Seminar on

Technology, Skills, and Inequality

Summer Semester 2019

Prof. Dr. Peter Funk
(TA: Jonas Loebbing)

This seminar will introduce you to some of the recent theoretical and empirical literature on technological change and inequality. It will address issues surrounding the ongoing debate about the merits and perils of technological progress, focusing in particular on the relation between technology, capital (machines, computers and robots), and different types and levels of (human) skills.

The seminar can be attended in combination with any of the other field courses. In particular, it constitutes a natural supplement to the lecture "Growth, Structural Change, and Inequality" which studies similar issues but does not teach you to read and present original scientific research papers. A natural chronology could then be to first attend the lecture in the Summer Term (2nd or 4th semester) and to attend the seminar of the same semester at the end of the corresponding semester break.

There will be two phases to allocate topics to students. Students who want to start working on their seminar paper early should submit topic preferences for the 1st allocation phase. In addition, papers assigned in the 1st phase might not be available in the 2nd phase.

Time Schedule

- **29 Jan**: A list with papers is made available on KLIPS.
- **12 Feb**: Deadline for the seminar registration via KLIPS.
- **22 Apr**: Deadline 1st allocation phase. Send an email containing an ordered list of your seven most preferred papers to loebbing@wiso.uni-koeln.de. The assignments for the 1st allocation phase are announced within four days.
- **21 Jun**: Deadline 2nd allocation phase. For those who did not participate in the 1st allocation phase: send an email containing an ordered list of your seven most preferred papers to loebbing@wiso.uni-koeln.de. The assignments for the 2nd allocation phase are announced within four days.
- **26 Jun**: Introductory meeting in lecture hall XVIIb (Main-Building) from 3:30 pm to 4:00 pm.
- **1 Jul**: Deadline for official exam registration and deregistration via KLIPS.
- **28 Aug**: Deadline for submitting the seminar paper and the comments (see "Requirements") to loebbing@wiso.uni-koeln.de.
- **2-4 Sep**: Student presentations and discussions in seminar room 710 in the WiSo-Building (room subject to change!) from 09:00-18:00 (depending on the number of participants). We will have lunch breaks around 1 pm.

Requirements

Each student is required to write a **seminar paper** of 6-8 pages and hold a **presentation** of 30 minutes about the assigned article (no more than 10 slides). In addition, each student prepares three **comments** for each of the articles printed in bold (see the list of papers below).

In their **papers**, students should discuss the primary results of the main article (approximately 4 pages). For students working on empirical articles, this discussion should include the research question, the data used, the methods used, and the primary conclusions. For students working on theoretical articles, the discussion should include the research question, the answer given, and the most important causal mechanisms leading to this answer. The remainder of the paper (2-4 pages) should discuss one or two other articles in the literature and how they either inform or were informed by the main article. These additional articles can be chosen by looking at the references in the main article or by finding related articles by other means (e.g. Google scholar). The goal of the term paper is to make you read the main article closely so that you understand its argument and how that argument is structured, and then to follow that up with seeing the main article's connections to other parts of the literature. The hope is that these additional readings will also allow the student to contribute uniquely to the discussions of other students' presentations.

In their **presentations**, students should recount the primary arguments and results from their main article and also offer their assessment of the article. By "assessment" is meant not "good" or "bad" but rather how convincing the argument is, whether there are additional analyses that might be helpful, etc. Subsequent to each presentation the seminar participants will discuss the presented paper.

Students should read the articles from the reading list printed in bold to get a better overview of the literature and to enrich the discussion in the seminar. For each of the articles in bold, students should formulate three **comments**, questions, points of criticism, suggestions for extensions, etc. and send them to loebbing@wiso.uni-koeln.de together with the seminar paper. The discussion is planned for approximately 15-30 minutes.

Grading

Students will be graded as follows:

- 40% Seminar paper (Hausarbeit)
- 60% Own presentation (Referat)
- Contribution to general discussions (including the submitted comments) provides the opportunity for grade improvements (Bonus)

List of Articles

Note: you can access all articles via the provided links from within the university network or via vpn.

Block 1: Changes in Income Inequality

1. **Piketty, Thomas, and Emmanuel Saez. 2003. Income Inequality in the United States, 1913-1998. *The Quarterly Journal of Economics* 118 (1): 1–39.**
2. Piketty, Thomas. 2003. Income Inequality in France, 1901–1998. *Journal of Political Economy* 111 (5): 1004–42.

Block 2: Changes in Wage Inequality

3. **Goldin, Claudia, and Lawrence F. Katz. 2007. Long-Run Changes in the Wage Structure: Narrowing, Widening, Polarizing. *Brookings Papers on Economic Activity* 2007 (2): 135–65.**
4. Dustmann, Christian, Johannes Ludsteck, and Uta Schönberg. 2009. Revisiting the German Wage Structure. *The Quarterly Journal of Economics* 124 (2): 843–81.
5. Goos, Maarten and Alan Manning. 2007. Lousy and Lovely Jobs: The Rising Polarization of Work in Britain. *The Review of Economics and Statistics* 89(1): 118-133.
6. Lemieux, Thomas. 2014. Occupations, fields of study and returns to education. *Canadian Journal of Economics*, 47 (4): 1047-1077.

Block 3: Skill-Biased Technical Change

7. **Goldin, Claudia, and Lawrence F. Katz. 2007. The Race between Education and Technology: The Evolution of U.S. Educational Wage Differentials, 1890 to 2005. NBER Working Paper 12984.**
8. Acemoglu, Daron. 1998. Why Do New Technologies Complement Skills? Directed Technical Change and Wage Inequality. *The Quarterly Journal of Economics* 113 (4): 1055-1089.
9. Berman, Eli, John Bound, and Stephen Machin. 1998. Implications of Skill-Biased Technological Change: International Evidence. *The Quarterly Journal of Economics* 113 (4): 1245–79.
10. Acemoglu, Daron. 2003. Patterns of Skill Premia. *Review of Economic Studies* 70 (2): 1999-230.
11. Card, David, and John E. DiNardo. 2002. Skill-Biased Technological Change and Rising Wage Inequality: Some Problems and Puzzles. *Journal of Labor Economics* 20 (4): 733–83.
12. Krusell, Per, Lee E. Ohanian, José-Víctor Ríos-Rull, and Giovanni L. Violante. 2000. Capital-Skill Complementarity and Inequality: A Macroeconomic Analysis. *Econometrica* 68 (5): 1029-1053.

Block 4: Technical Change and Skill Transferability

13. **Galor, Oded, and Omer Moav. 2000. Ability-Biased Technological Transition, Wage Inequality, and Economic Growth. *The Quarterly Journal of Economics* 115 (2): 469-497.**
14. Violante, Giovanni L. 2002. Technological Acceleration, Skill Transferability, and the Rise in Residual Inequality. *The Quarterly Journal of Economics* 117(1): 297-338.
15. Lemieux, Thomas. 2006. Increasing Residual Wage Inequality: Composition Effects, Noisy Data, or Rising Demand for Skill? *American Economic Review*, 96 (3): 461-498.

Block 5: Routine-Biased Technical Change

16. **Autor, David H., and David Dorn. 2013. The Growth of Low-Skill Service Jobs and the Polarization of the U.S. Labor Market. *American Economic Review*, 103 (5): 1553-1597.**

17. Autor, David H., Frank Levy, and Richard J. Murnane. 2003. The Skill Content of Recent Technological Change: An Empirical Exploration. *The Quarterly Journal of Economics* 118 (4): 1279–1333.

Block 6: Automation

18. **Acemoglu, Daron, and Pascual Restrepo. 2018. Robots and Jobs: Evidence from US Labor Markets. MIT Working Paper**
19. Dauth, Wolfgang, Sebastian Findeisen, Jens Suedekum, and Nicole Woessner. 2017. Adjusting to Robots: Worker-Level Evidence. Working Paper.
20. Graetz, Georg, and Guy Michaels. 2017. Robots at Work. Working Paper.
21. 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.
22. Sachs, Jeffrey D., Seth G. Benzell, and Guillermo LaGarda. 2015. Robots: Curse or Blessing? A Basic Framework. NBER Working Paper 21091.
23. Benzell, Seth G., Laurence J. Kotlikoff, Guillermo LaGarda, and Jeffrey D. Sachs. 2018. Robots Are Us: Some Economics of Human Replacement. Working Paper.

Block 7: International Trade and Offshoring

24. **Autor, David H., David Dorn, and Gordon H. Hanson. 2013. The China Syndrome: Local Labor Market Effects of Import Competition in the United States. *American Economic Review* 103(6): 2121-2168.**
25. Dauth, Wolfgang, Sebastian Findeisen, and Jens Suedekum. 2014. The Rise of the East and the Far East: German Labor Markets and Trade Integration. *Journal of the European Economic Association* 12(6): 1643-1675.
26. Autor, David H., David Dorn, and Gordon H. Hanson. 2015. Untangling Trade and Technology: Evidence from Local Labour Markets. *Economic Journal* 125(May): 621-646.
27. Fortin, Nicole M., Sergio Firpo, and Thomas Lemieux. 2013. Occupational Tasks and Changes in the Wage Structure. Working Paper.

Block 8: Superstar Theory

28. **Autor, David, David Dorn, Lawrence F. Katz, Christina Patterson, and John Van Reenen. 2017. The Fall of the Labor Share and the Rise of Superstar Firms. MIT Working Paper**.
29. Rosen, Sherwin. 1981. The Economics of Superstars. *American Economic Review* 71(5): 845-858.

Block 9: Redistribution and Technical Change

30. **Guerreiro, Joao, Sergio Rebelo, and Pedro Teles. 2018. Should Robots Be Taxed? NBER Working Paper No. 23806.**
31. Piketty, Thomas. 1999. Can fiscal redistribution undo skill-biased technical change? Evidence from the French experience. *European Economic Review* 43: 839-851.
32. Ales, Laurence, Musab Kurnaz, and Christopher Sleet. 2015. Technical Change, Wage Inequality, and Taxes. *American Economic Review* 105(10): 3061-3101.
33. Korinek, Anton, and Stiglitz, Joseph E. 2017. Artificial Intelligence and Its Implications for Income Distribution and Unemployment. NBER Working Paper No. 24174

Block 10: History and Speculation about the Future of Technical Change

34. **Mokyr, Joel, Chris Vickers, and Nicolas L. Ziebarth. 2015. The History of Technological Anxiety and the Future of Economic Growth: Is This Time Different? *Journal of Economic Perspectives*, 29 (3): 31-50.**
35. Frey, Carl B., and Michael Osborne. 2016. The Future of Employment: How Susceptible Are Jobs to Computerisation?. *Technological Forecasting and Social Change*, 14 (1): 254-280.
36. Autor, David H. 2015. Why Are There Still So Many Jobs? The History and Future of Workplace Automation. *Journal of Economic Perspectives*, 29 (3): 3-30.