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NBER Innovation Research Boot Camp
1050 Massachusetts Avenue
Cambridge, Massachusetts 02138

Dear Members of the Selection Committee,

I am a third-year PhD candidate in Economics at NYU Stern, applying to the 2026 NBER Innovation Research Boot Camp. My research studies how trade shocks reshape the direction of national innovation. After China joined the WTO, within-year patent similarity declined sharply—do inventors respond to trade openness by spreading into new technological areas, or by specializing more deeply? And is that response driven by competition pressure or by access to foreign ideas?

My empirical approach builds on Ganguli, Lin, Meursault, and Reynolds (2024), who develop a framework for measuring patent similarity using text embeddings. I extend their methods to international settings and use trade liberalization episodes as sources of variation. I would particularly welcome feedback on using trade policy shocks for identification in this setting, and on the measurement choices involved in embedding-based similarity.

My doctoral training in international economics and macroeconomic theory gives me a strong foundation for connecting innovation to trade and growth. The Boot Camp would complement this with deeper exposure to the innovation-specific literature, particularly work on idea production and knowledge diffusion. I am also eager to engage with other early-career researchers and develop potential collaborations.

Thank you for your time and consideration. My recommendation will be provided by **Venky Venkateswaran** (Associate Professor of Economics- NYU Stern)

Sincerely,
Olalekan Bello

OLALEKAN BELLO

ob708@stern.nyu.edu LinkedIn

Education

New York University, Stern School of Business — New York, NY
Ph.D. in Economics — Expected 2028

The University of Texas at Austin — Austin, TX
M.A. in Economics — 2021

Columbia University — New York, NY
Visiting Scholar, Department of Economics — 2019–2020

Howard University — Washington, DC
B.A. in Economics, *summa cum laude* — 2019

References

Prof. Venky Venkateswaran
Dept. of Economics
NYU Stern School of Business
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Prof. Abdoulaye Ndiaye
Dept. of Economics
NYU Stern School of Business
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Prof. James Traina
Dept. of Economics
NYU Abu Dhabi
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Research Fields

Primary: Macroeconomics, International Economics

Working Papers

"Measuring and Valuing Service Quality with Large Language Models"
(with Bruno Abrahao, Anton Bobrov, Jax Li and James Traina)

Service quality is unmeasured in official statistics despite services comprising two-thirds of consumer spending. We develop a scalable text-based method to score millions of consumer reviews across five established service quality dimensions. In the cross-section, higher-quality establishments command higher prices: a one-standard-deviation quality increase corresponds to 9% higher spending. Aggregate quality declined by roughly 3 percent at its trough in late 2021, and the aggregate quality-adjustment wedge is at most 2 percentage points cumulative, or about 0.8 percentage points annually, using the cross- sectional hedonic gradient as an upper bound. Category-specific effects vary, with limited- service restaurants showing an upper-bound implied bias of up to 0.24 percentage points annually. In financial markets, the quality-value relationship is more limited: quality is not broadly capitalized into firm valuations, though consumer-facing industries show a positive association. Our approach extends hedonic quality adjustment from goods to services.

"Inflation and Exchange Rate Shocks in the Presence of Parallel Markets"
(with Toni Oki)

Prior studies document the puzzle of limited retail price inflation following large ex- change rate shocks in emerging markets. This paper offers another partial solution: the presence of a parallel market. Using Nigerian data, we show that estimates that only account for the official rate understate true pass-through, as parallel rate shocks have already transmitted to inflation. Contrasting the official market, the parallel market has robust pass-through across all sectors, especially food and energy. This broad- based impact also implies that the disparities in pass-through between the lowest- and highest-wealth households are smaller for parallel rate movements than official rate adjustments.

"Tight Markets, High Rents: Search Technology When Housing Is Scarce"
(with Arnav Deshpande)

Standard consumer search models predict that greater information reduces prices by im- proving consumers' ability to compare options. We show this prediction may not hold in two-sided matching markets where both parties have a value of remaining unmatched. We develop a dynamic search model of the rental housing market to illustrate this mechanism. In partial equilibrium, we characterize how an improvement in search technology that affects only one side of the market influences equilibrium rents and other outcomes. In general equi- librium, we show that the effects of neutral technological improvements that symmetrically improve meeting rates can raise equilibrium rents, particularly in supply-constrained markets. The magnitude of this effect depends on how tight the housing market is: rent increases are larger in tight markets and attenuate as housing supply expands.

Work in Progress

"Local Search and Aggregate Shocks" (with Claudia Macaluso and Abdoulaye Ndiaye)
"Credit and Conflict in Nigeria" (with Abdoulaye Ndiaye, Simone Lenzu and Toni Oki)

Teaching

Graduate Level (NYU Stern):
AI in Finance (MBA), TF for Prof. James Traina — Summer 2025
Designed and led workshops for 40 students on applying AI to finance

Undergraduate Level (NYU Stern):
Microeconomics with Calculus, TF for Prof. Simon Bowmaker — Fall 2025
Designed and led recitation sessions for 20 students on calculus applications in microeconomics

Research Experience and Other Employment

Predoctoral Research Fellow, Columbia University — 2019–2020
Research Assistant, International Food Policy Research Institute (IFPRI) — 2021
Senior Business Analyst, McKinsey & Company — 2021–2023

Honors and Awards

NYU Stern Edwin and Diane Elton Fellowship — 2023–Present
NYU Africa House Fellowship ($2,500) — 2025

Conferences and Seminars

NYU Stern Seminars: Macro, Industrial Organization

Service

President, Abram Harris Economics Society, Howard University 2018–2019
Collaborated with Federal Reserve Board and Economic Policy Institute; designed programming workshops in R

President, Howard University International Pals 2017–2018
Led organization of 25+ students supporting international students

Others

Software and Programming: R, Julia, MATLAB, Stata
Languages: English (Native)
Work Authorization: Eligible to work in the U.S. during Ph.D. under CPT; H1-B authorization with 4 years of validity; 3-year STEM-OPT post-graduation

Last update: February 2026

List of PhD Courses

Olalekan Bello

Completed Courses

Core

- Macroeconomics I
- Macroeconomics II
- Microeconomics I
- Microeconomics II
- Econometrics I
- Econometrics II
- Math for Economists I

Electives

- Advanced Macroeconomics
- Empirical Methods in Monetary and Macroeconomics
- International Macro-Finance
- Trade and Spatial Economics
- Macro-Perspectives on Labor Markets
- Industrial Organization I
- Industrial Organization II

Current Courses

- International Macroeconomics

Trade and the Direction of Innovation
Olalekan Bello (NYU Stern)

Where firms direct their innovative effort shapes long-run growth and catch-up dynamics. While substantial work examines how trade affects the *volume* of innovation (Bloom, Draca, and Van Reenen 2016), far less is known about how trade reshapes *where* firms innovate. Trade can shift innovation direction through two channels: knowledge diffusion and competition.

If trade primarily facilitates knowledge diffusion (Coe and Helpman 1995; Keller 2004), domestic innovation should converge toward the patterns of trading partners. If trade mainly intensifies competition, firms may pivot into new domains to escape rivalry (Aghion et al. 2005). Identifying which mechanism dominates is crucial for understanding the gains from openness and the potential costs of geoeconomic fragmentation.

Figure 1 reveals a stark empirical pattern that motivates this analysis. The left panel plots mean within-year patent similarity for Chinese patents from 1992 to 2021, computed by embedding patent abstracts into a semantic vector space following Ganguli et al. (2024).[1] Similarity rises through the 1990s, peaks in 2000, then drops sharply: by 2005, mean similarity has fallen 37% from its peak. This decline also holds within industries, indicating it is not driven by sectoral composition changes [2]. The right panel overlays trade openness (exports plus imports as a share of GDP), which moves inversely throughout the period, with the sharpest divergence coinciding with WTO accession in 2001.

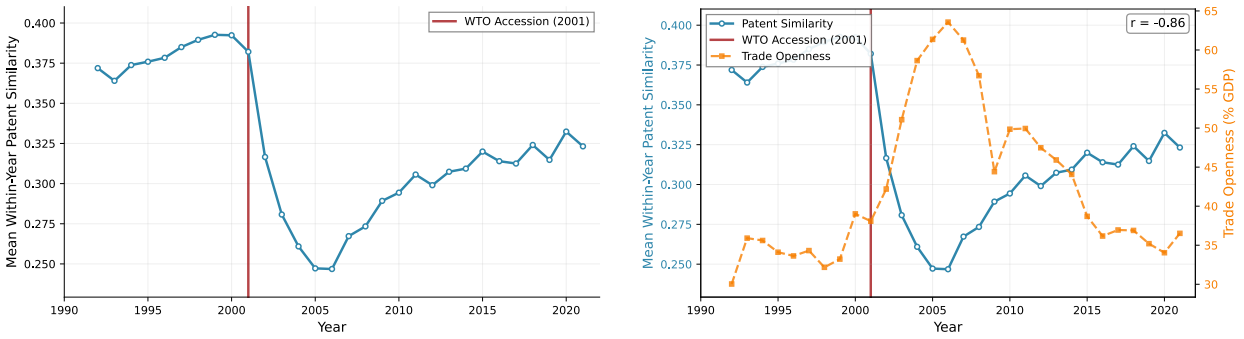


Figure 1: Mean within-year patent similarity in China, 1992–2021 (left), and its inverse co-movement with trade openness (right).

To distinguish between diffusion and escape competition, I will exploit industry-level variation in WTO-induced tariff liberalizations. If knowledge diffusion dominates, Chinese patents should become *more* similar to those of trading partners in sectors with the largest tariff cuts. If escape competition dominates, within-industry similarity should fall *most* in sectors where the removal of trade barriers posed the greatest threat to incumbent rents.

[1] I use the priority date (first filing) rather than publication date, and filter to the priority country to ensure patents reflect domestic inventive activity. I use Sentence-BERT for embeddings but the pattern is robust to using GTE (General Text Embedding).

[2] I measure similarity within HS2 product codes (mapped from IPC subclasses using the Lybbert and Zolas 2014 concordance)

I am currently working on two significant extensions. First, recent advances in large language models enable classification of patent *novelty*—distinguishing incremental adaptation from novel recombination—which would sharpen tests between diffusion and competition. Second, I plan to apply this methodology to recent geoeconomic fragmentation, studying whether technological convergence reverses when trade and knowledge flows are disrupted.

This project sits at the intersection of innovation measurement, international trade, and growth theory. The measurement challenges connect directly to Ganguli et al.'s methodological work; the mechanisms relate to Jones's (2009) paper on idea production and the burden of knowledge. The Boot Camp would be an ideal setting to refine both the framing and measurement choices, and to engage with other early-career researchers working on open questions in innovation.

References

[1] Aghion, P., Bloom, N., Blundell, R., Griffith, R., and Howitt, P. (2005). Competition and Innovation: An Inverted-U Relationship. *Quarterly Journal of Economics*, 120(2), 701–728.

[2] Bloom, N., Draca, M., and Van Reenen, J. (2016). Trade Induced Technical Change? The Impact of Chinese Imports on Innovation, IT and Productivity. *Review of Economic Studies*, 83(1), 87–117.

[3] Coe, D.T. and Helpman, E. (1995). International R&D Spillovers. *European Economic Review*, 39(5), 859–887.

[4] Ganguli, I., Lin, J., Meursault, V., and Reynolds, N.F. (2024). Patent Text and Long-Run Innovation Dynamics: The Critical Role of Model Selection. *NBER Working Paper* 32934.

[5] Jones, B.F. (2009). The Burden of Knowledge and the "Death of the Renaissance Man": Is Innovation Getting Harder? *The Review of Economic Studies*, 76(1), 283–317.

[6] Lybbert, T.J. and Zolas, N.J. (2014). Getting Patents and Economic Data to Speak to Each Other: An 'Algorithmic Links with Probabilities' Approach for Joint Analyses of Patenting and Economic Activity. *Research Policy*, 43(3), 530–542.

[7] Keller, W. (2004). International Technology Diffusion. *Journal of Economic Literature*, 42(3), 752–782.

NYU STERN

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February 12, 2026

Dear Members of the Selection Committee,

I am writing to strongly recommend **Olalekan "Lekan" Bello** to the boot camp. Lekan is a third year Economics PhD student here at NYU Stern. I have known him since he entered the program.

Lekan been very productive and has multiple well-developed projects. I will focus on the one most relevant to the boot camp: an interesting project at the intersection of trade and innovation. The goal is to document — and quantify — the effect of openness to trade on the nature of a country's innovation. His motivation is a striking pattern in the Chinese patent data: the similarity of patents (measured through textual analysis of filings) is inversely related to openness. This finding is suggestive of knowledge spillovers, though, obviously, disentangling that force from other mechanisms (e.g. changes in the competitive environment) will take more work. Lekan proposes to do this by leveraging the cross section, both across industries and countries. This is a I see a lot of potential in this project, especially in light of the ongoing debate about the future of globalization.

In my view, Lekan is a perfect candidate for the boot camp. In addition to his research interests being a great match, he stands to benefit immensely from exposure to new techniques and ideas at this stage. He brings a well-rounded basket of skills and broad interests. I have no doubt he will be a positive contributor to the group. I recommend him to you without reservation.

Please do not hesitate to reach out to me if you need additional information.

Sincerely,



Venky Venkateswaran