FIRM LEVEL PRODUCTIVITY AND AGGREGATE IMPLICATIONS

This course provides a set of lectures in the area of empirical research using firm-level data. The course starts with an introduction to the estimation of firm-level productivity, including most recent methods to deal with endogeneity of inputs. We will also discuss most common firm level data sources as well as their advantages and disadvantages. The course will then focus on the implications of firm-level productivity heterogeneity for two main areas of research. First, we will leverage on the control function approach developed in the estimation of production functions to estimate firm-level markups and discuss the recent debate of concentration, market power and aggregate implications for investment, the labor share, superstar firms and productivity. Second, we will explore the link between international capital flows and productivity gains, both direct and indirect spillover effects, as well as, the recent increasing role for the efficient allocation of resources. We will complement this analysis with recent research focusing on firm innovation efforts and patent data.

Besides theory, the course will include a set of lectures on data handling, programming, and algorithms for empirical applications, as well as daily hands-on practical sessions.

Outline of the Course

There will be a focus on three themes:

(1) How to estimate firm-level productivity
- Methods
- Datasets: Orbis Financial Module, Compustat, Census

(2) Concentration, Firm Markups and Aggregate Implications
- Empirical estimates of firm-level markups and industry concentration
- Superstar Firms and the fall in the labor share
- Datasets: US vs Europe

(3) International Capital Flows and Aggregate Productivity
- Direct and Spillover Effects
- Innovation efforts and patents
- Misallocation
- Datasets: Orbis Ownership Module & Orbis IP Module + Patstat

TOPIC 1: FIRM LEVEL PRODUCTIVITY ESTIMATION (1 Session)

Main reading 1: Ackerberg, D. A., Caves, K., & Frazer, G. (2015). "Identification Properties of Recent Production Function Estimators". *Econometrica*, *83*(6), 2411–2451
https://www.jstor.org/stable/43866416?seq=1#metadata_info_tab_contents

> ***Pre-reading***: Olley, G. S., & Pakes, A. (1996). "The Dynamics of Productivity in the Telecommunications Equipment Industry". *Econometrica*, *64*(6), 1263–1297.
> https://www.jstor.org/stable/2171831?seq=1#metadata_info_tab_contents

Other readings:

Gandhi, Navarro and Rivers. (2020). "On the Identification of Gross Output Production Functions". *Journal of Political Economy*. 128 (8).
https://www.journals.uchicago.edu/doi/abs/10.1086/707736?af=R&mobileUi=0&

Kalemli-Ozcan, Sorensen, Villegas-Sanchez, Volosovych and Yesiltas. 2022. "How to Construct Nationally Representative Firm Level Data from the Orbis Global Database: New Facts and Aggregate Implications". NBER Working Paper 21558.

TOPIC 2: PRODUCT MARKET CONCENTRATION, FIRM MARKUPS AND AGGREGATE IMPLICATIONS (1 Session)

Main reading 1:
"The Rise of Market Power and the Macroeconomic Implications". 2020. Jan De Loecker, Jan Eeckhout and Gabriel Unger, Quarterly Journal of Economics.
https://www.janeeckhout.com/wp-content/uploads/26.pdf

Main reading 2:
"The Fall of the Labor Share and the Rise of Superstar Firms". 2020. David Autor, David Dorn, Larry Katz, Christina Paterson and John Van Reenen, Quarterly Journal of Economics. **https://economics.mit.edu/files/12979**

Other readings:
"Global Declining Competition?", Federico J. Díez, Jiayue Fan, Carolina Villegas-Sánchez, Journal of International Economics, Volume 132, 2021.
https://drive.google.com/file/d/1PO-QfA6zFoejiKPK2NTeXLrz4PsUOccn/view

"Increasing Differences Between Firms: Market Power and the Macro Economy" (2018) John Van Reenen Jackson Hole paper https://www.kansascityfed.org/documents/6974/VanReenenPaper_JH2018.pdf

"Firming up inequality". 2019. Jae Song, David Price, Fatih Guvenen, Nicholas Bloom and Till von Wachter, Quarterly Journal of Economics.

TOPIC 3: INTERNATIONAL CAPITAL FLOWS and PRODUCTIVITY -- TECHNOLOGY TRANSFER and MISALLOCATION (2 Sessions)

Main Reading 1: "Innovation in the Global Firm". 2020. Kamran Bilir and Eduardo Morales. Journal of Political Economy, volume 128, number 4.
https://www.journals.uchicago.edu/doi/abs/10.1086/705418?mobileUi=0&

Main reading 2: "Misallocation and Capital Market Integration: Evidence from India". 2022. Natalie Bau and Adrien Matray. accepted Econometrica.
https://www.dropbox.com/s/zr8wbvwlpi7xrr6/Bau_Matray_May2021.pdf?dl=0

Other Readings:
"Misallocation and Manufacturing TFP in China and India". 2009. Chang-Tai Hsieh and Peter J. Klenow, *Quarterly Journal of Economics*, http://klenow.com/MMTFP.pdf

"Capital Allocation and Productivity in South Europe". 2017. Gopinath, Kalemli-Ozcan, Karabarbounis and Villegas-Sanchez. *Quarterly Journal of Economics*, https://academic.oup.com/qje/article-abstract/132/4/1915/3871448

"Reallocation, Competition, and Productivity: Evidence from a Financial Liberalization Episode". 2017. Liliana Varela. *Review of Economic Studies*, 1–35.
https://drive.google.com/file/d/1c9y1EAA8ukH3i-StEMIYs-95Sf-oucSf/view

"Misallocation or Mismeasurement?" 2021. Mark Bils, Peter J. Klenow, Cian Ruane. *Journal of Monetary Economics*, Volume 124, Supplement, Pages S39-S56.
https://www.sciencedirect.com/science/article/abs/pii/S0304393221000970

"Identifying Technology Spillovers and Product Market Rivalry". 2013. Nicholas Bloom, Mark Schankerman and John Van Reenen, Econometrica.
https://onlinelibrary.wiley.com/doi/abs/10.3982/ECTA9466

Grading/Evaluation Criteria

Referee report
Referee report on selected paper. Select an applied paper from a recent NBER conference or working paper on the topics discussed in class and that has not been published yet.

Provide a referee report following the JIE style.
- Summary: the (standard) brief summary of how the referee sees the contribution of the paper.

- Essential Points: the points that must be addressed in the revision. Three points are expected as the mode for the number of points, but this could be as few as zero, and can certainly be more than three in some cases. If you think the paper should be rejected, this is where you would explain the main problems with the paper.

- Suggestions: everything else. In here you can add further suggestions to the authors but they are not forced to implement them.