

ECON 4264:

Economics of Innovation and Entrepreneurship

Spring 2023

Basic Information

Time and Location		Contact Info	
Time	Tuesday 9:00 AM - 10:20 AM Thursday 9:00 AM - 10:20 AM	Instructor	Robin Kaiji Gong
		Email	rkgong@ust.hk
Location	2465	TA	Cassie Kaixin Zhang
Zoom link (online)	See Canvas	Email	kzhangbh@connect.ust.hk

1. Office hour is by-appointment; my office is at 6058, LSK Bldg.
2. There is no regular tutorial sections. A review session will be held before the midterm.

Course Description

This course will introduce students to fundamentals of entrepreneurship and innovation from an economist's perspective. The course will be separated into two parts: the first part focuses on basic concepts and tools in the Economics of Entrepreneurship and Entrepreneurial Finance; the second part discusses topics related to Economics of Innovation. The purpose of the class is twofold: first, students are expected to acquire the very basic knowledge that may help them plan and launch entrepreneurial ventures as entrepreneurs and innovators; second, students are expected to understand the economic institutions where entrepreneurship and innovation take place.

Assessment Scheme

1. Class Participation (20%)

- Attendance: Attend the lectures/Zoom meetings with your camera on. If you cannot attend the next lecture, please let me know in advance.
- After-class Q&A: Each lecture will conclude with a “leftover” question. You will be randomly selected to answer the leftover question in the next lecture.
- In-class discussions: The lecture may include occasional discussions, which will be conducted in groups.
- Other: You are encouraged to ask/answer questions or make comments during class.

2. Midterm Exam (30%)

- The midterm exam will be open book and open notes.
- The midterm exam will mainly cover questions in entrepreneurial economics and finance, but might also contain other materials from the first half semester.
- In the case of absence at the midterm exam due to medical reasons, you are required to submit medical certificate issued by a registered medical practitioner. Appropriate documentation will be required for absences due to other reasons.

3. Group Presentation (30%)

- You will form groups for the presentations at the end of the semester. Each group will consist of around 4 people.
- Each group will choose from a set of cases or questions relating to innovation and entrepreneurship.
- Each group will make a 30-minute presentation in the two group presentation sessions at the end of the semester.

4. Term paper (20%)

- You are required to submit a term paper by May 21.
- The term paper should be about 3 to 4 pages in length (excluding tables, figures, and references).
- The topic(s) of the term paper will be announced at the end of the semester.
- The term paper should follow the basic rules of academic writing.

Other Organizational Matters

1. Course website

- Website address: <http://canvas.ust.hk>.
- Lecture notes and reading materials will be posted on the course website.

2. Recommended books (not required)

- The Economics of Entrepreneurship, 2nd Edition, by Simon C. Parker;
- Entrepreneurial Finance, 6th Edition, by J. Chris Leach and Ronald W. Melicher;
- Venture Capital and the Finance of Innovation, 2nd Edition, by Andrew Metrick and Ayako Yasuda;
- The Economics of Innovation: An Introduction, by G. M. P. Swann.

3. Email Policy

- Please send me an email before coming to my office outside scheduled office hours.
- In the title of your email, please put the following: [ECON4999Q-YOURNAME]

4. Learning Environment

- Please refer to the following website for the guideline for good learning environment: http://www.ust.hk/vpaa0/conduct/good_learning_experience.pps.

5. Academic Honesty and Integrity

- Honesty and Integrity is central value in HKUST. Please be aware of the importance and maintain high standard of honesty in the problem sets, examinations, and writings in this course. Familiarize yourself to the university rules and the HKUST academic honor code by visiting following website: <http://www.ust.hk/vpaa0/integrity>.

Course Schedule

Session	Dates	Topic
<u>Part 1: Introduction to Entrepreneurship</u>		
Module 1	Feb 7, 9	What is Entrepreneurship?
Module 2	Feb 14, 16	The Economic Theories of Entrepreneurship
Module 3	Feb 21, 23	The Determinants of Entrepreneurship
Module 4	Feb 28 Mar 2, 7, 9, 14	Entrepreneurial Finance
Module 5	Mar 21, 23	Special Topics in Entrepreneurship
	Mar 30	Midterm Exam*
<u>Part 2: Introduction to Innovation</u>		
Module 6	Apr 4, 6	The Nature of Innovation
Module 7	Apr 11, 13	Intellectual Property
Module 8	Apr 20	Innovation and the Market
Module 9	Apr 25	Firm Innovation
Module 10	Apr 27	Innovation Policies
Module 11	May 2, 4	Guest Speaker Lectures
	May 9, 11	Group Presentation*

Note 1: Review session for the midterm exam is on March 28.

Note 2: The term paper will be due at 11:59 PM, 29-May.

Note 3: There might be some updates to the syllabus and papers as the semester unfolds. The updated versions will be posted on Canvas.

Reading List

Module 1

1. Lazear, Edward P. 2004. "Balanced Skills and Entrepreneurship." *The American Economic Review*. 94(2): 208-211.
2. Hurst, Erik, and Benjamin Wild Pugsley. 2011. "What Do Small Businesses Do?" *NBER Working Paper*.
3. Fairlie, Robert W., and Frank M. Fossen. 2020. "Defining Opportunity Versus Necessity Entrepreneurship: Two Components of Business Creation." *Emerald Publishing Limited*.

Module 2

1. **Borjas, George J. 1987. "Self-Selection and the Earnings of Immigrants." *The American Economic Review*. 77(4): 531-553.**
2. **Stiglitz, Joseph E., and Andrew Weiss. 1981. "Credit Rationing in Markets with Imperfect Information." *The American Economic Review*. 71(3): 393-410.**
3. De Wit, Gerrit. 1993. "Models of Self-employment in a Competitive Market." *Journal of Economic Surveys*. 7(4): 367-397.
4. Sheshinski, Eytan, and Jacques H. Dreze. 1976. "Demand Fluctuations, Capacity Utilization, and Costs." *The American Economic Review*. 66(5): 731-742.
5. Roy, Andrew Donald. 1951. "Some Thoughts on the Distribution of Earnings." *Oxford Economic Papers*. 3(2): 135-146.
6. Dixit, Avinash. 1989. "Entry and exit decisions under uncertainty." *Journal of Political Economy*. 97(3): 620-638.
7. Lucas Jr, Robert E. 1978. "On the Size Distribution of Business Firms." *The Bell Journal of Economics*. 9(2): 508-523.
8. Kihlstrom, Richard E., and Jean-Jacques Laffont. 1979. "A General Equilibrium Entrepreneurial Theory of Firm Formation Based on Risk Aversion." *Journal of Political Economy*. 87(4): 719-748.
9. Banerjee, Abhijit V., and Andrew F. Newman. 1993. "Occupational Choice and the Process of Development." *Journal of Political Economy*. 101(2): 274-298.

Module 3

1. **Hamilton, Barton. 2000. "Does Entrepreneurship Pay? An Empirical Analysis of the Returns to Self-employment." *Journal of Political Economy*. 108(3): 604-631.**
2. **Lichter, Andreas, Max Löffler, and Sebastian Siegloch. 2021. "The Long-term Costs of Government Surveillance: Insights from Stasi Spying in East Germany." *Journal of the European Economic Association*. 19(2): 741-789.**

3. **Levine, Ross, and Yona Rubinstein. 2017. "Smart and Illicit: Who Becomes an Entrepreneur and Do They Earn More?" *The Quarterly Journal of Economics*. 132(2): 963-1018.**
4. Taylor, Mark P. 1996. "Earnings, Independence or Unemployment: Why Become Self-employed?" *Oxford Bulletin of Economics and Statistics*. 58(2): 253-266.
5. Parker, Simon C., Yacine Belghitar, and Tim Barmby. 2005. "Wage Uncertainty and the Labour Supply of Self-employed Workers." *The Economic Journal* 115(502): C190-C207.
6. Blanchflower, David G., and Andrew J. Oswald. 1998. "What Makes an Entrepreneur?" *Journal of Labor Economics* 16(1): 26-60.
7. Benz, Matthias, and Bruno S. Frey. 2008. "Being Independent Is a Great Thing: Subjective Evaluations of Self-employment and Hierarchy." *Economica*. 75(298): 362-383.
8. Bates, Timothy. 1990. "Entrepreneur Human Capital Inputs and Small Business Longevity." *Review of Economics and Statistics*. 72(4): 551-559.
9. Oosterbeek, Hessel, Mirjam Van Praag, and Auke Ijsselstein. 2010. "The Impact of Entrepreneurship Education on Entrepreneurship Skills and Motivation." *European Economic Review*. 54(3): 442-454.
10. Gompers, Paul, Anna Kovner, Josh Lerner, and David Scharfstein. 2010. "Performance Persistence in Entrepreneurship." *Journal of Financial Economics* 96(1): 18-32.
11. Lafontaine, Francine, and Kathryn Shaw. 2016. "Serial Entrepreneurship: Learning by Doing?" *Journal of Labor Economics*. 34(S2): S217-S254.
12. Gompers, Paul, Josh Lerner, and David Scharfstein. 2005. "Entrepreneurial Spawning: Public Corporations and the Genesis of New Ventures, 1986 to 1999." *The Journal of Finance* 60(2): 577-614.
13. Koudstaal, Martin, Randolph Sloof, and Mirjam Van Praag. 2016. "Risk, Uncertainty, and Entrepreneurship: Evidence from a Lab-in-the-field Experiment." *Management Science* 62(10): 2897-2915.
14. Kerr, Sari Pekkala, William R. Kerr, and Tina Xu. 2017. "Personality Traits of Entrepreneurs: A Review of Recent Literature." *NBER Working Paper*.

Module 4

1. **Kaplan, Steven N., and Per Strömberg. 2003. "Financial Contracting Theory Meets the Real World: An Empirical Analysis of Venture Capital Contracts." *The Review of Economic Studies* 70(2): 281-315.**

Module 5

1. **Kerr, William, Ramana Nanda, and Matthew Rhodes-Kropf. 2014. "Entrepreneurship As Experimentation." *Journal of Economic Perspectives* 28(3): 25-48.**

2. **Murphy, Kevin. M, Andrei Shleifer, and Robert W Vishny. 1991. "The Allocation of Talent: Implications for Growth." *Quarterly Journal of Economics*. 106 (2): 503-530.**
3. **Decker, Ryan, John Haltiwanger Ron Jarmin, and Javier Miranda. 2014. "The Role of Entrepreneurship in US Job Creation and Economic Dynamism." *Journal of Economic Perspectives* 28(3): 3-24.**
4. **Hellmann, Thomas and Manju Puri. 2002. "Venture Capital and the Professionalization of Start-up Firms: Empirical Evidence." *The Journal of Finance* 57(1): 169-197.**
5. **Samila, Sampsa, and Olav Sorenson. 2011. "Venture Capital, Entrepreneurship and Economic Growth." *Review of Economics and Statistics* 93(1): 338-349.**
6. **Lerner, Josh. 2002. "When Bureaucrats Meet Entrepreneurs: the Design of Effective 'Public Venture Capital' Programmes." *The Economic Journal* 112(477): F73-F84.**
7. **Huang, Zhaojun, and Xuan Tian. 2020. "China's Venture Capital Market." *The Handbook on China's Financial System* 6: 383-418.**
8. **Baumol, William J. 1990. "Entrepreneurship: Productive, Unproductive, and Destructive." *Journal of Political Economy* 98(5): 893-921.**
9. **Murphy, Kevin M., Andrei Shleifer, and Robert W. Vishny. 1993. "Why Is Rent-seeking so Costly to Growth?" *The American Economic Review* 83(2): 409-414.**
10. **Glaeser, Edward L., Sari Pekkala Kerr, and William R. Kerr. 2015. "Entrepreneurship and Urban Growth: An Empirical Assessment with Historical Mines." *Review of Economics and Statistics* 97(2): 498-520.**
11. **Bai, Chong-En, Ruixue Jia, Hongbin Li, and Xin Wang. 2021. "Entrepreneurial Reluctance: Talent and Firm Creation in China." *NBER Working Paper*.**
12. **Decker, Ryan A., John Haltiwanger, Ron S. Jarmin, and Javier Miranda. 2016. "Where Has All the Skewness Gone? The Decline in High-growth (young) Firms in the US." *European Economic Review* 86: 4-23.**
13. **Bernstein, Shai, Arthur Korteweg, and Kevin Laws. 2017. "Attracting Early-stage Investors: Evidence from a Randomized Field Experiment." *The Journal of Finance* 72(2): 509-538.**
14. **Bernstein, Shai, Xavier Giroud, and Richard R. Townsend. "The Impact of Venture Capital Monitoring." *The Journal of Finance* 71(4): 1591-1622.**
15. **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.**
16. **Kortum, Samuel, and Josh Lerner. 2000. "Assessing the Impact of Venture Capital on Innovation." *Rand Journal of Economics* 31(4): 674-692.**
17. **Nanda, Ramana, and Matthew Rhodes-Kropf. 2013. "Investment cycles and startup innovation." *Journal of Financial Economics* 110(2): 403-418.**
18. **Lerner, Josh. 1999. "The Government As Venture Capitalist: The Long-run Effects of the SBIR Program." *The Journal of Business* 72(3): 285-318.**
19. **Da Rin, Marco, Giovanna Nicodano, and Alessandro Sembenelli. 2006. "Public Policy and the Creation of Active Venture Capital Markets." *Journal of Public Economics* 90(8-9):**

1699–1723.

20. Brander, James A., Qianqian Du, and Thomas F. Hellmann. 2015. "The Effects of Government-sponsored Venture Capital: International Evidence." *Review of Finance* 19(2): 571–618.
21. Cumming, Douglas J., Luca Grilli, and Samuele Murtinu. 2017. "Governmental and Independent Venture Capital Investments in Europe: A Firm-level Performance Analysis." *Journal of Corporate Finance* 42: 439–459.
22. Li, Hongbin, Lingsheng Meng, Qian Wang, and Li-An Zhou. 2008. "Political Connections, Financing and Firm Performance: Evidence from Chinese Private Firms." *Journal of Development Economics* 87(2): 283-299.
23. Jiang, Fuxiu, and Kenneth A. Kim. 2015. "Corporate Governance in China: A Modern Perspective." *Journal of Corporate Finance* 32: 190-216.
24. Bai, Chong-En, Chang-Tai Hsieh, Zheng Song, and Xin Wang. 2021. "Special Deals from Special Investors: The Rise of State-Connected Private Owners in China." *Working Paper*.
25. Hau, Harald, Yi Huang, Hongzhe Shan, Zixia Sheng. 2021. "FinTech Credit and Entrepreneurial Growth." *Working Paper*.

Module 6

1. Solow, Robert M. 1956. "A Contribution to the Theory of Economic Growth." *The Quarterly Journal of Economics* 70(1): 65-94.
2. Arrow, Kenneth Joseph. 1971. "The Economic Implications of Learning by Doing." *Readings in the Theory of Growth*: 131-149.
3. Romer, Paul M. 1986. "Increasing Returns and Long-run Growth." *Journal of Political Economy*. 94(5): 1002-1037.
4. Romer, Paul M. 1990. "Endogenous Technological Change." *Journal of Political Economy* 98(5): S71-S102.
5. Grossman, Gene M., and Elhanan Helpman. 1991. "Quality Ladders in the Theory of Growth." *The review of Economic Studies* 58(1): 43-61.
6. Grossman, Gene M., and Elhanan Helpman. 1991. "Trade, Knowledge Spillovers, and Growth." *European Economic Review* 35(2-3): 517-526.
7. Aghion, Philippe, and Peter Howitt. 1992. "A Model of Growth through Creative Destruction." *Econometrica*. 60(2): 323-351.
8. Hall, Bronwyn H. 2011. "Innovation and Productivity." *NBER Working Paper*.
9. Braguinsky, Serguey, Atsushi Ohyama, Tetsuji Okazaki, and Chad Syverson. 2021. "Product Innovation, Product Diversification, and Firm Growth: Evidence from Japan's Early Industrialization." *American Economic Review* 111(12): 3795-3826.
10. Griliches, Zvi. 1992. "The Search for R&D Spillovers." *The Scandinavian Journal of Economics* 94: S29–S47.
11. Jaffe, Adam B., Manuel Trajtenberg, and Rebecca Henderson. 1993. "Geographic Localiza-

- tion of Knowledge Spillovers As Evidenced by Patent Citations." *The Quarterly Journal of Economics* 108(3): 577-598.
12. Keller, Wolfgang. 2004. "International Technology Diffusion." *Journal of Economic Literature* 42(3): 752-782.
 13. Hall, Bronwyn H., Jacques Mairesse, and Pierre Mohnen. 2010. "Measuring the Returns to R&D." *Handbook of the Economics of Innovation* 2:1033-1082.

Module 7

1. Moser, Petra. 2005. "How Do Patent Laws Influence Innovation? Evidence from Nineteenth-century World's Fairs." *American Economic Review* 95(4): 1214-1236.
2. Trajtenberg, Manuel, Rebecca Henderson, and Adam Jaffe. 1997. "University Versus Corporate Patents: A Window on the Basicness of Invention." *Economics of Innovation and New Technology* 5(1): 19-50.
3. Kogan, Leonid, Dimitris Papanikolaou, Amit Seru, and Noah Stoffman. 2017. "Technological Innovation, Resource Allocation, and Growth." *The Quarterly Journal of Economics* 132(2): 665-712.
4. Nordhaus, William D. 1969. "An Economic Theory of Technological Change." *American Economic Review* 59(2): 18-28.
5. Moser, Petra. 2013. "Patents and Innovation: Evidence from Economic History." *Journal of Economic Perspectives* 27(1): 23-44.
6. Boldrin, Michele, and David K. Levine. 2013. "The Case Against Patents." *Journal of Economic Perspectives* 27(1): 3-22.
7. Giorcelli, Michela, and Petra Moser. 2020. "Copyrights and Creativity: Evidence from Italian Opera in the Napoleonic Age." *Journal of Political Economy* 128(11): 4163-4210.
8. Hall, Bronwyn H., Adam B. Jaffe, and Manuel Trajtenberg. 2001. "The NBER Patent Citation Data File: Lessons, Insights and Methodological Tools." *NBER Working Paper*.
9. Bloom, Nicholas, Mark Schankerman, and John Van Reenen. 2013. "Identifying Technology Spillovers and Product Market Rivalry." *Econometrica* 81(4): 1347-1393.
10. Teece, David J. "Profiting from Technological Innovation: Implications for Integration, Collaboration, Licensing and Public Policy." *Research Policy* 15(6): 285-305.
11. Gans, Joshua S., David H. Hsu, and Scott Stern. 2002. "When Does Start-Up Innovation Spur the Gale of Creative Destruction?." *RAND Journal of Economics*: 571-586.
12. Arora, Ashish, and Marco Ceccagnoli. 2006. "Patent Protection, Complementary Assets, and Firms' Incentives for Technology Licensing." *Management Science* 52(2): 293-308.
13. Mann, William. 2018. "Creditor Rights and Innovation: Evidence from Patent Collateral." *Journal of Financial Economics* 130(1): 25-47.
14. Kline, Patrick, Neviana Petkova, Heidi Williams, and Owen Zidar. 2019. "Who Profits from Patents? Rent-sharing at Innovative Firms." *The Quarterly Journal of Economics* 134(3):

1343-1404.

15. Sampat, Bhaven, and Heidi L. Williams. 2019. "How Do Patents Affect Follow-on Innovation? Evidence from the Human Genome." *The American Economic Review* 109(1): 203-36.
16. Farre-Mensa, Joan, Deepak Hegde, and Alexander Ljungqvist. 2020. "What Is a Patent Worth? Evidence from the US Patent "Lottery"." *The Journal of Finance* 75(2) (2020): 639-682.

Module 8

1. **Atkin, David, Azam Chaudhry, Shamyla Chaudry, Amit K. Khandelwal, and Eric Verhoogen. 2017. "Organizational Barriers to Technology Adoption: Evidence from Soccer-ball Producers in Pakistan." *The Quarterly Journal of Economics* 132(3): 1101-1164.**
2. **Aghion, Philippe, Nick Bloom, Richard Blundell, Rachel Griffith, and Peter Howitt. 2005. "Competition and Innovation: An Inverted-U Relationship." *The Quarterly Journal of Economics* 120(2): 701-728.**
3. **Acemoglu, Daron, and Pascual Restrepo. 2019. "Automation and New Tasks: How Technology Displaces and Reinstates Labor." *Journal of Economic Perspectives* 33(2): 3-30.**
4. Hall, Bronwyn, and Beethika Khan. 2003. "Adoption of New Technology." *New Economy Handbook*.
5. Atkin, David, Amit K. Khandelwal, and Adam Osman. 2017. "Exporting and firm performance: Evidence from a randomized experiment." *The Quarterly Journal of Economics* 132(2): 551-615.
6. Verhoogen, Eric. 2021. "Firm-level Upgrading in Developing Countries." *NBER Working Paper*.
7. Bloom, Nicholas, Mirko Draca, and John Van Reenen. 2016. "Trade Induced Technical Change? The Impact of Chinese Imports on Innovation, IT and Productivity." *The Review of Economic Studies* 83(1): 87-117.
8. Dorn, David, Gordon H. Hanson, Gary Pisano, and Pian Shu. 2020. "Foreign Competition and Domestic Innovation: Evidence from US Patents." *American Economic Review: Insights* 2(3): 357-74.
9. Acemoglu, Daron, David Dorn, Gordon H. Hanson, and Brendan Price. 2014. "Return of the Solow Paradox? IT, Productivity, and Employment in US Manufacturing." *American Economic Review* 104(5): 394-99.
10. Acemoglu, Daron, and Pascual Restrepo. 2018. "The race between man and machine: Implications of technology for growth, factor shares, and employment." *American Economic Review* 108(6): 1488-1542.
11. Cheng, Hong, Ruixue Jia, Dandan Li, and Hongbin Li. 2019. "The Rise of Robots in China."

Module 9

1. **Brown, James, Steven Fazzari, and Bruce Petersen. 2009. "Financing Innovation and Growth: Cash Flow, External Equity, and the 1990s R&D Boom." *The Journal of Finance* 64(1): 151-185.**
2. **Manso, Gustavo. 2011. "Motivating Innovation." *The Journal of Finance* 66(5): 1823-1860.**
3. **Seru, Amit. 2014. "Firm Boundaries Matter: Evidence from Conglomerates and R&D Activity." *Journal of Financial Economics* 111(2): 381-405.**
4. Hall, Bronwyn H., and Josh Lerner. 2010. "The Financing of R&D and Innovation." *Handbook of the Economics of Innovation* 1:609-639.
5. Hsu, Po-Hsuan, Xuan Tian, and Yan Xu. 2014. "Financial Development and Innovation: Cross-country Evidence." *Journal of Financial Economics* 112(1): 116-135.
6. Kerr, William R., and Ramana Nanda. 2015. "Financing Innovation." *Annual Review of Financial Economics* 7: 445-462.
7. Barker III, Vincent L., and George C. Mueller. 2002. "CEO Characteristics and Firm R&D Spending." *Management Science* 48(6): 782-801.
8. Galasso, Alberto, and Timothy S. Simcoe. 2011. "CEO Overconfidence and Innovation." *Management Science* 57(8): 1469-1484.
9. Tian, Xuan, and Tracy Yue Wang. 2014. "Tolerance for Failure and Corporate Innovation." *The Review of Financial Studies* 27(1): 211-255.
10. Balsmeier, Benjamin, Lee Fleming, and Gustavo Manso. 2017. "Independent Boards and Innovation." *Journal of Financial Economics* 123(3): 536-557.
11. Islam, Emdad, and Jason Zein. 2020. "Inventor CEOs." *Journal of Financial Economics* 135(2): 505-527.
12. Schoar, Antoinette. 2002. "Effects of Corporate Diversification on Productivity." *The Journal of Finance* 57(6): 2379-2403.
13. Aghion, Philippe, John Van Reenen, and Luigi Zingales. 2013. "Innovation and Institutional Ownership." *American Economic Review* 103(1): 277-304.
14. Atanassov, Julian. "Do Hostile Takeovers Stifle Innovation? Evidence from Anti-takeover Legislation and Corporate Patenting." *The Journal of Finance* 68(3): 1097-1131.
15. Chemmanur, Thomas J., Elena Loutskina, and Xuan Tian. 2014. "Corporate Venture Capital, Value Creation, and Innovation." *The Review of Financial Studies* 27(8): 2434-2473.
16. Ma, Song. 2020. "The Life Cycle of Corporate Venture Capital." *The Review of Financial Studies* 33(1): 358-394.
17. Cunningham, Colleen, Florian Ederer, and Song Ma. 2021. "Killer Acquisitions." *Journal of Political Economy* 129(3): 649-702.

Module 10

1. Bloom, Nicholas, John Van Reenen, and Heidi Williams. 2019. "A Toolkit of Policies to Promote Innovation." *Journal of Economic Perspectives* 33(3): 163-84.
2. Bloom, Nick, Rachel Griffith, and John Van Reenen. 2002. "Do R&D Tax Credits Work? Evidence from a Panel of Countries 1979–1997." *Journal of Public Economics* 85(1): 1-31.
3. Howell, Sabrina T. 2017. "Financing Innovation: Evidence from R&D Grants." *American Economic Review* 107(4): 1136-64.
4. Edler, Jakob, and Jan Fagerberg. 2017. "Innovation Policy: what, why, and how." *Oxford Review of Economic Policy* 33, no. 1 (2017): 2-23.
5. Wei, Shang-Jin, Zhuan Xie, and Xiaobo Zhang. 2017. "From "Made in China" to "Innovated in China": Necessity, Prospect, and Challenges." *Journal of Economic Perspectives* 31(1): 49-70.
6. Rao, Nirupama. 2016. "Do Tax Credits Stimulate R&D Spending? The Effect of the R&D Tax Credit in Its First Decade." *Journal of Public Economics* 140: 1-12.
7. Chen, Zhao, Zhikuo Liu, Juan Carlos Suárez Serrato, and Daniel Yi Xu. 2021. "Notching R&D Investment with Corporate Income Tax Cuts in China." *American Economic Review* 111(7): 2065-2100.
8. Howell, Sabrina T., Jason Rathje, John Van Reenen, and Jun Wong. 2021. "Opening up Military Innovation: Causal Effects of 'Bottom-up' Reforms to US Defense Research." *NBER Working Paper*.
9. Krieger, Joshua L. 2021. "Trials and Terminations: Learning from Competitors' R&D Failures." *Management Science*.
10. Kerr, William R., and William F. Lincoln. 2010. "The Supply Side of Innovation: H-1B Visa Reforms and U.S. Ethnic Invention." *Journal of Labor Economics* 28(3): 473–508.
11. Borjas, George J., and Kirk B. Doran. 2012. "The Collapse of the Soviet Union and the Productivity of American Mathematicians." *Quarterly Journal of Economics* 127(3): 1143–203.

Note: papers with titles in bold font will be discussed during lectures.