Syllabus dated June 8, 2018

New York University Polytechnic Institute Fall 2018
Prof. Warren D. Matthei

Private Equity Finance

Mondays (except Tuesday, October 9) *5:30 to 8:11 pm RH 216,*
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Course Objective

This course provides a comprehensive overview of the private equity ("PE") market. It examines the differing perspectives of private equity investors (limited partners), private equity fund sponsors (general partners) and the managers of portfolio companies by focusing on the nature of the market and the strategies employed.

This course will examine and develop the three components of the *private equity cycle*: 1. Private equity fundraising, intermediation and structure, including fund formation; 2. Investment identification, origination, valuation, the investment decision, strategies for value creation and investment management as well as the structuring and terms of an investment; and 3. Growth financing and exit strategies and execution. Over half the material will involve private equity in the context of two "hot" emerging markets: China and India. The course will focus on the leveraged buyout ("LBO") and venture capital ("VC") segments of PE which together comprise over 80% of the market.

The course will include extensive reading, some lecture, and case studies. This is a half-semester course, so we will cover topics quickly, hitting the highlights rather than studying issues in depth. Not every topic will be discussed in class but readings will be assigned on most topics and students can consult Notes and references to independently pursue in depth topics of particular interest to them. Students will be expected to come to class prepared and to participate regularly in classroom discussion.

Each student will participate in the production of a "Pitch Book" final project, utilizing the information from the course, which lays out the full case for acquisition of a real company.

Career Focus

This course is designed to provide students with foundational knowledge of private equity and is oriented towards students interested in working within some aspect of the private equity industry- directly, as a practitioner or supplier of capital in an leveraged buyout ("LBO") or venture capital ("VC") firm; as a banker or advisor involved in private equity transactions; as an asset manager or risk manager for a firm which has holdings in the asset class, or as an entrepreneur or manager whose company is financed by private equity. A basic but thorough understanding of private equity can be useful for those students interested in applying them in a variety of settings, within large corporations or in development institutions.

Prerequisites

The Private Equity course is designed for potential practitioners and is neither theoretical nor quantitative. Nevertheless there are several, quite simple, quantitative models (relating to PE compensation and asset valuation) that must be mastered. Therefore a solid understanding and basic facility with the use of Microsoft Excel is required.

Teams

A characteristic of private equity firms is that they typically function in small teams or partnerships. You are encouraged to form study groups to prepare the cases for class discussion. The assignments will require you to work in teams. Teams will be made of three students, and should be organized early in the semester.

Introduction

Private equity is a major source of capital for both new ventures and established firms and has become established as a separate and distinct asset class. Private equity capital can be invested in the equity of private companies to fund growth or in public companies to take them private. Private equity firms generally make direct investments in these companies, while individual and institutional investors typically invest through private equity limited partnerships managed by industry professionals. Private equity is segregated into several sub-markets. The principal focus of this class is on the two largest segments: the leveraged buyout and venture capital markets.

VC firms are managers of risk capital who fund new ideas that could not be financed with traditional bank financing. A venture capital investment is an equity investment in a company whose stock can be illiquid and worthless until a company matures up to five to eight years later. Follow-on investment provides additional funding as the company grows. These "rounds," typically occurring every year or two, are also equity investments. Shares are allocated among the investors and management team based on an agreed valuation. But, unless a company is acquired or goes public, there is little actual realizable value.

Leveraged buyout ("LBO") investment firms are also referred to as private equity firms. In a typical LBO transaction, the private equity firm buys majority control of an existing or mature firm. This arrangement is distinct from that of VC firms that typically invest in young or emerging companies and typically do not obtain majority control. In a leveraged buyout, a company is acquired by a specialized investment firm using a relatively small portion of equity and a relatively large portion of outside debt financing.

The growth of private equity internationally has been dramatic. Since its origins approximately 70 years ago, the size of the private equity market has grown substantially and has become institutionalized. For example, annual capital commitments to private equity funds have grown from $8 billion in 1991 to a peak of about $175 billion in 2000 before declining in 2001 and 2002. Since 2002 commitments have increased substantially with market sources estimating that more than $500 billion was raised in 2007. Since the financial crisis began in late 2007, private equity commitments and deal volumes have declined substantially but recovered starting in 2012.

Schedule and Grading

For a variety of reasons, including efficiency, students will be encouraged to form study groups to discuss the cases prior to class. There will be a major group project which will count for 50% of the grade: the groups will select a recent or proposed acquisition of their choosing and prepare a thorough analysis of the transaction similar to a "pitchbook".The instructor will assign the cases to the teams by the end of Class 2. An examination, which covers basics of valuation and fundamentals of private equity, will be given on the 3rd October in Class 4 and count for 40% of the grade. The written assignment, an individual project, to write up the Iris Running Crane case will be due at the beginning of Class 2 and represent 10% of the grade. Students will form their own groups of three persons each.

Primary Materials

Harvard Business School cases and notes will constitute the primary background course materials together with materials distributed by the instructor. The course packet can be downloaded entirely or in parts at the HBS Publishing website. The link is https://hbsp.harvard.edu/import/542860 .

. See below.

Extensive use of the CLASSES portal is made-check it regularly.

THE READINGS BELOW ARE OPTIONAL EXCEPT FOR THOSE MARKED ***.

Course Outline

Class One: September 10, 2018

Topics

- Introduction to Private Equity: Background and History
- Role of Private Equity
- Overview of Important Topics:
  How funds are raised and structured
  Private equity organizations and entrepreneurs
- Key Concepts in Private Equity: Illiquidity, Uncertainty and Information Gaps; Cyclicality; Certification; Incentives; Deal Context; Career Management
- Financial analysis of fund operations

Readings

Case Studies:

***1**. J. Lerner, F. Hardymon and A. Leamon, "Acme Investment Trust: January 2001"*

Objectives:

- Explore the structure and role of compensation schemes employed in the private equity industry
- Examine the competitive dynamics between private equity funds

Questions:

Acme, a corporate pension fund, is considering investment in a new private equity partnership sponsored by Hicks, Muse, Tate & Furst. The private placement memorandum calls for a somewhat different fee structure from that usually employed by private equity funds. Acme's managers must decide whether this should affect their decision to invest.

- Why are the incentives offered to private equity investors by PE funds so similar?
- What are the financial implications of the offer? In particular, how does the limit and general partners' compensation change with the size of the fund raised? To examine this question, you may wish to compare the net present value of their management fee with the variable compensation using the following assumptions:
    1. Discount rates: 15% for carried interest, 10% for management fee
    2. Potential fund sizes: $2, $3,$4, $5 billion
    3. $200 million drawn down immediately to cover internet investments, and the balance drawn down in equal installments at the beginnings of the first, second, third and fourth years and used to pay management fees over the life of the fund and the balance ($573 million in the case of a $3 billion fund) is immediately invested.
    4. Annual management fee is 2% of total committed capital. In years 8 and thereafter the fee is reduced by 25%. The fee is paid in one lump sum at beginning of the year; fees terminate when the last investment is terminated.
    5. The internet investments are worthless and the fund: pays out nothing unless there is a guarantee in which case the fund pays $500 million at the end of year 5.
    6. Beginning at the end of the 6^{th} year, the fund liquidates the investment made 6 years earlier: the value of the amounts actually invested grows by 20% annually. The amounts are distributed.
    7. The amount actually invested in these deals is returned to the limited partners. The remainder is divided 80%-20% between the limited and general partners respectively.
    8. Make any other assumptions you deem necessary-state them clearly

- Calculate (for $1,2,3,4,5 billion fund sizes): NPV's of management fees to GP; NPV's of all distributions and all GP cash flows (with and without the guarantee); for LP's calculate NPV of all distributions and NPV of all cash flows with and without the guarantee and LP IRR's with and without guarantee.
- What is the breakeven growth rate for non-internet investment, all GP cash flows?

Notes and Articles:

1.J. Lerner, Hardymon & Leamon, "A Note on Private Equity Partnership Agreements", HBS Case Note. ***

2. Steven Kaplan and Per Stromberg, Leveraged Buyouts and Private Equity. Journal of Economic Perspectives-Vol. 22, No. 4-Season 2008. ***
http://faculty.chicagobooth.edu/steven.kaplan/research/ksjep.pdf; or
http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1194962

Class Two: September 17

Topics

- Structure and Operation of Private Equity Firms, cont'd.
- Valuation Techniques: *Pro forma's* and discounting

- Process of exit from investments

<u>Readings</u>
<u>Case Studies:</u>
M. Rhodes-Kropf, J. Lerner and A Leamon, "Iris Running Crane: December 2009"
<u>Objectives:</u>
- Introduce key topics in Private Equity course
- Examine key compensation modes in private equity, such as carried interest
- Explore career strategies in the private equity industry

<u>Question:</u>
- Which job should Iris Running Crane take? <u>*You may choose to calculate the differences in the financial packages on offer to Iris Running Crane using the methods in the Acme case in class 1.*</u>

<u>NOTE:</u>
<u>Each student will independently prepare a two page answer to the question posed above in respect of the Iris Running Crane case, to be submitted in hard copy at the beginning of class 2.</u>

<u>*Notes:*</u>
1. Lerner, Hardymon & Leamon, "Note on the Private Equity Fundraising Process", HBS Case Note
2. Luehrman, T. "Business Valuation and the Cost of Capital", 9-210-037
3. J. Lerner & John Willinge, "A Note on Valuation in Private Equity Settings" ***
4. "Note on Financial Analysis" HBS Case Note.

Class Three: September 24
<u>Topics</u>
- Financial Analysis of Fund Operations
- Investment Origination, Value Creation and Management
- Valuation approaches: DCF methods, transaction comparables, trading comparables.
- Leveraged Investments, Valuation, Private Equity and the LBO Process
- Structure of Securities and Value Creation and Management
- Strategic Analysis: Five Forces and SWOT

<u>Readings</u>
<u>*Case Studies:*</u>
1. R. Ruback, HCA, Inc. (A)
<u>Objectives:</u>
- Understand the motives for an LBO of HCA
- Review the LBO process
- Valuation Approaches: i. Free cash flow; ii. Capital Cash flow; iii. Incremental interest tax shield

<u>Questions:</u>

- Why is the senior management of HCA pursuing an LBO of the firm?
- How is HCA performing? What are the challenges of the firm going forward without the LBO? How does the LBO help resolve these challenges?
- What is your estimate of the maximum price that the LBO firms should be willing to pay for HCA? i. Use the CCF approach based upon the cash flow forecasts in Exh. 9 along with the assumptions about the risk free rate, the risk premium and the tax rate in Exh. 10; Use the comparable trading and transaction multiples based on the information in Exh. 12 and 13.
- How do your estimates of the maximum price that the LBO firms should be willing to pay for HCA compare to the discounted cash flow values in Exh. 11? How do you explain the differences, if any?
- Is the offer fair to shareholders? What should you compare the offer price to when deciding if an offer is fair or not?
- Are there any reasons for shareholders to be concerned about the LBO process? What are the conflicts, if any?
- If you were a member of the special committee evaluating the proposed LBO would you recommend that the proposed deal be approved?

Notes:

1. Michael J. Roberts & Howard H. Stevenson, "Deal Structure and Deal Terms"***
2. J. Lerner & F. Hardymon, "A Note on Private Equity Securities"
3. Harvard Business Essentials, "SWOT Analysis I: Looking Outside for Threats and Opportunities", *** and
4. "SWOT Analysis II: Looking Inside for Strengths and Weaknesses" ***
5. M. Porter, "The Five Competitive Forces that Shape Strategy" ***

Class Four: October 1

Examination. This examination will cover the basics of Valuation (balance sheet, income statement and cash flow pro forma's) free cash flow forecasts, cost of capital and NPV and the fundamentals of private equity.

Class Five: Tuesday, October 9

Topics

- Private Equity in Asia: India and China
- Venture Capital: Understanding the Entrepreneurial Process
- Fund-raising process
- Valuation of Prospective Investments, contd.
- Developing Cash Flow Forecasts
- Political and Regulatory Risks in Emerging Markets

Readings

Case Studies:

1. F. Hardymon and A. Leamon, "Gobi Partners: Raising Fund II"

Objectives:

- Explore the challenges of investing in China, and, by extension, other emerging private equity markets
- Examine difficulties of fund-raising and the importance of a record
- Develop understanding of different aims of financial and strategic LP's

Questions:

- As an institutional LP, why would you back Gobi? Why not?
- Why are there pan Asian funds? Is there more risk (and what sort of risk?) in a China-only fund? Why aren't there pan North American funds?
- If you were a Gobi partner, what would your planning horizon and fund size target be? When would you expect to close, what are the keys to raising the second fund, and how large should it be?
- Does Gobi's strategy make sense in such a young venture capital market?

2. P. Sapienza, "Surya Tutoring: Evaluating a Growth Equity Deal in India"

Questions:

- Evaluate this investment opportunity from the perspective of a private equity investor. Where would you place this deal on the private equity-venture capital spectrum? What tools should be used to analyze it?
- Compare the approaches of ZenCap and Blackgem to deal sourcing and negotiation.
- Describe the advantages that ZenCap and Blackgem each bring to Surya as a potential investor.
- Compare and contrast the contractual features in the term sheets offered by ZenCap and Blackgem. Why do you think certain contractual features are in the ZenCap term sheet but not in Blackgem's, and vice versa?
- Which firm should R.K.Sharma choose to finance Surya's expansion?

3. L. Liao, N. Ja and Z. Zhao, "Jiuding Capital:Private Equity Firm with Chinese Characteristics"

Questions:

- What are the key drivers of rapid growth of China's RMB fund market in recent years?
- What are the distinctive characteristics of Chinese LP's?
- What are the strengths and weaknesses of Jiuding's "PE factor" model? Is this model sustainable in the long run?
- How should Jiuding pursue growth and business expansion in the future?

4. H. Lee, J. Shaw and M Choo, "Selecting a Pharmaceutical Company from Northeast Asia for Investment"

Questions:

Joe Clift would like to evaluate the financial strengths and weaknesses of three large pharmaceutical companies: Takeda, Dong-A and Sinovac. See case exhibits 1 to 5.

- Prepare ratio table for three companies in the same format as shown in case Exh. 5: Key Financial Ratios Industry Averages from FY 2006 to FY 2008.
- Perform vertical analysis of income statements and balance sheets for the three companies from FY 2005 to FY 2008.

- Perform horizontal analysis of income statements and balance sheets for three companies from FY 2005 to FY 2008.
- Assuming the role of a financial analyst at Blacksmith Partners LLC, prepare a one-page memorandum that analyzes the financial condition of the three companies and that makes recommendations about which company to choose. The memo should be divided into sections describing the interpretations of key financial ratios used in assignment questions above. Which pharmaceutical company would you recommend to Clift?
- What factors other than financial analysis does Clift need to consider to select a company in which to invest?

Notes and Articles:

1. R. Koushik, "The Evolution of the Venture Capital Market in India"
2. Note on Private Equity in Developing Countries

Class Six: October 15

Topics

- The Investment Decision and Negotiations
- Realizing value from Private Equity Investments
- Initial Public Offerings ("IPO's")
- Equity Markets in Asia and the U.S.

Readings

Case Studies:

1. N. Retsinas and J. Ginsburgh, "One South : Investing in Emerging Markets (A) and (B)"

Questions:

- Should Claybyrd invest? What are the critical factors underlying the decision (pros and cons)?
- If Claybyrd proceeds with the investment, what types of due diligence activities need to be undertaken?
- If you choose to vote against the investment, how might the OneSouth proposal be modified to increase its attractiveness to Claybyrd (and thus to you as an investor)?
- Would your decision change if you were the representative of the founding partners on the Claybyrd Investment committee rather than the Saboput Group LLC? What if you were representing the General Partner (Claybyrd)?

2. T. Khanna, K. Palepu and I Vargas, "Bharti Tele-Ventures"

Objectives:

- Identify sources of success for entrepreneurial venture
- Analyze current competitive position of successful venture
- Chart the course of the venture going forward

Questions:

- Why did Bharti become so successful? What are the key competitive advantages that Bharti has developed over time? How can an entrepreneur with limited access to capital, in a capital-scarce country, succeed in a capital-intensive industry?

- Should Bharti worry about the entry by the much larger Reliance and Tata Group into mobile telephony? Which company is best positioned to succeed in mobile telephony in India in the long-run?
- How should Bharti evolve its business model to deal with future opportunities and threats?

3. J. Lerner and Yiwen Jin, "Hony, CIFA, and Zoomlion: Creating Value and Strategic Choices in a Dynamic Market"

Objectives:

- Overview of the Private Equity market in China
- Study of structuring cross-border leveraged buyout transactions
- Examine challenges associated with translating the private equity model in emerging markets
- Illustrate the development of competitive strategies by private equity organizations

Questions:

China is one of the hottest markets for private equity financing today, and Chinese groups are looking to invest not only in China, but also in Europe.

- What are the risks of pursuing the CIFA acquisition? What are the potential benefits?
- How is investing in Zoomlion's acquisition of CIFA different from investing in Zoomlion itself? Does this pose fewer or more risks for Hony?
- What is the valuation of CIFA? Please use cash flows and cost of capital data from the case. You can assume that CIFA will grow at 5% per year through 2012 and 2% per year thereafter.
- Another source of profits for Zoomlion is sales of its own products through CIFA's distribution network. This might be assumed to begin in 2010 and grow at the same rate as CIFA's sales. How significant will the after-tax profits from such sales need to be (if any) to justify a valuation of 500 million Euros?
- How much do you believe Zoomlion should bid for CIFA, based on the answers above?
- What is the estimated return on the CIFA deal for Hony? Assume that a) Hony will exit in 5 years; b) Hony will exercise the option at the time; c) CIFA's entry trailing EV/EBITDA multiple was 10 and Zoomlion would be trading at an average EV?EBITDA multiple of 20 at time of exit.
- Should Hony participate in the Zoomlion acquisition?

Note:

1. J. Lerner, "A Note on the Initial Public Offering Process"***

Class Seven: October 22

FINAL PRESENTATIONS

Case:

R.H. Lopez, A. Gilinski and J. Shah, "Sula Vineyards"

Objectives:

- Develop an understanding of a particular industry (wine-making) in a developing country (India) context
- Conduct a valuation of a small (entrepreneurial) business using a variety of financial valuation methods
- Use common statement and ratio analyses that give credence to strategic decision-making
- Use of typical SWOT/Five-Force Analyses to aid in strategic decision-making

Questions:

- Evaluate the attractiveness of the Indian wine industry using the "Five Forces" model. How is Sula positioned?
- Perform a SWOT analysis for Sula: what areas require improvement?
- Assess Sula's financial performance over the last five years using the data in case Exhibits 5-7 by preparing common size financial statements and financial ratios. What conclusions can you make?
- Evaluate the three alternative action plan scenarios presented in case Exhibits 11-16.Create pro forma income statements for each growth scenario based on data from case Exhibits 5-10. What conclusions can you draw?
- Create pro forma balance sheets for each scenario. Use "Additional Funds Needed (AFN)" on the balance sheet as the "plug figure", as a current asset or current liability. Add or subtract interest income/expense from income stattrement.
- Prepare Free Cash Flow statements for the past five years and for the projected period. Compare these and state how these affect your scenario choice.
- Project the value of the firm over the next five years. How do these projections affect the firm's capital structure ratios when compared to the book value ratios?
- Based upon your expectation for the Indian wine industry growth, what recommendations would you make to Rajeev to enable Sula to participate profitably over the next few years? Which growth rate should Sula use as a target, and what strategic and financial courses of action should be taken to support your proposal?

This course is a practical course designed to provide basic knowledge for future practitioners: it is not a theoretical course and not an overly quantitative course (on the quantitative side students will be responsible for a solid understanding of the economics of PE firms and how to value businesses- both are rather simple excel spreadsheet exercises covered in cases at the beginning of the course). The main focus will be on analytics, especially qualitative factors. This course places a strong emphasis on presentation and discussion skills. Students will have the opportunity to explain their thinking about an issue to the class and the Instructor. Participation will be judged primarily on the quality of the comments rather than on the quantity of the participation. Students can participate either by volunteering or by being selected to participate by the Instructor. Regular contributions to the class discussions that demonstrate logical and complete analysis will result in a high grade.

The Case Method and Preparation of Case Assignments

The case method used in this course is consistent with the practical orientation: facilitating the students' understanding of PE for their use in seeking career opportunities and achieving success in those careers. Please consult "A Guide to Case Analysis", http://highered.mcgraw-hill.com/sites/dl/free/0072969431/362614/guide_to_case_analysis.pdf

Course Packet and References

The course packet consists of the notes and the cases that may be useful as background during the course: students will obtain these by creating an account at http://hbsp.harvard.edu/ and accessing this course via the link http://cb.hbsp.harvard.edu/cbmp/access/78580848 **.**

You must access a copy of materials marked "***", but the entire course packet is not required text. However, students may find the following to be useful references at various times during the course:

References:

Harvard Business School, Baker Library: PE and VC Sources http://www.library.hbs.edu/guides/vcpe.html

National Venture Capital Association
http://www.nvca.org/

PriceWaterhouseCoopers Money Tree Report
https://www.pwcmoneytree.com/MTPublic/ns/index.jsp

Ernst&Young/IESE Business School, Global Venture Capital
http://blog.iese.edu/vcpeindex/

Private Equity Growth Capital Council
http://www.pegcc.org/

Emerging Markets Private Equity Association
http://www.empea.net/default.aspx

Bartlett, Joseph W., *Equity Finance: Venture Capital, Buyouts, Restructurings, and Reorganizations (2nd ed.)*, (Frederick, MD: Panel division of Aspen Law & Business, 1995).

Lake, Rick and Ronald A. Lake, *Private Equity and Venture Capital: A Practical Guide for Investors and Practitioners*, (London: Euromoney Books, 2000)

Levin, Jack S., *Structuring Venture Capital, Private Equity, and Entrepreneurial Transactions*, (Frederick, MD: Panel division of Aspen Law & Business, 2000).

Schell, James M., *Private Equity Funds: Business Structure and Operations*, (New York: Law Journal Press, 1999)

Damodaran, Aswath, *Damodaran on Valuation*, (New York: John Wiley & Sons, 1994).

Pratt, Shannon P., Robert F. Reilly, and Robert P. Schweihs, *Valuing a Business: The Analysis and Appraisal of Closely Held Companies (4th ed.)*, (Burr Ridge, IL: Richard D. Irwin, 2000).

F. Barber and M. Goold, "The Strategic Secret of Private Equity"; HBR R0709B

P. Fernandez, "Levered and Unlevered Beta", IESE,
http://www.iese.edu/research/pdfs/DI-0488-E.pdf

Case Packet:

https://hbsp.harvard.edu/import/542860

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