

Syllabus: Theoretical and Empirical Perspectives on Entrepreneurship

Economics 2730/HBS 4351

Wednesday, Winter Semester 2022, 5:30-8:30 PM

Hawes 202

Harvard Business School

Shai Bernstein and Josh Lerner, Instructors

TEPE explores scholarly work from economics and finance disciplines regarding entrepreneurship—the formation and growth of new firms. While work on this topic dates back to Schumpeter and even earlier, academic research regarding entrepreneurship has exploded over the last decade.

This redesigned class has two components:

- The nine-week “core” component will span economics and finance. It will emphasize the connections between economic theory—particularly in contract theory, organizational economics, and corporate finance--and empirical work. Among the topics that will be covered are the rationale for entrepreneurial firms, the structure of arrangements between entrepreneurs and investors, the relationship with larger entities, entrepreneurial strategy, and the decision to go public.**
- At the same time, entrepreneurship is a dynamic field, with new topics attracting academic (and real world) interest. Reflecting this dynamism, the nine core weeks will be followed by four weeks of special topics that will vary from year-to-year. (Some students may choose to sit in on these sessions, even if they have taken the class before).**

Papers are provided via Canvas, the course platform. All students should have access to Canvas. Students who cannot access the course materials should contact Mary Ann Mroz (mmroz@hbs.edu) to arrange for an alternative way to access the course materials.

There will be some updates to the syllabus and papers as the semester unfolds. An email list maintained by Mary Ann will provide alerts and materials as appropriate.

Three referee reports will be due over the course of the semester. These are indicated in bold italics. Each referee report is a recent, unpublished academic paper that is receiving lots of attention (and is often a current or recent job market paper). In addition, there will be a final paper proposal, which can build off work you are doing for another class or your thesis. The final paper will be due on Friday, May 6th, 2022.

Shai Bernstein (sbernstein@hbs.edu) and Josh Lerner (josh@hbs.edu) will teach all sessions, except for the guest lectures in the 12th session. The TA for the course is Botir Kobilov (bkobilov@hbs.edu).

Core Materials:

Class 1: January 25 (Josh)

Course Introduction

Industry Evolution and Entrepreneurship

Class 2: February 2 (Josh)

Labor Markets and Entrepreneurship

Referee Report #1 Due

Class 3: February 9 (Shai)

Economic Growth and Entrepreneurship

Class 4: February 16 (Shai)

Capital Constraints and Entrepreneurship

Class 5: February 23 (Josh)

Returns to Entrepreneurship

Class 6: March 2 (Josh)

Entrepreneurial Finance: Selection and Deal Structuring

Class 7: March 9 (Shai)

Entrepreneurial Finance: Governance and Value Added

Class 8: March 23 (Shai)

Public vs. Private Markets

Class 9: March 30 (Josh)

Dancing with Elephants: Entrepreneurs and Corporations

Special Topics:

Class 10: April 6 (Josh)

Entrepreneurship and Public Policy

Referee Report #3 Due

Class 11: April 13 (Shai)

Entrepreneurship, Innovation, and Immigration

Class 12: April 20 (Guest Lectures)

To Be Announced

Class 13: April 27 (Shai)

Student Presentations

Course Review

Class 1: January 25 (Josh)

Course Introduction

Entrepreneurship and Industry Evolution

Theory

Cabral, Luis, and Jose Mata, 2003, On the evolution of firm size distribution: Facts and theory, *American Economic Review* 93, 1075-1090.

Jovanovic, Boyan, 1982, Selection and the evolution of industry, *Econometrica* 50, 649-70.

Jovanovic, Boyan, and Glenn McDonald, 1994, The life cycle of a competitive industry, *Journal of Political Economy* 102, 322-347.

Empirics

Decker, Ryan, John Haltiwanger, Ron Jarmin, Javier Miranda, 2016, Where has all the skewness gone? The decline in high-growth (young) firms in the U.S., *European Economic Review* 86, 4-23.

Dunne, Timothy, Mark Roberts, and Larry Samuelson, 1988, Patterns of firm exit and entry in U.S. manufacturing industries, *Rand Journal of Economics* 19, 495-515.

Klepper, Steven, and Elizabeth Grady, 1990, The evolution of new industries and the determinants of market structure, *Rand Journal of Economics* 21, 27-44.

Class 2: February 2 (Josh)

Labor Markets and Entrepreneurship

Theory

Khilstrom, R., and Jean-Jacques Laffont, 1979, A general equilibrium entrepreneurial theory of firm formation based on risk aversion, *Journal of Political Economy* 87, 719-748.

Lazear, Edward, 2005, Entrepreneurship, *Journal of Labor Economics* 23, 649-680.

Empirics

Azoulay, Pierre, Ben Jones, Daniel Kim, and Javier Miranda, 2020, Age and high growth entrepreneurship, *American Economic Review: Insights*, 2:1, 65-82.

Fallick, Bruce, Charles Fleischman, and James Rebitzer, 2006, Job-hopping in Silicon Valley: Some evidence concerning the microfoundations of a high-technology cluster, *Review of Economics and Statistics* 88:3, 472-481.

Hombert, Johan, Antoinette Schoar, David Sraer, and David Thesmar, 2019, Can unemployment insurance spur entrepreneurial activity? Evidence from France, *Journal of Finance*, 75:3, 1247-1285.

Lerner, Josh, and Ulrike Malmendier, 2013, With a little help from my (random) friends: Success and failure in post-business school entrepreneurship. *Review of Financial Studies* 26:10, 2411-2452.

Levine, Ross, and Yona Rubenstein, 2017, Smart and illicit, Who becomes an entrepreneur and do they earn more?, *Quarterly Journal of Economics* 132:2, 963-1018.

Nanda, Ramana, and Jesper Sorensen, 2011, Workplace peers and entrepreneurship, *Management Science* 56, 1116-1126.

Referee's Report #1: Melanie Wallskog, 2021, Entrepreneurial Spillovers Across Coworkers, Unpublished working paper, Stanford University.

Economic Growth and Entrepreneurship

Theory

Akcigit, Ufuk, and William Kerr, 2018, Growth through heterogeneous innovations, *Journal of Political Economy* 126, 1374-1443.

Baumol, William, 1990, Entrepreneurship: Productive, unproductive, and destructive, *Journal of Political Economy* 98, 893-921.

Murphy, Kevin, Andrei Shleifer, and Robert Vishny, 1991, The allocation of talent: Implications for growth, *Quarterly Journal of Economics* 106, 503-530.

Empirics

Garcia-Macia, Daniel, Chang-Tai Hsieh, and Peter Klenow, 2019, How destructive is innovation?, *Econometrica*, 87 (5), 1507-1541.

Glaeser, Edward, Sari Pekkala Kerr, and William Kerr, 2015, Entrepreneurship and urban growth: An empirical assessment with historical mines, *Review of Economics and Statistics* 97, 498-520.

Haltiwanger, John, Ron Jarmin, and Javier Miranda, 2013, Who creates jobs? Small versus large versus young, *Review of Economics and Statistics* 95:2, 347-361.

Samila, Sampsa, and Olav Sorenson, 2011, Venture capital, entrepreneurship and economic growth, *Review of Economics and Statistics*, 93:1, 338-349.

Class 4: February 16 (Shai)

Capital Constraints and Entrepreneurship

Theory

Cagetti, Marco, and Mariacristina De Nardi, 2006, Entrepreneurship, frictions, and wealth, *Journal of Political Economy* 114:5, 835-870.

Evans, David S., and Boyan Jovanovic, 1989, An estimated model of entrepreneurial choice under liquidity constraints, *Journal of Political Economy* 97, 808-827.

Holtz-Eakin, Douglas, David Joulfaian, and Harvey S. Rosen, 1994, Sticking it out: Entrepreneurial survival and liquidity constraints, *Journal of Political Economy* 102, 53-75.

Stiglitz, Joseph, and Andrew Weiss, 1981, Credit rationing in markets with imperfect information, *American Economic Review* 71:3, 393-410.

Empirics

Anderson, Steffen, and Kasper M. Nielsen, 2012, Ability or finances as constraints on entrepreneurship? Evidence from survival rates in a natural experiment, *Review of Financial Studies* 25:12, 3684-3710.

Greenstone, Michael, Alexandre Mas, and Hoai-Luu Nguyen, 2020, Do credit market shocks affect the real economy? Quasi-experimental evidence from the Great Recession and 'normal' economic times, *American Economic Journal: Economic Policy* 12:1, 200-225.

Hurst, Erik, and Annamaria Lusardi, 2004, Liquidity constraints, household wealth, and entrepreneurship, *Journal of Political Economy* 112:2, 319-347.

Robb, Alicia, and David T. Robinson, 2014, The capital structure decisions of new firms, *Review of Financial Studies*, 27:1, 153-179.

Tsoutsoura, Margarita, 2015, The effect of succession taxes on family firm investment: Evidence from a natural experiment, *Journal of Finance* 70:2, 649-688.

Class 5: February 23 (Josh)

Returns to Entrepreneurship

Theory

Galina, Vereshchagina, and Hugo A. Hopenhayn, 2009, Risk taking by entrepreneurs, *American Economic Review* 99:5, 1808-1830.

Empirics

Astebro, Thomas, Jing Chen, and Peter Thompson, 2011, Stars and misfits-self-employment and labor market frictions, *Management Science* 57, 1999-2017.

Hall, Robert, and Susan Woodward, 2010, The burden of the nondiversifiable risk of entrepreneurship, *American Economic Review* 100:3, 1163-1194.

Hamilton, Barton, 2000, Does entrepreneurship pay? An empirical analysis of the returns to self-employment, *Journal of Political Economy* 108:3, 604-631.

Kartashova, K., 2014, Private equity premium puzzle revisited, *American Economic Review* 104:10, 3297-3334.

Levine Ross, and Yona Rubenstein, 2017, Smart and illicit. Who becomes an entrepreneur and do they earn more?, *Quarterly Journal of Economics* 132:2, 963-1018.

Manso, Gustavo, 2016, Experimentation and the returns to entrepreneurship, *Review of Financial Studies* 29:9, 2319-2340.

Moskowitz, Tobias J., and Annette Vissing-Jorgensen, 2002, The returns to entrepreneurial investment: A private equity premium puzzle? *American Economic Review* 92, 745-778.

Sarada, 2016, The unobserved returns from entrepreneurship, Working paper.

Class 6: March 2 (Josh)

Entrepreneurial Finance: Selection and Deal Structuring

Theory

Admati, Anat, and Paul Pfleiderer, 1994, Robust Financial Contracting and the Role of Venture Capitalists, *Journal of Finance*, 49: 371-402

Cornelli, Francesca, and Oved Yosha, 2003, Stage Financing and the Role of Convertible Securities, *Review of Economic Studies*, 70:1, 1–32

Empirics

Bernstein, Shai, Arthur Korteweg, and Kevin Laws, 2017, Attracting early stage investors: Evidence from a randomized field experiment, *Journal of Finance* 72:2, 509-538.

Gompers, Paul A., Will Gornall, Steven N. Kaplan, and Ilya A. Strebulaev, 2020, How do venture capitalists make decisions?, *Journal of Financial Economics*, 135:1, 169-190.

Kaplan, Steven, Berk Sensoy, and Per Strömberg, 2009, Should investors bet on the jockey or the horse: Evidence from the evolution of firms from early business plans to public companies, *Journal of Finance* 64:1, 75-115.

Kaplan, Steven, and Per Strömberg, 2003, Financial contracting theory meets the real world: An empirical analysis of venture capital contracts, *Review of Economic Studies* 70, 281-315.

Class 7: March 9 (Shai)

Entrepreneurial Finance: Governance and Value Added

Theory

Aghion, Philippe, and Jean Tirole, 1994, On the management of innovation, *Quarterly Journal of Economics* 109, 1185-1207.

Dessein, Wouter, 2005, Information and Control in Ventures and Alliances, *Journal of Finance*, 60, 2513-2549.

Nanda, Ramana, and Matthew Rhodes-Kropf, 2017, Financing risk and innovation, *Management Science* 63:4, 901-918.

Neher, Darwin, 1999, Staged Financing: An Agency Perspective, *Review of Economic Studies*, 66:2, 255-274.

Empirics

Bernstein, Shai, Xavier Giroud, and Richard R. Townsend, 2016, The Impact of Venture Capital Monitoring, *Journal of Finance*, 71, 1591-1622.

Chemmanur, Thomas, Karthik Krishnan, and Debarshi Nandy, 2011, How does venture capital financing improve efficiency in private firms? A look beneath the surface, *Review of Financial Studies* 24:12, 4037-4090.

Lerner, Josh, Antoinette Schoar, Stanislav Sokolinski, and Karen Wilson, 2018, The globalization of angel investing: Evidence across countries, *Journal of Financial Economics*, 127:1, 1-20.

Lamoreaux, Naomi R., Margaret Levenstein, and Kenneth L. Sokoloff, 2004, Financing invention during the second Industrial Revolution: Cleveland, Ohio, 1870-1920, National Bureau of Economic Research Working Paper No. 10923.

Class 8: March 23 (Shai)

Public vs. Private Markets

Theory

Brau, James C. and Stanley E. Fawcett, 2006, Initial public offerings: An analysis of theory and practice, *Journal of Finance* 61, 399-436.

Chemmanur, Thomas J., and Paolo Fulghieri, 1999, A theory of the going-public decision, *Review of Financial Studies* 12, 249–279.

Maksimovic, Vojislav, and Pegaret Pichler, 2001, Technological innovation and initial public offerings, *Review of Financial Studies* 14, 459–494.

Zingales, Luigi, 1995, Insider ownership and the decision to go public, *Review of Economic Studies* 62, 425-448.

Empirics

Bernstein, Shai, 2015, Does going public affect innovation?, *Journal of Finance* 70:4, 1365-1403.

Bernstein, Shai, Abhishek Dev, and Josh Lerner, 2018, The creation and evolution of entrepreneurial public markets, *Journal of Financial Economics*.

Doidge, Craig, G. Andrew Karolyi, and René M. Stulz, 2017, The U.S. listing gap, *Journal of Financial Economics* 123:3, 464-487.

Ewens, Michael, and Joan Farre-Mensa. 2020, The deregulation of the private equity markets and the decline in IPOs, *Review of Financial Studies*, 33, 5463–5509.

Ferreira, Daniel, Gustavo Manso, and Andre Silva, 2014, Incentives to innovate and the decision to go public or private, *Review of Financial Studies* 27, 256-300.

Gao, Xiaohui, Jay Ritter, and Zhongyan Zhu, 2013, Where have all the IPOs gone?, *Journal of Financial and Quantitative Analysis* 48:6, 1663-1692.

Pagano, Marco, Fabio Panetta, and Luigi Zingales, 1998, Why do companies go public? An empirical analysis, *Journal of Finance* 53:1, 27-64.

Referee's Report #2: Camille Hebert, 2021, Gender Stereotypes and Entrepreneur Financing, Unpublished working paper, University of Toronto.

Class 9: March 30 (Josh)

Dancing with Elephants: Entrepreneurs and Corporations

Theory

Hellmann, Thomas, and Enrico Perotti, 2011, The circulation of ideas in firms and markets, *Management Science* 57, 1813-1826.

Manso, Gustavo, 2011, Motivating innovation, *Journal of Finance* 66, 1823-1869.

Empirics

Chemmanur, Thomas, Elena Loutskina, and Xuan Tian, 2014, Corporate venture capital, value creation, and innovation, *Review of Financial Studies* 27:8, 2434-2473.

Cunningham, Colleen, Florian Ederer, and Song Ma, 2021, Killer acquisitions, *Journal of Political Economy*, 129:3, 649–702.

Lerner, Josh, and Ulrike Malmendier, 2010, Contractibility and the design of research agreements *American Economic Review* 100:1, 214-46.

Ma, Song, 2020, The life cycle of corporate venture capital, *Review of Financial Studies*, 33:1, 358–394.

Seru, Amit, 2014, Firm boundaries matter: Evidence from conglomerates and R&D activity, *Journal of Financial Economics* 111:2, 381-405.

Class 10: April 6 (Josh)

Entrepreneurship and Public Policy

Theory

Lach, Saul, Zvika Neeman, and Mark Schankerman, 2021, “Government financing of R&D: A mechanism design approach,” *American Economic Journal: Microeconomics* 13, 238-72.

Empirics

Azoulay, Pierre, Josh Graff-Zivin, Danielle Li, and Bhaven Sampat, 2019, Public R&D investments and private sector patenting: Evidence from NIH funding rules, *Review of Economic Studies* 86, 117-152.

Bai, Jessica, Shai Bernstein, Abhishek Dev, and Josh Lerner, 2021, Public entrepreneurial finance around the globe, Working paper no. 28744, National Bureau of Economic Research.

Budish, Eric, Benjamin Roin, and Heidi Williams, 2015, Do firms underinvest in long-term research? Evidence from cancer clinical trials, *American Economic Review* 105:7, 2044-2085.

Ewens, Michael, Ramana Nanda, and Matthew Rhodes-Kropf, 2018, Cost of experimentation and the evolution of venture capital. *Journal of Financial Economics* 128, 422-442.

Howell, Sabrina, 2017, Financing innovation: Evidence from R&D grants, *American Economic Review* 107, 1136-64.

Lanahan, Lauren, and Kyle Myers, 2021, Research subsidy spillovers, two ways, Unpublished working paper, University of Oregon.

Referee’s Report #3: Pless, Jacquelyn, 2021, Are ‘complementary policies’ substitutes? Evidence from R&D subsidies in the UK, Unpublished working paper, Massachusetts Institute of Technology.

Class 11: April 13 (Shai)

Entrepreneurship, Innovation, and Immigration

Akcigit, Ufuk, Salomé Baslandze, and Stefanie Stantcheva, 2016, Taxation and the international mobility of inventors. *American Economic Review* 106:10, 2930-81.

Bernstein, Shai, Rebecca Diamond, Timothy McQuade, and Beatriz Pousada, 2021, The Contribution of high-skilled immigrants to innovation in the United States. Working paper no.28713, National Bureau of Economic Research.

Dimmock, Stephen G., Jiekun Huang, and Scott J. Weisbenner, 2021, Give me your tired, your poor, your high-skilled labor: H-1b lottery outcomes and entrepreneurial success. *Management Science*, forthcoming.

Hunt, Jennifer, 2011, Which immigrants are most innovative and entrepreneurial? Distinctions by entry visa. *Journal of Labor Economics* 29.3: 417-457.

Kerr, William R., and Martin Mandorff, 2015, Social networks, ethnicity, and entrepreneurship. Working paper no. 21597< National Bureau of Economic Research

Kerr, William R., 2008, Ethnic scientific communities and international technology diffusion, *Review of Economics and Statistics* 90.3: 518-537

Kerr, Sari, and William Kerr, 2020, Immigrant entrepreneurship in America: Evidence from the Survey of Business Owners 2007 & 2012. *Research Policy* 49:3, 103918.

Kerr, Sari, and William Kerr, 2017, Immigrant entrepreneurship, in *Measuring Entrepreneurial Businesses: Current Knowledge and Challenges*. Vol. 75, *Studies in Income and Wealth (NBER)*. Chicago, University of Chicago Press.

Nanda, Ramana, and Tarun Khanna, 2010, Diasporas and domestic entrepreneurs: Evidence from the Indian software industry. *Journal of Economics & Management Strategy* 19.4: 991-1012.

Saxenian, Anna Lee, Yasuyuki Motoyama, and Xiaohong Quan, 2002, *Local and global networks of immigrant professionals in Silicon Valley*. Public Policy Institute of California.

Class 12: April 20

To Be Announced

Class 13: April 27 (Shai)

Student Presentations

Course Review

No assigned readings