

# Econ 33530: Firm Dynamics and Economic Growth

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University of Chicago

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**Office:** SHFE #403

**Office Hours:** Tu 3:30 PM - 5:00 PM.

**Teaching Assistant:** Furkan Kilic, furkankilic@uchicago.edu. (Furkan won't have office hours at regular times. Please email him for appointment.)

**Faculty Assistant:** Robin Dolezal, redolezal@uchicago.edu.

**Lecture Time/Location:** Tue/Th 2:00 PM - 3:20 PM, SHFE 103.

**TA Discussion Time/Location:** Wed 4:30 PM - 5:20 PM, SHFE 141.

**Description:** This class focuses on the theory and empirics of economic growth. The class will follow a micro-to-macro approach and hence special emphasis will be given to firms and inventors to uncover the determinants of aggregate productivity growth. In addition to some classic papers, the class will mainly focus on recent research. Students will be encouraged to discuss the frontier topics in class and produce new and exciting research ideas.

**Requirements:** There are three requirements for this class (each has 1/3 weight):

1. You will be given 3 problems sets during the semester.
2. You will have an end-of-term written assignment. here you have two options (one of the two):  
A) Research proposal, B) Referee report.
3. In class participation: I expect you to participate in every lecture. In addition, every Tuesday lecture will start with a 10-minute student presentation. Every week, a randomly selected student will present the main points of the paper that was covered in the previous lecture. Everybody has to prepare some slides and send them to Furkan by 1:00 PM every Tuesday. Then I will randomly select a student in the beginning of each Tuesday lecture. Every student has to be present in the classroom at that time.

**Audit requirement:** Auditing students have to satisfy #1 and #3, i.e., they have to do the problems sets and prepare 10-minute slides every week.

# Reading List

## 1 Stylized Facts of Economic Growth and Development

- \*Akcigit, Ufuk "Economic Growth: The Past, the Present, and the Future", Commemorative Essay in "The Past, Present, and Future of Economics: A Celebration of the 125 Year Anniversary of the JPE and Chicago Economics," Edited by John List and Harald Uhlig. *Journal of Political Economy*, 2017, 125(6): 1736-47.
- \*Akcigit, Ufuk, John Grigsby, and Tom Nicholas "The Rise of American Ingenuity: Innovation and Inventors of the Golden Age", NBER Working Paper #23047.
- \*Akcigit, Ufuk, John Grigsby, and Tom Nicholas "Immigration and the Rise of American Ingenuity", *American Economic Review, Papers and Proceedings*, 107(5): 327-331, 2017.
- Acemoglu, Daron. *Introduction to Modern Economic Growth*, Chapter 1, Princeton University Press, Princeton, NJ, 2008.
- Helpman, Elhanan. *Mystery of Economic Growth*, Harvard University Press, Cambridge MA, 2005.
- Quah, Danny. "Empirics for Growth and Distribution: Stratification, Polarization and Convergence Clubs," *Journal of Economic Growth*, 1997.
- Jones, Charles. "On The Evolution of the World Income Distribution," *Journal of Economic Perspectives*, 1997.
- Acemoglu, Daron, Simon Johnson and James Robinson. "Reversal of Fortune: Geography and Institutions in the Making of the Modern World Income Distribution," *Quarterly Journal of Economics*, 2002.

## 2 Endogenous Growth with Expanding Input Varieties

- \*Acemoglu, Daron. *Introduction to Modern Economic Growth*, Chapters 13.
- Romer, Paul. "Growth Based on Increasing Returns due to Specialization," *American Economic Review Papers and Proceedings*, 77, 1987
- Romer, Paul M. "Endogenous Technological Change," *Journal of Political Economy* 98, 1990.
- Jones, Charles I. "R&D-based Models of Economic Growth," *Journal of Political Economy*, 103, 1995.

## 3 Schumpeterian Models, Quality Ladders and Creative Destruction

- \*Aghion, Philippe, Ufuk Akcigit, and Peter Howitt (2014) "What Do We Learn from Schumpeterian Growth Theory?" in *Handbook of Economic Growth*, ed. by P. Aghion and S. N. Durlauf, Vol.2: 515-563.

- Acemoglu, Daron. *Introduction to Modern Economic Growth*, Chapters 14.
- Aghion, Philippe and Peter Howitt. “A Model of Growth Through Creative Destruction,” *Econometrica*, 60, 1992.
- Grossman, Gene and Elhanan Helpman. “Quality Ladders in the Theory of Growth,” *Review of Economic Studies*, 58, 1991.

## 4 Models with both Horizontal and Vertical Innovations and Firm Dynamics

- \*Akçigit, Ufuk and William Kerr. “Growth through Heterogeneous Innovation,” *Journal of Political Economy*, 2018, 126(4): 1374-1443.
- \*Klette, Tor Jacob and Samuel Kortum. “Innovating Firms and Aggregate Innovation,” *Journal of Political Economy*, 112, 2004.
- Akçigit, Ufuk, Douglas Hanley and Nicolas Serrano-Velarde. “Back to Basics: Basic Research Spillovers, Innovation Policy, and Growth” *Review of Economic Studies*, 2021, 88(1): 1–43.

## 5 Factor Misallocation & Reallocation

- \*Acemoglu, Daron, Ufuk Akçigit, Harun Alp, Nicholas Bloom and William Kerr (2017) “Innovation, Reallocation and Growth,” *American Economic Review*, 2018, 108(11): 3450-3491.
- \*Akçigit, Ufuk, Salome Baslandze, and Francesca Lotti (2022) “Connecting to Power: Political Connections, Innovation, and Firm Dynamics,” *Econometrica*, forthcoming.
- Lentz, Rasmus, and Dale Mortensen (2008) “An Empirical Model of Growth through Product Innovation,” *Econometrica* 76, 1317-1373.
- Hsieh, Chang-Tai, and Peter Klenow, “Misallocation and Manufacturing TFP in China and India,” *Quarterly Journal of Economics* 124, 1403-1448
- Foster, Lucia, John Haltiwanger, and C. J. Krizan (2006): “Market Selection, Reallocation, and Restructuring in the US Retail Trade Sector in the 1990s,” *Review of Economics and Statistics*, 88(4), 748-758.
- Hopenhayn, Hugo, and Richard Rogerson (1993) “Job Turnover and Policy Evaluation: A General Equilibrium Analysis,” *Journal of Political Economy*, 101, 915-938.
- Restuccia, Diego, and Richard Rogerson (2008) “Policy Distortions and Aggregate Productivity with Heterogeneous Plants,” *Review of Economic Dynamics*, 11:707-720.
- Guner, Nezih, Gustavo Ventura, and Yi Xu (2008) “Macroeconomic Implications of Size-Dependent Policies,” *Review of Economic Dynamics*, 11: 721-744.

## 6 Firm Dynamics in Developing Countries

- \*Akcigit, Ufuk, Harun Alp and Michael Peters (2021) “Lack of Selection and Limits to Delegation: Firm Dynamics in Developing Countries” *American Economic Review*, 111(1): 231–275.
- Bloom, Nicholas, Benn Eifert, David McKenzie, Aprajit Mahajan, and John Roberts (2013) “Does Management Matter: Evidence from India,” *Quarterly Journal of Economics*, 128(1), 1-51.
- Bloom, Nicholas, Raffaella Sadun, and John Van Reenen (2012) “The Organization of Firms Across Countries,” *Quarterly Journal of Economics*, 127(4), 1663-1705.
- Hsieh, Chang-Tai and Ben Olken (2014): “The Missing "Missing Middle",” *Journal of Economic Perspectives*, 28(3): 89-108.
- Buera, F., J. Kaboski, and Y. Shin (2011): “Finance and Development: A Tale of Two Sectors,” *American Economic Review*, 101(5), 1964-2002.
- Cole, H. L., J. Greenwood, and J. M. Sanchez (2016): “Why Doesn’t Technology Flow from Rich to Poor Countries?” *Econometrica*, v. 84, n. 4: 1477-1521.

## 7 Step-by-step Innovation Models with Strategic Interactions

- \*Acemoglu, Daron and Ufuk Akcigit. “Intellectual Property Rights Policy, Competition and Innovation,” *Journal of the European Economic Association*, 10(1): 1-42.
- \*Aghion, Philippe, Nick Bloom, Richard Blundell, Rachel Griffith and Peter Howitt. “Competition and Innovation: An Inverted-U Relationship,” *Quarterly Journal of Economics*, 120, 2005.
- \*Aghion, Philippe, Christopher Harris, Peter Howitt and John Vickers. “Competition, Imitation, and Growth with Step-by-Step Innovation,” *Review of Economic Studies*, 68, 2001.
- Acemoglu, Daron. *Introduction to Modern Economic Growth*, Chapters 14.

## 8 Business Dynamism

- \*Akcigit, Ufuk and Sina T. Ates (2021). “Ten Facts on Declining Business Dynamism and Lessons from Endogenous Growth Theory ” *American Economic Journal: Macroeconomics*, 13(1): 257–298.
- \*Akcigit, Ufuk and Sina T. Ates (2022). “What happened to U.S. Business Dynamism?”, *Journal of Political Economy*, forthcoming.
- Autor, David, David Dorn, Lawrence F. Katz, Christina Patterson, and John Van Reenen. “Concentrating on the Fall of the Labor Share”, *American Economic Review*, 2017, 107 (5), 180-85.
- Autor, David, David Dorn, Lawrence F. Katz, Christina Patterson, and John Van Reenen (2020). “The Fall of the Labor Share and the Rise of Superstar Firms”, *Quarterly Journal of Economics*, 135(2): 645–709.

- Criuscolo, Chiara, Peter N. Gal, and Carlo Menon. “The Dynamics of Employment Growth”, 2014. OECD Science, Technology and Industry Policy Papers No. 14.
- De Loecker, Jan and Jan Eeckhout (2020). “The Rise of Market Power and The Macroeconomic Implications”, *Quarterly Journal of Economics*, 135(2): 561–644.
- Karabarbounis, Loukas and Brent Neiman (2013). “The Global Decline of the Labor Share” *Quarterly Journal of Economics*, 129 (1): 61-103.
- Andrews, Dan, Chiara Criscuolo, and Peter N. Gal. “The Best versus the Rest: The Global Productivity Slowdown, Divergence across Firms and the Role of Public Policy ”, 2016. OECD Productivity Working Papers 5/2016.
- Decker, Ryan A., John C. Haltiwanger, Ron S. Jarmin, and Javier Miranda. “Declining Business Dynamism: What We Know and the Way Forward ” *American Economic Review: Papers & Proceedings* , 2016, 106 (5), 203-07.

## 9 Models with Search Frictions

- \*Akcigit, Ufuk, Murat Alp Celik and Jeremy Greenwood. “Buy, Keep or Sell: Economic Growth and the Market for Ideas” *Econometrica*, 84(3): 943-984, 2016.
- \*Akcigit, Ufuk, Santiago Caicedo, Ernest Miguelez, Stefanie Stantcheva, and Valerio Sterzi. “Dancing with the Stars: Innovation and Human Capital Accumulation through Interactions”, 2018, NBER Working Paper 24466.
- Lucas, Robert E., and Benjamin Moll (2014): “Knowledge Growth and the Allocation of Time,” *Journal of Political Economy*, 122(1).
- Perla, Jesse, and Chris Tonetti (2014): “Equilibrium Imitation and Growth,” *Journal of Political Economy*, 122(1), 52-76.
- Chiu, J., C. Meh, and R. Wright (2017): “Innovation and Growth with Financial, and other, Frictions,” *International Economic Review*, 58: 95-125.

## 10 Inventors

- \*Akcigit, Ufuk, Jeremy Pearce and Marta Prato (2020). “Tapping into Talent: Coupling Education and Innovation Policies for Economic Growth ”, NBER WP #27862.
- Akcigit, Ufuk, John Grigsby, and Tom Nicholas "The Rise of American Ingenuity: Innovation and Inventors of the Golden Age", NBER Working Paper #23047.
- Akcigit, Ufuk, John Grigsby, and Tom Nicholas "Immigration and the Rise of American Ingenuity", *American Economic Review, Papers and Proceedings*, 107(5): 327-331, 2017.
- Aghion, Philippe, Ufuk Akcigit, Ari Hyytinen and Otto Toivanen . “On the Returns to Invention within Firms: Evidence from Finland ”, *American Economic Association Papers and Proceedings*, 2018, 108: 208-212.

- Bell, Alex, Raj Chetty, Xavier Jaravel, Neviana Petkova, and John Van Reenen. “Who Becomes an Inventor in America? The Importance of Exposure to Innovation. ”, *Quarterly Journal of Economics*, Vol. 134, No. 2 (2019): 647-713.
- Celik, Murat Alp. “Does the Cream Always Rise to the Top? The Misallocation of Talent and Innovation ”, 2015.

## 11 Environment and Directed Technical Change

- \*Acemoglu, Daron, Ufuk Akcigit, Douglas Hanley and William Kerr. “Transition to Clean Technology,” *Journal of Political Economy*, 124(1): 52-104, 2016.
- Acemoglu, Daron, Philippe Aghion, Leonardo Bursztyn, and David Hemous (2012) “The Environment and Directed Technical Change,” *American Economic Review*, 102:131-166.
- Aghion, Philippe, Antoin Dechezlepretre, David Hemous, Ralf Martin, and John Van Reenen “Carbon Taxes, Path Dependency and Directed Technical Change: Evidence from the Auto Industry,” *Journal of Political Economy*, 2016 124:1, 1-51.

## 12 International Trade and Innovation

- \*Akcigit, Ufuk, Sina Ates and Giammario Impullitti. “Innovation and Trade Policy in a Globalized World,” 2018, NBER Working Paper 24543.
- \*Akcigit, Ufuk and Marc Melitz. “International Trade and Innovation,” 2022, *Handbook of International Economics*, edited by Gita Gopinath, Elhanan Helpman, and Kenneth Rogoff, 2022, Vol 5:377-404, North-Holland.
- Bloom, Nick, Mirko Draca and John Van Reenen. “Trade Induced Technical Change: The Impact of Chinese Imports on Innovation, Diffusion and Productivity,” *Review of Economic Studies*, 2015.
- Autor, David, David Dorn, Gordon H. Hanson, Gary Pisano, and Pian Shu. “Foreign Competition and Domestic Innovation: Evidence from U.S. Patents,” *American Economic Review: Insights*, 2(3): 357-74.

## 13 Inequality, Taxation and Innovation

- \*Akcigit, Ufuk, Salome Baslandze and Stefanie Stantcheva. (2016) “Taxation and the International Mobility of Inventors,” *American Economic Review*, 106(10): 2930-81.
- \*Akcigit, Ufuk, John Grigsby, Tom Nicholas, and Stefanie Stantcheva “Taxation and Innovation in the 20th Century”. *Quarterly Journal of Economics*, 2022, 137(1): 329–385.
- \*Akcigit, Ufuk, and Stefanie Stantcheva. "Taxation and Innovation: What Do We Know?" (2022). *NBER Innovation and Public Policy*, edited by Austan Goolsbee and Ben Jones
- \*Aghion, Philippe, Ufuk Akcigit, Antonin Bergeaud, Richard Blundell, and David Hemous (2019) “Innovation and Top Income Inequality,” *Review of Economic Studies*, 86(1): 1-45.

- \*Akcigit, Ufuk, Douglas Hanley, and Stefanie Stantcheva “Optimal Taxation and R&D Policies” (2022). *Econometrica*, 90(2): 645-684.
- Jones, Chad, and Kim, Jihee (2018) “A Schumpeterian Model of Top Income Inequality,” *Journal of Political Economy*, 126(5): 1785-1826.

## 14 Networks

- \*Acemoglu, Daron, Ufuk Akcigit, and William Kerr (2016) “Networks and the Macroeconomy: An Empirical Exploration,” *NBER Macro Annual 2015*, ed. by Martin Eichenbaum and Jonathan Parker, Vol 30: 276-335.
- Long, John and Charles Plosser (1983) “Real Business Cycles,” *Journal of Political Economy*, 91(1): 39-69.
- Acemoglu, Daron, Ufuk Akcigit, and William Kerr (2016) “Innovation Network”, *Proceedings of the National Academy of Sciences*, 113(41): 11483-11488.
- Acemoglu, Daron, Vasco Carvalho, Asuman Ozdaglar, and Alireza Tahbaz-Salehi (2012), “The Network Origins of Aggregate Fluctuations,” *Econometrica*, 80(5): 1977-2016
- Jones, Chad (2013) “Misallocation, Economic Growth, and Input-Output Economics,” in *Advances in Economics and Econometrics*, Tenth World Congress, Volume II , Cambridge University Press.
- Atalay, Engin, Ali Hortacsu, and Chad Syverson (2014), “Vertical Integration and Input Flows,” *American Economic Review*, 104(4): 1120-1148.