

Doctoral Seminar in Venture Capital, Private Equity, and Innovation

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Thursdays 12-2pm

Grad Center 4433

Course Description

In this course, students will become familiar with and develop an in-depth understanding of the recent advances in the areas of venture capital, private equity, and innovation. The course includes a complete, yet concise synthesis of the recent available literature on the aforementioned topics within a logical, analytical structure. The topics covered are in the instructor's area of expertise, with an emphasis placed on agency theory, incentives, and methodological approaches to empirical research. More generally, students will develop the ability to critically integrate concepts, theories, and tools from corporate finance. The purpose is to develop familiarity with some of the most advanced work in the literatures, have a good understanding of how to critically evaluate current research in the areas, and develop research projects that can be published in the leading academic journals.

Course Objectives

The course has two major goals. The primary objective is to develop the ability to critically assess research in the areas of venture capital, private equity, and innovation, and to understand the strengths and weaknesses of databases, statistical approaches, and research designs.

The second main objective is to convey an understanding of the trends in the current literatures and to offer a supportive environment for developing your own ideas in these research areas. This course is designed to stimulate students to think critically about research. After taking this course, students should have a good overview of standard empirical approaches to research questions in these areas and a grasp of some of the underlying theory. Students should also have an understanding of what the current state of the literatures are and where gaps exist.

Another objective is to enhance one's ability to present, explain, and defend scholarly thoughts and positions, as well as to professionally respond and react to other scholars.

Class Preparation and Discussion

The teaching and learning approach adopted emphasizes the importance of developing critical thinking and analytical skills. This is achieved through a mix of lectures, class presentations and discussions and a research paper.

Weekly Activities:

In order to obtain the full benefit from the course, students should:

1. Read the assigned reading for each class and be prepared to ask critical questions and answer specific questions about the readings.
2. Attend all classes and arrive on time.
3. Actively participate in class: answer questions posed by the instructor, and ask your own questions.
4. If issues are still not clear, first ask your classmates, then send me an email. Feel free to ask questions any time.

The rationale for the above suggestions and requirements is that following them is necessary to achieve the course objective specified above. The design of the course presupposes that students are interested in the topics and will endeavor to learn the material presented. Lectures, class discussions and presentations are all aimed to facilitate your learning. However, ultimately, the time and effort each student devotes to the course will determine how much he or she learns from it.

During the initial **two** sessions when introducing the institutional framework of venture capital and private equity, the instructor will cover the material in the form of lectures that will be primarily based on survey paper readings. The following sessions will involve student presentations and discussions interspersed with questions from the instructor/students. I expect a student to present twice through the course of the semester.

Beyond the classroom, the students are required to cover the readings, and prepare for class discussions and presentations each week. The students are encouraged to form study groups to engage in interactive critical discussions of the assigned research articles.

Grading

Grades will be based on your performance of the following components:

Weekly Reading Summaries	20%
In-Class Discussions	20%
In-Class Presentations	15%
Final Exam	20%
Research Paper	25%

Weekly Reading Summaries: Each student is required to submit five 1-page summaries of the weeks' readings. Students may choose the weeks in which to submit the summaries.

Please bring copies of your summaries to the start of each class. These summaries will be helpful study and reference tools as you prepare for your research paper and final exam.

Please also note that although you are only responsible for five weekly summaries, you are expected to read and take notes on all of the articles. Otherwise it will obviously have an impact on your ability to participate in our discussions.

In-class Discussion: Class participation is a very important part of this course and all student enrollees are expected to play an active role in regularly discussing the assigned readings. The evaluation of class participation will be based on your level of preparation and the strength of your contributions to our discussion.

In Class Presentation: Each student will present twice through the course of the semester, the papers being discussed. Each paper's presentation should last about an hour including the Q&A and discussions. I don't mind going beyond 2 pm if required. Feel free to let me know if it results in a conflict with your schedule on the day.

Final Examination: The final examination will contain questions similar to those included on doctoral preliminary exams. The questions will require that you integrate and synthesize the material we have discussed.

Research Paper: The topic of the paper has to be approved in advance by the instructor. All participants are expected to complete their papers within ten days after the semester's end. The earlier we have the topic approved, the more time you will get to spend on the research paper through the semester.

Class Schedule

- 01/30 Articles #1 and #2 (Introduction to venture capital and private equity)
- 2/6 Articles #1 and #2 (Introduction to venture capital and private equity, continued)
- 2/13 Articles #8 and #9 (Contracting in venture capital)
- 2/20 Articles #13 and #14 (Role of human capital in VC)
- 2/27 Articles #17 and #18 (VC monitoring; VC lending)
- 3/5 Articles #23 and #24 (International venture capital)
- 3/12 Articles #28 and #29 (Deregulation in VC/PE industry; VC mobility)
- 3/19 Articles #30 and #31 (Decision making in VC and PE funds: survey evidence)
- 3/26 Articles #34 and #35 (Operational consequences of private equity buyout transactions)
- 4/2 Articles #37 and #38 (Employment and productivity effects of PE buyout transactions)
- 4/9 Spring Recess
- 4/16 Spring Recess
- 4/23 Articles #46 and #47 (Co-investments in Private Equity; Secondary Buyout transactions)
- 4/30 Articles #50 and #51 (Innovation: roles of i) corporate R&D and ii) financial distress)
- 5/7 Articles #53 and #54 (Innovation: roles of i) immigrants and ii) government grants)
- 5/14 Articles #57 and #58 (Innovation and IPO & M&A markets)

List of Papers

The following list of papers is indicative of the research topics in the areas of VC, private equity, and innovation. The highlighted papers will be discussed in class. Non-highlighted papers are for your reference if interested. The list may be modified as the semester progresses.

Venture Capital

1. "A survey of venture capital research", Hellmann, T., Puri, M. L. and Da Rin, M., 2013, Handbook of the Economics of Finance, Volume 2, Part A. Constantinides, G., Harris, M. & Stulz, R. (eds.). Amsterdam: Elsevier, p. 573-648
2. "The structure of venture capital funds", Douglas Cumming, Grant Fleming and Armin Schwienbacher, 2007, Handbook of Research on Venture Capital, Hans Landstrom (eds.). Edward Elgar, p. 155-176
3. "On the lifecycle dynamics of venture-capital and non-venture-capital-financed firms", Puri, M. and R. Zarutskie, Journal of Finance, 2012, 67, 2247-93.
4. "How does Venture Capital Financing Improve Efficiency in Private Firms? A Look Beneath the Surface", Chemmanur, T., K. Krishnan and D. Nandy, Review of Financial Studies, 2011, 4037-4090.
5. "Performance Persistence in Entrepreneurship and Venture Capital", Gompers, P. A., J. Lerner, D. Scharfstein, and A. Kovner. Journal of Financial Economics 96, 2010, 731–764.
6. "Venture Capital Investment Cycles: The Impact of Public Markets", Gompers, P., A. Kovner, J. Lerner, and D. Scharfstein. Journal of Financial Economics 87, 2008, 1–23.
7. "Venture capital reputation and investment performance", Nahata, R., Journal of Financial Economics, 2008, 127-151.
8. "Financial Contracting Theory Meets the Real World: Evidence from Venture Capital Contracts" Kaplan, S., and P. Strömberg, Review of Economic Studies 70, 2003, 281-315.
9. "Paying for Performance in Private Equity: Evidence from VC Partnerships", Niklas Huther, David T. Robinson, Sonke Sievers, Thomas Hartmann-Wendels, Management Science, 2019.
10. "Contracts and Exits in Venture Capital Finance", Cumming, D.J., 2008. Review of Financial Studies 21, 1947-1982.
11. "Changing the Nexus: The Evolution and Renegotiation of Venture Capital Contracts", Bengtsson, O. and B. Sensoy, Journal of Financial and Quantitative Analysis, 2015, 349-375
12. "Venture Capital Contracts", Ewens, M., A. Gorbenko and A. Korteweg, 2019, Working Paper

13. "Founder Replacement and Startup Performance", Ewens, M. and M. Marx, *Review of Financial Studies* 31, 2018, 1532-1565.
14. "How does Human Capital Matter? Evidence from Venture Capital", 2020, Lifeng Gu, Ruidi Huang, Yifei Mao, Xuan Tian, Working Paper
15. "Networking as a Barrier to Entry and the Competitive Supply of Venture Capital", Hochberg, Y., A. Ljungqvist, and Y. Lu, *Journal of Finance* 65, 2010, 829-859.
16. "Cost of Experimentation and the Evolution of Venture Capital", Ewens, M., R. Nanda and M. Rhodes-Kropf, *Journal of Financial Economics* 128, 2018, 422-442.
17. "The Impact of Venture Capital Monitoring", Bernstein, S., X. Giroud, and R. Townsend, *Journal of Finance*, 71, 2016, 1591-1622.
18. "Patent Collateral, Investor Commitment, and the Market for Venture Lending", Hochberg, Y. V., Serrano, C. J., and Ziedonis, R. H., *Journal of Financial Economics*, forthcoming.
19. "Attracting Early Stage Investors: Evidence from a Randomized Field Experiment", Bernstein, S., A. Kortweg and K. Laws, *Journal of Finance*, 72, 2017, 509-538.
20. "Are Early Stage Investors Biased Against Women?" Ewens, M. and R. Townsend, *Journal of Financial Economics*, 2019, forthcoming.
21. "Do International Investors Enhance Private Firm Value? Evidence from Venture Capital" Cumming, D.J., A. Knill, and K. Syvrud, 2016. *Journal of International Business Studies*, 47, 347-373.
22. "Entrepreneurial Litigation and Venture Capital Finance", Cumming, D.J., B. Haslem, and A. Knill, *Journal of Financial and Quantitative Analysis*, 2017, 2217-2250.
23. "The importance of trust for investment: Evidence from venture capital", Bottazzi, L., Da Rin, M. and Hellmann, T., *Review of Financial Studies* 29, 2016, 2283-2318
24. "The Globalization of Angel Investments: Evidence Across Countries", Lerner, J., A. Schoar, S. Sokolinski, and K. Wilson. *Journal of Financial Economics* 127, 2018, 1-20.
25. "The Consequences of Entrepreneurial Finance: Evidence from Angel Financings.", Kerr, W. R., J. Lerner, and A. Schoar. *Review of Financial Studies* 27, 2014, 20-55.
26. "Returns on Venture Capital Investments: Insiders vs. Outsiders", Strebulaev, I., M. Ewens, M. Rhodes-Kropf, 2017, Working Paper.
27. "Managing Performance Signals Through Delay: Evidence from Venture Capital", Ewens, M. and I. Chakraborty, *Management Science*, 2018, 2875-2900.

28. "The Deregulation of the Private Equity Markets and the Decline in IPOs", Ewens, M. and J. Farre-Mensa, 2019, Working Paper
29. "Is the VC Partnership Greater than the Sum of its Partners?" Ewens, M. and M. Rhodes-Kropf, *Journal of Finance*, 2015, 1081-1113.
30. "How Do Venture Capitalists Make Decisions?" Gompers, P. A., W. Gornall, S. N. Kaplan, and I. A. Strebulaev. *Journal of Financial Economics*, 2020, 169-190.

Private Equity

31. "What Do Private Equity Firms (Say They) Do?" Gompers, P., Kaplan, S., and V. Mukharlyamov, *Journal of Financial Economics*, 2016, 449-476.
32. "Club Deals in Leveraged Buyouts", Officer, M., O. Ozbas, and B. Sensoy, 2010, *Journal of Financial Economics* 98, 214-240.
33. "Borrow Cheap, Buy High? Determinants of Leverage and Pricing in Buyouts", Axelson, U., T. Jenkinson, P. Strömberg, and M. Weisbach, *Journal of Finance* 68, 2013, 2223-2267
34. "The Operational Consequences of Private Equity Buyouts: Evidence from the Restaurant Industry", Bernstein, S. and A. Sheen, *Review of Financial Studies* 29, 2016, 2387-2418.
35. "Barbarians at the Store? Private Equity, Products, and Consumers", Fracassi, C., A. Previtro, and A. Sheen, 2020, Working Paper
36. "The Disintermediation of Financial Markets: Direct Investing in Private Equity", Fang, L., V. Ivashina, and J. Lerner. *Journal of Financial Economics* 116, 2015, 160–178.
37. "Politically connected private equity and employment." Faccio, Mara, and Hung-Chia Hsu, 2017. *Journal of Finance*, 72, 539–574.
38. "The Economic Effects of Private Equity Buyouts", Davis, Steven J., John Haltiwanger, Kyle Handley, Ben Lipsius, Josh Lerner, and Javier Miranda. Harvard Business School Working Paper, 2020.
39. "Private Equity, Jobs, and Productivity", Davis, S. J., J. Haltiwanger, K. Handley, R. Jarmin, J. Lerner, and J. Miranda, *American Economic Review* 104, 2014, 3956–3990.
40. "Private equity and workers' career paths: The role of technological change", Agrawal, Ashwini and Prasanna Tambe, *Review of Financial Studies*, 29, 2016, 2455-2489.
41. "Do Private Equity Fund Managers Earn their Fees? Compensation, Ownership, and Cash Flow Performance", Robinson, D.T., and B. Sensoy, *Review of Financial Studies* 26, 2013, 2760-2797

42. "Private Equity Portfolio Company Fees", Axelson, U., M. Ueber, and C. Rauch, *Journal of Financial Economics* 129, 2018, 559-585.
43. "Private Equity Performance: What Do We Know?" Harris, R.S., Kaplan, S., and T. Jenkinson, *Journal of Finance*, 2014, 1851-1882.
44. "Private Equity and Industry Performance", Bernstein, S., J. Lerner, M. Sorensen and P. Strömberg, *Management Science* 63, 2017, 1198–1213.
45. "Estimating Private Equity Returns from Limited Partner Cash Flows", Axelson, U., A. Ang, B. Chen, and W. Goetzmann, *Journal of Finance* 73, 2018, 1751-1783.
46. "Adverse selection and the performance of private equity co-investments", Reiner Braun; Tim Jenkinson and Christoph Schemmerl, *Journal of Financial Economics*, 2019, forthcoming
47. "On secondary buyouts", Axelson, U., F. Degeorge, and J. Martin, *Journal of Financial Economics* 120, 2016, 124-145.
48. "When Investor Incentives and Consumer Interests Diverge: Private Equity in Higher Education." Charlie Eaton, Sabrina Howell and Constantine Yannelis. 2019. Forthcoming, *Review of Financial Studies*.

Innovation and Entrepreneurship in Private Firms

49. "Entrepreneurial Finance and Innovation: An Introduction and Agenda for Future Research," Chemmanur, T. and P. Fulghieri, *Review of Financial Studies*, 2014 (Introduction to Special Issue of the *Review of Financial Studies* on Entrepreneurial Finance and Innovation).
50. "Destructive Creation at Work: How Financial Distress Spurs Entrepreneurship", Babina, T., *Review of Financial Studies*, 2019, forthcoming.
51. "Innovation Investment and Labor Mobility: Employee Entrepreneurship from Corporate R&D." Sabrina Howell and Tania Babina. 2019, Working Paper
52. "Entrepreneurial Spawning: Public Corporations and the Formation of New Ventures, 1986-1999.", Gompers, P. A., J. Lerner, and D.S. Scharfstein. *Journal of Finance* 60, 2005, 577–614.
53. "The Contribution of High-Skilled Immigrants to Innovation in the United States", Bernstein, S., R. Diamond, T. McQuade and B. Pousada, 2020, Working Paper
54. "Financing Innovation: Evidence from R&D Grants.", Howell, Sabrina T., *The American Economic Review* 107, 2017, 1136-64.

55. "Tolerance for Failure and Corporate Innovation", Tian X. and T. Wang, *Review of Financial Studies* 27, 2014, 211-255.
56. "Corporate Venture Capital, Value Creation, and Innovation," Chemmanur, T., E. Loutskina, and X. Tian, *Review of Financial Studies* 27, 2014, 2434-2473.
57. "Catering Innovation: Entrepreneurship and the Acquisition Market", 2020, Xinxin Wang, Working paper
58. "Does Going Public Affect Innovation?" Bernstein, S., *Journal of Finance* 70, 2015, 1365-1403.
59. "Private Equity and Long-Run Investment: The Case of Innovation", Lerner, J., M. Sorensen and P. Strömberg, *Journal of Finance* 66, 2011, 445-477.
60. "Firm boundaries matter: Evidence from conglomerates and R&D activity", Seru, A., *Journal of Financial Economics*, 2014, 381-405.