Yale SCHOOL OF MANAGEMENT

**MGT 635: Venture Capital**
Prof. Olav Sorenson - Fall 2017

## Course overview

Venture capital and other sources of private equity play a critical role in the founding and development of new enterprises. Over the past 40 years, there has been an enormous surge in the financial resources allocated to venture capital. According to the National Venture Capital Association, the pool of U.S. private equity funds allocated to pre-IPO investing in private firms has grown from roughly $1.8 billion in 1980 (in 2016 dollars) to more than $42 billion in 2016. Venture capital has also been expanding around the globe as a model for the financing of fledgling firms.

In this course, we will review all aspects of starting and operating a venture capital firm. At the end of the course, your ability to answer the following questions should have improved:

- How can I attract investors into a venture capital fund?
- How can I best select among potential equity investments?
- How can I value early stage companies?
- How can I best structure a financing agreement with a private company?
- As an investor, how can I choose among different 'exit' strategies?

To address these questions, we will draw on recent advances in competitive strategy, organization theory, financial economics, and economic sociology. Though built on rigorous theory and evidence, the focus of the course is nonetheless highly practical. Please note that, while I teach the course from the perspective of the venture capitalist, potential entrepreneurs, investors (limited partners), and policymakers will also find useful a better understanding of the industry.

I have one main goal for the course: I wish to give you a nuanced view of the structure of the venture capital industry and the relationships between venture capitalists and both limited partners and the firms in which they invest. By doing so, I hope to prepare you: (i) to manage private equity funds, (ii) to raise capital for entrepreneurial ventures, and (iii) to choose among private equity investments.

## Assessment

I will evaluate your performance in the course on four components: class discussion, one problem set, two individual write-ups, and three group assignments. I will weight them as follows in determining the final grade.

| Component | Weight |
|---|---|
| Class participation | 20% |
| Problem set | 20% |
| Individual write-ups | 20% |
| Group assignments | 40% |

**Class participation:** Through effective class discussion, we will all learn more about the industry and its operations. You add value when you (i) listen to others, (ii) *constructively* critique others' arguments, (iii) ask questions or pose arguments that improve our understanding of the materials, (iv) describe and connect related personal experiences to the discussion, and (v) integrate ideas from other courses.

**Laptops:** The usage of laptops imposes a negative externality on the entire class. I therefore do not allow their use during class (unless explicitly stated otherwise).

**Problem set:** All students must complete the valuation problem set, which I will distribute on September 21. You should submit your answers by the beginning of class on **September 26**.

**Write-ups:** Each student must complete **two** of the (three) case write-up options. Write-ups ask you to focus on a piece of analysis associated with one of the cases (see the bolded WRITEUP OPTIONS among the study questions below). Your write-up should consist of no more than two pages explaining your conclusion and how you arrived at it. To receive credit, you must submit your write-up before the class in which I plan to discuss the case that your write-up considers.

**Group assignments:** For **September 12**, **September 26**, and **October 5**, each group will need to prepare an assignment for the class that day. More detailed descriptions of these assignments can be found in the daily schedules below.

## Instructor

You can reach me by e-mail (`olav.sorenson@yale`). I will also hold office hours on Tuesdays from 1pm-2pm and on Thursdays from 11am-noon.

## Schedule

1. Course introduction (August 31).

   - Reading: Sahlman, William (1990), "The structure and governance of venture-capital organizations." *Journal of Financial Economics*, 27: 473-521
   - Case: *Carmichael Roberts: To Create a Private Equity Firm?*

     Study questions:

     (a) If Roberts raises a fund, would *you* want to invest in it?
     (b) Where should Roberts base his fund?
     (c) What sorts of investments should he focus on?
     (d) Should his departure concern his colleagues at North Bridge?

2. Raising a first fund (September 5).

   - Reading: Harris, Robert S. Tim Jenkinson, Steven N. Kaplan, and Ruediger Stucke (2014), "Has persistence persisted in private equity? Evidence from buyout and venture capital funds." Working paper, University of Virginia
   - Case: *Cutlass Capital, L.P.*

     Study questions:

     (a) Why have David Hetz and Jon Osgood had so many problems raising their first fund?
     (b) **WRITEUP OPTION:** How successful have Hetz and Osgood been as investors? How would you compare their performance to similar private equity funds?
     (c) How should Hetz and Osgood respond to Euro Insurance's demands?

3. Accessing deal flow (September 7).

   - Reading: Bentsson, Ola, and David H. Hsu (2015), "Ethnic matching in the U.S. venture-capital market." *Journal of Business Venturing*, 30: 338-354
   - Case: *Pear VC*

     Study questions:

     (a) Is Pear a VC or an accelerator?
     (b) How does VC investing differ from angel investing?
     (c) How did Mar Hershenson and Pejman Nozad arrive at their investment thesis? Does it seem like a good strategy?
     (d) How would you advise Hershenson and Pejman to allocate their time and money?

4. Pitching limited partners (September 12).

   - **GROUP ASSIGNMENT: Fund pitch**
     Prepare a pitch oriented toward limited partners in the form of a slide deck. You should have a focus, an investment thesis, a proposed size, and a compelling case for why the investor would want to invest in your fund. Plan to present your case in six to seven minutes.
   - Preparation: Examine the websites of three or four VC firms. Try to get a sense of their investment strategies from their listed portfolio companies. You can find a listing of U.S. VC firms at the following website:
     `http://nvca.org/about-nvca/members/`

5. Selecting investments (September 14).

   - Reading: Gompers, Paul, Will Gornall, Steven N. Kaplan, and Ilya Stebulaev (2016), "How do venture capitalists make decisions?" Working paper, Harvard Business School
   - Reading: Kerr, William R. Ramana Nanda, and Matthew Rhodes-Kropf (2014), "Entrepreneurship as experimentation." *Journal of Economic Perspectives*, 28: 25-48
   - Case: To be distributed (by September 7)

6. Incubators and accelerators (September 19).

   - Reading: Hansen, Morten, Henry W. Chesbrough, Nitin Nohria, and Donald N. Sull (2000), "Networked incubators: Hothouses of the new economy." *Harvard Business Review*, 78: 74-84.
   - Reading: Cohen, Susan L. (2014), "Accelerating startups: The seed accelerator phenomenon." Working paper, University of Richmond
   - Case: *ideaLab* (video)
     `https://www.idealab.com/videos/gates_idealab.php`
   - Case: *Y Combinator* (video)
     `https://www.youtube.com/watch?v=OWVNCgZAemg`
   - Case: *Polymath Ventures: Building an International Incubator*

     Study questions:

     (a) How do accelerators differ from incubators?
     (b) What accounts for success in these models?
     (c) **WRITEUP OPTION:** Does the accelerator/incubator model seem better or worse suited to developing economies? Justify your conclusion.
     (d) Does KIDU seem like a good investment? Why or why not?

7. Valuing investments (September 21).

   - Reading: Sorenson, Olav (2007), "Valuing new ventures."
   - Practice: Sorenson, Olav (2017), "Valuation practice problems."

8. Doing deals (September 26).

   - **PROBLEM SET: Valuation Problem Set Due**
     **(To be distributed: September 21)**
   - Reading: Kawasaki, Guy (2006), "The top ten lies of entrepreneurs."
     `https://guykawasaki.com/the_top_ten_lie_1-3/`
   - Case: *AudienceView*

     Study questions:

     (a) Why do Axon and Andersen like AudienceView?
     (b) What questions would you want answered before investing?
     (c) How might you get answers to those questions?
     (d) How much should you offer for AudienceView?

9. Negotiating deal terms (September 28).

   - **GROUP ASSIGNMENT: Term sheets**
     Each team will either play the role of Ventures West or of the founding team (Kimsa). I will provide additional information in position sheets, distributed on September 26. You should use those to determine your BATNA and what you would suggest as an initial offer.
   - Reading: Kawasaki, Guy (2006), "The top ten lies of venture capitalists."
     `https://guykawasaki.com/the_top_ten_lie-3/`
   - Case: *AudienceView*

10. Investing through debt (October 3).

    - Case: *Avid Radiopharmaceuticals and Lighthouse Capital Partners*

      Study questions:

      (a) As one of Barnes' colleagues, why might you oppose lending to Avid?
      (b) How do the proposed terms mitigate the risks inherent in lending to companies with few assets and negative cash flow?
      (c) What sorts of conflicts might arise among management and the various investors? How would you mitigate them?
      (d) Should Skovrosky take the venture debt? Why or why not?

11. Exiting investments I (October 5).
    - Reading: Loughran, Tim, and Jay Ritter (2004), "Why has IPO underpricing changed over time?" *Finanacial Management*, 33: 5-37
    - Case: *Square, Inc. IPO*

      Study questions:

      (a) Is now the right time for Square to go public?
      (b) Should Square pursue an acquisition instead?
      (c) Why did Square's stock price go up so much on the first day?
      (d) **WRITEUP OPTION:** Who wins and loses in the IPO?

12. Exiting investments II (October 10).
    - **GROUP ASSIGNMENT: Exit analysis**
      Estimate the amount that Actis might earn in an IPO versus the amount that it could earn in a dividend recapitalization. Which would you prefer as an investor?
    - Case: *Exits in Emerging Markets: Actis' Investment in Umeme*

      Study questions:

      (a) Would you have been in favor of the original investment in Umeme?
      (b) What are the primary risks in the investment?
      (c) Why is it difficult to find a strategic acquirer for Umeme?
      (d) How can a private equity investor exit in less developed capital markets?

13. Public policy and emerging trends (October 12).
    - Reading: Samila, Sampsa, and Olav Sorenson (2010), "Venture capital, entrepreneurship and economic growth." *Review of Economics and Statistics*, 93: 338-349
    - Reading: Sorenson, Olav, Valentina Assenova, Guan-Cheng Li, Jason Boada, and Lee Fleming (2016), "Expand innovation finance via crowdfunding." *Science*, 354: 1526-1528

## Materials

1. Sahlman, William A. (1990), "The structure and governance of venture-capital organizations." *Journal of Financial Economics*, 27: 473-521
2. *Carmichael Roberts*, HBS Case 9-317-079

3. Harris, Robert S. Tim Jenkinson, Steven N. Kaplan, and Ruediger Stucke (2014), "Has persistence persisted in private equity? Evidence from buyout and venture capital funds." Working paper, University fo Virginia

4. *Cutlass Capital, L.P.*, HBS Case 9-805-075

5. Bentsson, Ola, and David H. Hsu (2015), "Ethnic matching in the U.S. venture-capital market." *Journal of Business Venturing*, 30: 338-354

6. *Pear VC*, Stanford GSB Case E-630

7. Gompers, Paul, Will Gornall, Steven N. Kaplan, and Ilya Stebulaev (2016), "How do venture capitalists make decisions?" Working paper, Harvard Business School

8. Kerr, William R. Ramana Nanda, and Matthew Rhodes-Kropf (2014), "Entrepreneurship as experimentation." *Journal of Economic Perspectives*, 28: 25-48

9. Hansen, Morten, Henry W. Chesbrough, Nitin Nohria, and Donald N. Sull (2000), "Networked incubators: Hothouses of the new economy." *Harvard Business Review*, 78: 74-84.

10. Cohen, Susan L. (2014), "Accelerating startups: The seed accelerator phenomenon." Working paper, University of Richmond

11. *Polymath Ventures: Building an International Incubator*, USC Marshall Case SCG-521

12. Sorenson, Olav (2007), "Valuing new ventures."

13. Sorenson, Olav (2017), "Valuation practice problems."

14. *AudienceView*, Ivey Case 907N06

15. *Avid Radiopharmaceuticals and Lighthouse Capital Partners*, HBS Case 9-810-054

16. Loughran, Tim, and Jay Ritter (2004), "Why has IPO underpricing changed over time?" *Finanacial Management*, 33: 5-37

17. *Square, Inc. IPO*, HBS Case 9-817-054

18. *Exits in Emerging Markets: Actis' Investment in Umeme*, Stanford Case F-311

19. Samila, Sampsa, and Olav Sorenson (2011), "Venture capital, entrepreneurship and economic growth." *Review of Economics and Statistics*, 93: 338-349

20. Sorenson, Olav, Valentina Assenova, Guan-Cheng Li, Jason Boada, and Lee Fleming (2016), "Expand innovation finance via crowdfunding." *Science*, 354: 1526-1528