

## NBER INNOVATION BOOT CAMP 2022

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Economy  
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### Lecture Structure (3 one-hour lectures; July 21<sup>st</sup> 9-12)

*Lecture 1: Economic Framework(s) for thinking about Innovation Policies*

*Lecture 2: Evidence on “Demand-side” Innovation policies*

*Lecture 3: Evidence on “Supply-side” Innovation policies*

### A. KEY READINGS

Akcigit, Ufuk and Stefanie Stantcheva (2022) “Taxation and Innovation: What do we know?” in *Innovation and Public Policy* (Ben Jones and Austan Goolsbee, editors) Chicago: University of Chicago Press

Bloom Nicholas, John Van Reenen and Mark Schankerman (2013) “Technology Spillovers and Product Market rivalry”, *Econometrica* 81 (4) 1347–1393

Bloom, Nicholas, John Van Reenen and Heidi Williams (2019), “A Toolkit of Policies to promote Innovation” *Journal of Economic Perspectives* 33(3) 163–184

Dechezlepretre, Antoine Elias Einio, Ralf Martin, Kieu-Trang Nguyen and John Van Reenen (2019) “Do Fiscal Incentives increase innovation? An RD Design for R&D” CEP [Discussion Paper](#) 1413

Kerr, Sari and William Kerr (2022) “Immigration Policy Levers for US Innovation and Start-Ups” in *Innovation and Public Policy* (Ben Jones and Austan Goolsbee, editors), Chicago: University of Chicago Press

**Note:** The recent volume *Innovation and Public Policy* (edited by Ben Jones and Austan Goolsbee) Chicago: University of Chicago Press <https://press.uchicago.edu/ucp/books/book/chicago/I/bo138500594.html> has a lot of other good survey chapters on various aspects of innovation policy

## ***B. GENERAL ISSUES***

### **Overview/General**

Aghion, P. and Howitt, P. (1992) “A Model of Growth through Creative Destruction.” *Econometrica*, 60(2) 323–351.

Arrow, Kenneth (1962) “Economic Welfare and Allocation of Resources for Invention.” in *The Rate and Direction of Inventive Activity*, Princeton, NJ: Princeton University Press.

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### **Why Subsidize Innovation?**

Bell, Alex, Xavier Jaravel and Neviana Petkova (2018) “Team-Specific Capital and Innovation” *American Economic Review*

Bloom Nicholas, John Van Reenen and Mark Schankerman (2013) “Technology Spillovers and Product Market rivalry”, *Econometrica* 81 (4) 1347–1393

Jaffe, Adam (1986) “Technological Opportunity and Spillovers of R&D: Evidence from Firms’ Patents, Profits and Market Value.” *American Economic Review* 76: 984–1001.

Jaffe, Adam, Manuel Trajtenberg, and Rebecca Henderson (1993) “Geographic Localization of Knowledge Spillovers as Evidenced by Patent Citations.” *Quarterly Journal of Economics* 108 (3): 577–98.

Jones, Benjamin, and Lawrence Summers (2022) “A Calculation of the Social Returns to Innovation.” Chapter 1 in *Innovation and Public Policy* (edited by Ben Jones and Austan Goolsbee) Chicago: University of Chicago Press

Lucking, Brian, Nicholas Bloom, and John Van Reenen (2020) “Have R&D Spillovers Declined in the 21st Century?” *Fiscal Studies* 40 (4): 561–90.

### **Data and Methodological Issues in empirical studies of innovation policy**

Acs, Zoltan, David Audretsch, and Marianne Feldman. 1992. “Real Effects of Academic Research: Comment.” *American Economic Review* 82: 363–67.

Blundell, Richard, Rachel Griffith, and John Van Reenen (1995) “Dynamic Count Data Models of Technical Change.” *Economic Journal*, 105, 333–44.

Blundell, Richard, Rachel Griffith, and Frank Windmeijer. “Individual Effects and Dynamics in Count Data Models.” *Journal of Econometrics* 108, no. 1 (2002): 113–31. [https://doi.org/10.1016/S0304-4076\(01\)00108-7](https://doi.org/10.1016/S0304-4076(01)00108-7).

Cohen, W. and Levin, R. (1989) Empirical Studies of Innovation and Market Structure. In: Schmalensee, R.C. and Willig, R., Eds., *Handbook of Industrial Organization*, Elsevier, Amsterdam, 1059-1107.

Manski, Charles. 1993. “Identification of Endogenous Social Effects: The Reflection Problem” *Review of Economic Studies*, 60, 531-542

### **“Macro” Approaches**

Acemoglu, Daron, Ufuk Akcigit, Harun Alp, Nicholas Bloom and William Kerr (2018) “Innovation, Reallocation and Growth” *American Economic Review*, 108(11): 3450-3491

Aghion, Philippe, Antoine Bergeaud and John Van Reenen (2021) “The Impact of Regulation on Innovation” [Vox video post CEP NBER](#)

Akcigit, Ufuk, Doug Hanley and Stefanie Stantcheva (2022) “Optimal Taxation and R&D Policies” *Econometrica*, 90(2) 645–684

Atkeson, Andrew, and Ariel Burstein (2019) “Aggregate Implications of Innovation Policy.” *Journal of Political Economy*, 127: 6, 2625-2682.

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### C. “DEMAND SIDE” INNOVATION POLICIES

#### **Taxation**

##### **Innovation specific taxation**

Appelt, S., Galindo-Rueda, F. and González Cabral, A. (2019) “Measuring R&D tax support” Paris: OECD

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Bloom, Nicholas, 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.

Chang, A. (2018) “Tax Policy Endogeneity: Evidence from R&D Tax Credits.” *Economics of Innovation and New Technology*, 27(8) 809-33

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

(\*) Dechezlepretre, Antoine Elias Einio, Ralf Martin, Kieu-Trang Nguyen and John Van Reenen (2022) “Do Fiscal Incentives increase innovation? An RD Design for R&D” CEP [Discussion Paper](#) 1413, forthcoming *American Economic Journal: Policy*

Gaessler, Fabian, Bronwyn H. Hall, and Dietmar Harhoff. (2021) "Should There Be Lower Taxes on Patent Income?" *Research Policy* 50

Guenther, Gary (2017) “Patent Boxes: A Primer” Congressional Research Service <https://sgp.fas.org/crs/misc/R44829.pdf>

Guceri, I. and Liu, L. (2017) “Effectiveness of Fiscal Incentives for R&D: Quasi-Experimental Evidence.” *American Economic Journal: Policy*, 11(1) 266-91.

Hall, Bronwyn H. (1993) “R&D Tax Policy during the Eighties: Success or Failure?” *Tax Policy and the Economy* 7, 1-35

(\*) Hall, Bronwyn (2022) “Tax Policy for Innovation” Chapter 5 in Jones, Ben and Austan Goolsbee (2022) *Innovation and Public Policy* Chicago: University of Chicago Press <https://press.uchicago.edu/ucp/books/book/chicago/I/bo138500594.html>

Rao, Nirumpa (2016) “Do Tax Credits Stimulate R&D Spending? Revisiting the Effect of the R&D Tax Credit in Its First Decade.” *Journal of Public Economics*, 140, 1-12.

Wilson, Daniel. 2009. "Beggars thy Neighbor? The In-State, Out-of-State, and Aggregate Effects of R&D Tax Credits." *The Review of Economics and Statistics* 91 (2): 431-436.

## **General taxation**

(\*) Akcigit, Ufuk, John Grigsby, Tom Nicholas and Stefanie Stantcheva (2022) “Taxation and Innovation in the 20th Century” *Quarterly Journal of Economics* 137(1), 329–385

Akcigit, Ufuk and Stefanie Stantcheva (2022) “Taxation and Innovation: What do we know? in *Innovation and Public Policy* (Ben Jones and Austan Goolsbee, editors) Chicago: University of Chicago Press

Akcigit, Ufuk, Salome Baslandze and Stantcheva, Stefanie (2016) “Taxation and the International Mobility of Inventors” *American Economic Review* 106 (10): 2930–2981

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Moretti, E. and Wilson, D. (2017) “The Effect of State Taxes on the Geographical Location of Top Earners: Evidence from Star Scientists.” *American Economic Review*, 107(7) 1858-1903.

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## **Direct R&D Subsidies**

### **Grants to Private firms/Procurement**

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Political Connections, Innovation and Firm Dynamics” forthcoming, *Econometrica*

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Bronzini, R. and Iachini E. (2014) “Are Incentives for R&D Effective? Evidence from a Regression Discontinuity Approach.” *American Economic Journal: Economic Policy*, 6(4) 100-134.

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Criscuolo, C., Martin, R., Overman, H., Van Reenen, J. (2019) “Some Causal Effects of an Industrial Policy.” *American Economic Review*, 109(1) 48-85.

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Moretti, Enrico, Claudia Steinwender and John Van Reenen (2022) “The Intellectual Spoils of War: Defense R&D, Productivity and Spillovers” NBER Working Paper No. 26483 <http://cep.lse.ac.uk/pubs/download/dp1662.pdf> [Vox](#)

Pless, Jacquelyn “Are “Complementary Policies” Substitutes? Evidence from R&D Subsidies in the UK” (2022) MIT mimeo  
<https://mitsloan.mit.edu/shared/ods/documents?PublicationDocumentID=8021>

Takalo, T., Tanayama, T. and Toivanen, O. (2013) “Estimating the Benefits of Targeted R&D Subsidies.” *Review of Economics and Statistics*, 95, 255-272

Wallsten, S. (2000) “The Effects of Government-Industry R&D Programs on Private R&D: The Case of the Small Business Innovation Research program.” *RAND Journal of Economics*, 31, 82-100.

## Grants to Academics

Azoulay, Pierre and Danielle Li (2022) “Scientific Grant Funding” 117-150 in *Innovation and Public Policy* (Ben Jones and Austan Goolsbee, editors), Chicago: University of Chicago Press

Azoulay, Pierre, Joshua S. Graff Zivin, Danielle Li, and Bhaven N. Sampat (2019) “Public R&D Investments and Private Sector Patenting: Evidence from NIH Funding Rules.” *Review of Economic Studies* 86 (1): 117–52.

Jacob, Brian, and Lars Lefgren (2011) “The Impact of Research Grant Funding on Scientific Productivity.” *Journal of Public Economics* 95 (9–10): 1168–77.

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#### **D. “SUPPLY SIDE” INNOVATION POLICIES**

##### **Immigration**

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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): 1143–1203.

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(\*) Kerr, Sari and William Kerr (2022) “Immigration Policy Levers for US Innovation and Start-Ups” in *Innovation and Public Policy* (Ben Jones and Austan Goolsbee, editors), Chicago: University of Chicago Press

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### **University incentives**

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Hvide, Hans K., and Benjamin F. Jones. 2018. “University Innovation and Professor’s Privilege.” *American Economic Review* 108 (7): 1860–98.

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### **STEM supply**

Bianchi, Nicola, and Michela Giorcelli. 2020. “Scientific Education and Innovation: From Technical Diplomas to University STEM Degrees.” *Journal of the European Economic Association*, 18(5), 2508-2646

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### **Exposure Policies**

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Bell, Alex, Raj Chetty, Xavier Jaravel, Neviana Petkova and John Van Reenen (2019), “Who Becomes an Inventor in America? The Importance of Exposure to Innovation” [Quarterly Journal of Economics](#) 134(2) 647–713



- Breda, Thomas, Julien Grenet, Marion Monnet and Clémentine Van Effenterre. 2021. “Do Female Role Models Reduce the Gender Gap in Science? Evidence from French High Schools” CNRS mimeo
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- Cohodes, Sarah. 2020. “The Long-Run Impacts of Specialized Programming for High-Achieving Students.” *American Economic Journal: Economic Policy* 12 (1): 127–66.
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## ***E. OTHER POLICIES***

### **Product Market Competition**

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- Aghion, Philippe, Christopher Harris, Peter Howitt and John Vickers (2001) “Competition, Imitation and Growth with Step-by-Step Innovation.” *Review of Economic Studies*, 68, 467–92.
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## **Trade**

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## **Regulation**

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### **Directed Technical Change/Green Innovation**

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### **Multinationals**

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### **Labor Unions**

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### **Finance**

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## **F. DIFFUSION**

## Diffusion

### Technology

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### Management

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- Bloom, Nicholas, Ben Eifert, Abrijit Mahajan, David McKenzie and John Roberts (2013) “Does management matter? Evidence from India” *Quarterly Journal of Economics* 128 (1): 1-51. <http://www.stanford.edu/~nbloom/DMM.pdf>
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- Bloom, Nick, Raffaella Sadun and John Van Reenen (2012) “Americans Do I.T. Better: US multinationals and the productivity miracle” *American Economic Review* 102 (1), 167-201 [http://cep.lse.ac.uk/textonly/new/staff/vanreenen/pdf/aer102\(1\).pdf](http://cep.lse.ac.uk/textonly/new/staff/vanreenen/pdf/aer102(1).pdf)

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