AAKASH KALYANI

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EDUCATION

Ph.D., Economics, Boston University, Boston MA, May 2023 (expected)
Job market paper: *The Creativity Decline: Evidence from US Patents*
Dissertation Committee: Tarek Hassan, Pascual Restrepo, Nicholas Bloom, Josh Lerner

Master of Arts in Economics, Delhi School of Economics, University of Delhi

Bachelor of Engineering in Electronics and Communication, University of Delhi

FIELDS OF INTEREST

Macroeconomics, Finance, Labor Economics

WORKING PAPERS

"The Creativity Decline: Evidence from US Patents," September 2022. Job Market paper.

"Diffusion of Disruptive Technologies," (with Nicholas Bloom, Tarek Hassan, Josh Lerner and Ahmed Tahoun), October 2021
Reject and resubmit at Quarterly Journal of Economics.

WORK IN PROGRESS

"Gender, Diversity, and Creative Innovations"
"International Migration and Knowledge Diffusion"

PRESENTATIONS

2022: NBER Weekly Productivity Seminar; Technology & Policy Research Initiative, Brown Bag Seminar; Society of Economic Dynamics (Madison, Wisconsin); Green Line Macro Meeting, Boston University-Boston College Joint Conference

2021: Economic Growth Conference (NBER Summer Institute 2021); Economic Fluctuations and Growth Conference (NBER); Changing Nature of Innovation - Macro Perspectives (Centre for Technology, Innovation and Economic Research, India); Economics Seminar (Duke University)

2020: Bocconi Assembly for Innovation and Cooperation (Bocconi University, Italy); Economics Seminar (Yeshiva University); Economics Seminar (Nova School of Business and Economics, Portugal)

FELLOWSHIPS AND AWARDS

Visiting Fellow, Department of Economics, Harvard University, 2022
Henry S. Newman Graduate Student Fellowship, 2021

TEACHING EXPERIENCE
Teaching Assistant for Introductory Statistics, Boston University (Aug. 2018 - Dec. 2018)
Lecturer, Indian School of Business and Finance (Jul. 2016 - Jul. 2017)

WORK EXPERIENCE
Research Assistant to Tarek Hassan, Boston University (Jan. 2019 - May. 2021)
Research Associate, Centre for Advanced Financial Research and Learning, Reserve Bank of India (Jul. 2015 - Jul. 2016)
Analyst, The Smart Cube, Delhi, India (Jul. 2012 – Jul. 2013)

REFEREE EXPERIENCE
Review of Economic Dynamics

LANGUAGES
Fluent in English and Hindi

COMPUTER SKILLS: Python, STATA, R, Mathematica, MATLAB, LaTeX

CITIZENSHIP/VISA STATUS: Indian/F1

REFERENCES

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The Creativity Decline: Evidence from US Patents (Job Market Paper)

Why are patents rising as US productivity growth is slowing down? I argue that this is explained by declining share of creative patents. I show that changing composition of inventors towards less creative ones is partly responsible for declining creativity. To separate creative from derivative patents, I use patent text to develop a new measure of patent creativity: the share of new technical two-word combinations in a patent. I show that only creative and not derivative patents are associated with improvements in firm level productivity and stock market valuations. Using this measure, I investigate the determinants of creativity and find that younger inventors, and women and other minorities in patenting file more creative patents. Through the lens of a model calibrated to match these cross-sectional patterns, I show that aggregate productivity growth depends on the composition of inventors. In this model, falling population growth results in a drop in entry rates and explains 42% of the decline in creativity, 32% of the slowdown in productivity growth, and 15% of the increase in innovations. Increasing inclusion of women and minorities into patenting have increased but not near enough to compensate for the fall. I also make a case for government research subsidies to boost creativity and growth.

Diffusion of Disruptive Technologies
(with Nicholas Bloom, Tarek Hassan, Josh Lerner and Ahmed Tahoun)

We identify novel technologies using textual analysis of patents, job postings, and earnings calls. Our approach enables us to identify and document the diffusion of 29 disruptive technologies across firms and labor markets in the U.S. Five stylized facts emerge from our data. First, the locations where technologies are developed that later disrupt businesses are geographically highly concentrated, even more so than overall patenting. Second, as the technologies mature and the number of new jobs related to them grows, they gradually spread geographically. While initial hiring is concentrated in high-skilled jobs, over time the mean skill level in new positions associated with the technologies declines, broadening the types of jobs that adopt a given technology. At the same time, the geographic diffusion of low-skilled positions is significantly faster than higher-skilled ones, so that the locations where initial discoveries were made retain their leading positions among high-paying positions for decades. Finally, these pioneer locations are more likely to arise in areas with universities and high skilled labor pools.