist? How would you defend them as an entrepreneur?

3. Is building the plant to manufacture products locally a good idea? (HINT: Evaluate the changes in working capital after plant completion.)

4. How would you evaluate BabyCare’s funding opportunities?

5. What stage of financing has the company reached?

Class #8: Monday, November 09, 2009

Topic: Mezzanine Financing - Growth

**Case: Elephant Bar Restaurant: Mezzanine Financing (A)**

(UVA-F-1542)

Network File: Elephant Bar(student).xls

1. How attractive is the restaurant industry as an investment opportunity?

1. Is Elephant Bar a strong candidate within that industry? Specifically, what are the prospects of the company becoming a national brand?
2. What are the key risks that Allied Capital, as a mezzanine investor, faces in Elephant Bar and, more generally in growth companies? How does the proposed transaction mitigate those risks?
3. What internal rate of return can Allied Capital expect under the management case and the base case? What are the cash on cash returns?
   1. If necessary, how can Allied Capital alter the deal structure to attain its target returns?
   2. How will these returns vary based on the multiple at exit? What will drive Allied Capital’s ability to capture “multiple arbitrage” (i.e., exiting at a higher multiple than the purchase price multiple)?
4. A member of Allied Capital’s investment committee worries that this transaction will offer mezzanine returns for equity-type risks. Are the concerns justified?
5. Should Allied Capital undertake the investment in Elephant Bar?

**Module 4: Late Stage and Buyouts**

Class #9: Tuesday, November 10, 2009

Topic: Leveraged Buyouts

Case: **Ducati and Texas Pacific Group LBO – A “Wild Ride” Leveraged Buyout** (HBS 9-801-359)

Network File: Ducati LBO (student).xls

1. What is the nature of the opportunity? Could the Ducati brand be expanded beyond motorcycles? Why or why not?
2. How does this deal differ from a typical private equity deal in the U.S.? In terms of deal flow generation, due diligence process, negotiations and context?
3. What is the value of Ducati at the time of the deal?
4. How much should TPG be willing to pay for 51% of the equity? Please assume TPG’s target rate of return for U.S. deals is 35% (annualized).
5. Should Abel Halpern walk away from this deal? Why or why not?
6. If TPG purchases a stake in Ducati, what are the critical steps that TPG needs to take in order to make the deal successful?

**Note:** The second quiz becomes available on the class portal Friday, November 13th and is due Sunday, November 22nd by 8 p.m.

Class #10: Monday, November 16, 2009

Topic: Strategic Expansion

**Case: Parks Capital – Investment in US Retail, Inc.** (9-208-104)

Network File: Parks Capital(student).xls

1. What is the nature of the problems facing U.S. Retail? What steps need to be taken to “correct” the situation?
2. What is the current state of Parks Capital’s investment in American Child Clothing Manufacturers? What are the implications of acquiring U.S. Retail at this time?
3. Assess the three options outlined by Brooke Palmer to deal with the situation at U.S. Retail. Which of the options do you think offers Parks Capital the best balance of risk and reward?
4. What would be the financing structure if Parks Capital acquires US Retail as a standalone company (option 1)? Assuming Parks Capital acquires U.S. Retail through American Child Clothing Manufacturers (ACCM) (option 2), what would the proposed financing for the deal look like?
5. Is the $26 per share price a reasonable price for Parks Capital to pay to purchase U.S. Retail as a stand-alone company (option 1)? How about if Parks Capital pursues option 2? (Hint: Compute the IRRs of both investment options.)
6. How will your assessment of the three options change if you believe that “the mass merchants” such as Walmart and Target will eventually dominate the market?

Class #11: Tuesday, November 17, 2009

Topic: Distressed Investment

**Case: TBD**

Guest Speaker: Stephan Oppenheimer, Partner, Moelis Capital Partners

Note: The second quiz is due Sunday November 22nd by 8 p.m.

Class #12: Monday, November 23, 2009

Topic: Transfer of Family Ownership

Case: **Fojtasek Co. and Heritage Partners – March 1995** (9-297-046)

Network File: Fojtasek.xls

1. What is the Fojtasek family’s problem?
2. How do each of the three possibilities that the family is considering—a buyout, a leveraged re-capitalization, and a “Private IPO—address its needs? What are the key concerns about each transaction?
3. Using the APV method, what do you estimate the company is worth?
4. How reasonable is the payment for Fojtasek being offered by Heritage? How onerous are the control rights that it is demanding? What would you recommend the Fojtasek family do?
5. How common a problem is the Fojtasek family’s dilemma? Does Heritage’s “Private IPO” represent a more general solution to such problems?

Class #13: Tuesday, November 24, 2009

Topic: Secondary Sales in Private Equity

Case: **TBD**

Guest speaker: Dan Mulderry, Partner, Paul Capital Partners

Class #14: Monday, November 30, 2009

Topic: Evaluating Exit Strategies

**Case: Polaris Management: The Logst**ø**r Rør A/S Journey**

Network File: Logstør(student).xls

1. How would you rate the performance of Polaris Management in terms of the original selection of Logstør as an investment opportunity and in creating value for the company to this point?
2. What is the outlook for the district heating market? How much potential is there for future growth?
3. What are some of the challenges posed by the Danish private equity industry to exit?
4. What rate of return will Polaris realize from a sale today versus exiting later?
5. Logstør utilizes the following “bonus” as a management incentive:

Based on the compensation agreement, Logstør’s management was entitled to receive its 5% relative shareholdings if the equity value at exit fell below an initial “exit threshold” of DKK576.[[3]](#footnote-3) If the equity value at exit exceeded the exit threshold, management was entitled to an additional bonus equal to 7.5% of the amount above the exit threshold. The exit threshold of DKK576 million was to step up by 15% per year starting January 1, 2006.

How effective do you believe this incentive is?

1. What is your recommendation with respect to Logstør –should Polaris keep Logstør and continue to grow the company or look to sell it now?

Class #15: Tuesday, December 1, 2009

Topic: Review and Class Wrap-up

**Materials: Review Materials (TBD)**

FINAL EXAM DUE: Friday, December 11, 2009 at 4:30 PM

1. Data on private equity is from *Venture Expert*. “World” refers to all non-U.S. investments. [↑](#footnote-ref-1)
2. In your calculations assume that $7.5 million is the base investment for the fund of funds or Investure’s fees. [↑](#footnote-ref-2)
3. The initial equity threshold of DKK576 represents 15% return on the total equity investments of DKK339. DKK339 accounts for both the “old” equity investment in Løgstør of DKK219 as well as the “new” equity of DKK120 million. [↑](#footnote-ref-3)