

AAKASH KALYANI

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EDUCATION

Boston University PhD Candidate in Economics Fields: Macroeconomics, Finance, Labor Economics	<i>2017-2023 (Expected)</i>
Delhi School of Economics, University of Delhi Masters in Economics First Division	<i>2013-2015</i>
Netaji Subhas Institute of Technology, University of Delhi Bachelor of Engineering in Electronics and Communication First Division	<i>2008-2012</i>

WORKING PAPERS

The Creativity Decline: Evidence from US Patenting (link) <i>Job market paper</i>	<i>2022</i>
Diffusion of Disruptive Technologies (link) <i>with Nicholas Bloom, Tarek Hassan, Josh Lerner and Ahmed Tahoun</i>	<i>2021</i>

WORK IN PROGRESS

International knowledge diffusion: Role of immigration and foreign direct investment
Silicon Valley: A hub for creativity or learning?

FELLOWSHIPS

Henry S. Newman Graduate Student Fellowship Boston University	<i>Sep. 2021 - May. 2022</i>
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OTHER POSITIONS

Visiting Fellow Department of Economics, Harvard University	<i>Aug. 2022-Current</i>
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PRESENTATIONS

2022

- NBER Weekly Productivity Seminar; Technology & Policy Research Initiative (TPRI), Boston University; 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*)

PRESENTATIONS

2020

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

TEACHING EXPERIENCE

Teaching Assistant for Introductory Statistics Boston University	<i>Aug. 2018 - Dec. 2018</i>
Lecturer, Econometrics and Mathematical Economics Indian School of Business and Finance	<i>Jul. 2016 - Jul. 2017</i>

WORK EXPERIENCE

Research Assistant to Tarek Hassan Boston University	<i>Jan. 2019 - May. 2021</i>
Research Associate Centre for Advanced Financial Research and Learning, Reserve Bank of India	<i>Jul. 2015 - Jul. 2016</i>
Analyst The Smart Cube, Delhi, India	<i>Jul. 2012 - July 2013</i>

REFEREEING EXPERIENCE

Review of Economic Dynamics

TECHNICAL SKILLS

Python, Stata, MATLAB, R, Mathematica, LaTeX

REFERENCES

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CITIZENSHIP

F1, Indian Citizen

LANGUAGES

English, Hindi

The Creativity Decline: Evidence from US Patenting

Job Market Paper

I argue that the exponential increase in patents and slowdown in productivity growth over the last few decades is explained by a declining share of creative patents, partly driven by a lack of younger inventors. To separate creative from derivative patents, I develop a novel, text-based, measure of patent creativity: the share of two-word combinations that did not appear in previous patents. I show that only creative and not derivative patents are associated with significant improvements in firm level productivity and stock market valuations. Using the measure, I show that younger inventors on average file more creative patents. To estimate the effect of changing US demographics on aggregate creativity and productivity growth, I build a growth model with endogenous creation and adoption of technologies. In this model, falling population growth explains 42% of the observed decline in patent creativity, 32% of the slowdown in productivity growth, and 15% of the increase in derivative patenting.

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.