

Elijah Coleman

Curriculum Vitae

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Department of Economics
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EDUCATION

Vanderbilt University, Nashville, TN

Ph.D. candidate in Economics

expected 2022

Committee:

Eric Bond (Chair)

Daniel Gervais (Vanderbilt Law School)

Tong Li

Joel Rodrigue

M.A. in Economics

2018

University of Alabama, Tuscaloosa, AL

B.S. in Mathematics, Economics

2016

FIELDS OF SPECIALIZATION

Primary: International Trade, Intellectual Property

Secondary: Social Choice Theory, Industrial Organization

RESEARCH

Job Market Paper:

The Effects of Multilateral IP Treaties on Patenting Behavior

I analyze the impact of several international treaties on global patenting behavior. Each treaty effect is estimated using 3-way fixed effects Poisson pseudo-maximum likelihood estimator with the corresponding bias corrections thereof. Using the PATSTAT dataset from the EPO covering 211 countries/territories over the period 1980-2015, I construct bilateral aggregate patent flows using applicant addresses to determine the origin of each patent family. I find that trade liberalizing treaties as well as treaties strengthening intellectual property rights increase patent flows between countries. Joint membership in the Patent Cooperation Treaty has a robust positive effect in both developed and developing economies. Joint membership in other treaties (Paris, GATT, WTO, TRIPS) have strong impacts on patent flows between developing countries but limited effect between developed economies.

Work in Progress:

Citations as a measure of Patent Value (with Phil Huang)

For a number of applications, it is useful to have a measure of the "quality of an innovation." A traditional proxy for innovation quality is the number of citations its associated patents receive. This measure conflates the two meanings of an innovation's value: its economic value and its technologic value. Patent citations are the references to prior art in the relevant technology spaces that inform or directly shape an new innovation. As such, citations are a more direct indicator of the technologic value of the the cited patent rather than its economic value. This paper evaluates the link between citations and a patent *economic* value using firms' decisions to renew a patent. In the EU, a firm pays yearly renewal fees in each country in which it holds a patent. These decisions provide a direct measure of the economic value of holding a patent in each country. Using the PATSTAT dataset, we construct renewal data for each EU patent in the period 2000-2015. We link this data to renewal fee schedules in

the EU as well as global citation counts for each innovation. We then evaluate the quality of citations as a proxy for economic value of an innovation.

Patent Delays, a Learning Approach

The Paris Treaty for the Protection of Industrial Property provides a 12-month period following an initial patent application during which a firm can submit further applications in additional countries. This period can be extended through an ‘international patent application’ as part of the Patent Cooperation Treaty. This period gives firms the ability to make additional patenting decision on the basis of information gathered as a result of the initial application. The order in which firms choose to patent in each market indirectly reveals the relative ranking of the profitability of a patent in each country. On this basis, this paper constructs an index of the value of a patent in each country.

CONFERENCE PRESENTATIONS

Presentations

Missouri Valley Economics Association, Virtual	October 2021
Southern Economic Association, Houston, TX	<i>Scheduled</i> November 2021

FELLOWSHIPS

Fellowships

Vanderbilt University Fellowship	2016-Present
Dornbush Research Assistantship	Spring 2021
Departmental Summer Research Grant	Summer 2017

TEACHING POSITIONS

Vanderbilt University, Nashville, TN

Teaching Assistant

Microeconomics I (M.A.)	Fall 2017
Statistical Analysis (M.A.)	Fall 2017
Principals of Macroeconomics (Undergraduate)	Spring 2018
Intermediate Microeconomic Theory (Undergraduate)	Fall 2018
Industrial Organization (Undergraduate)	Fall 2018
Social Choice Theory (Undergraduate)	Spring 2019, Spring 2020, Fall 2020
Macroeconomic Theory II (Ph.D.)	Spring 2019
Game Theory and Applications (Undergraduate)	Fall 2019
Macroeconomics (Undergraduate)	Spring 2020
Selected Topics in Mathematics for Economists (Ph.D.)	Fall 2020

Personal Tutor

Law and Economics Program Tutor (Ph.D.)	Fall 2017, 2018; Spring 2018, 2019; Summer 2019
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Instructor

Teaching Assistant Orientation	Fall 2021
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