

University of Minnesota - Twin Cities

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Curriculum Vitae Fall 2017

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Major Fields of Concentration

Industrial Organization, Applied Econometrics, Labor, Trade

Education

<i>Degree</i>	<i>Field</i>	<i>Institution</i>	<i>Year</i>
Ph.D.	Economics	University of Minnesota (expected)	2018
M.A.	Economics	University of Minnesota	2016
M.A.	Economics	University of Toronto	2012
B.A. (first class honours)	Economics	University of Manitoba	2010

Dissertation

Title: "Essays in Productivity and Trade"
Dissertation Advisor: Professor Amil Petrin
Expected Completion: Summer 2018

References

Professor Amil Petrin	(612) 625-0145 petrin@umn.edu	Department of Economics University of Minnesota 4-101 Hanson Hall
Professor Thomas Holmes	(612) 625-6353 holmes@umn.edu	1925 Fourth Street South Minneapolis, MN 55455
Professor Loukas Karabarbounis	(612) 625-7504 loukas@umn.edu	
Professor Fatih Guvenen	(612) 625-0767 guvenen@umn.edu	

Honors and Awards

- 2017 *Richard Sandor Dissertation Fellowship*, University of Minnesota, Minneapolis, Minnesota
2016 *Doctoral Dissertation Fellowship*, University of Minnesota, Minneapolis, Minnesota
2016 *Graduate Research Partnership Program Fellowship*, University of Minnesota, Minneapolis, Minnesota
2015 *First Place, Hardy Third-Year Paper Competition*, University of Minnesota, Minneapolis, Minnesota
2014 - 2015 *Distinguished Teaching Assistant Award*, Department of Economics, University of Minnesota, Minneapolis, Minnesota
2013 *Herbert Mohring Fellowship in Economics*, Department of Economics, University of Minnesota, Minneapolis, Minnesota
2013 *CLA Graduate Fellowship*, University of Minnesota, Minneapolis, Minnesota
2012 -2016 *CGS Doctoral Fellowship*, SSHRC
2011 *Graduate Fellowship*, University of Toronto, Toronto, Ontario, Canada
2011 *Joseph-Armand Bombardier Canada Graduate Scholarship*, SSHRC
2010 *Faculty Gold Medal in Honours*, University of Manitoba, Winnipeg, Manitoba, Canada
2009 *Dr. A. W. Hogg Scholarship*, University of Manitoba, Winnipeg, Manitoba, Canada
2009 *Isbister Scholarship*, University of Manitoba, Winnipeg, Manitoba, Canada
2009 *UMSU Scholarship*, University of Manitoba, Winnipeg, Manitoba, Canada

Teaching Experience

- 2013 - 2015 *Teaching Assistant*, Department of Economics, University of Minnesota, Minneapolis, Minnesota. Led recitation sections for the graduate *Applied Econometrics* sequence *Principles of Microeconomics*, *Principles of Macroeconomics*, *International Trade*.
2011 - 2012 *Teaching Assistant*, Department of Economics, University of Toronto, Toronto, Ontario, Canada. Led recitation sections for *Principles of Economics*, and *Environmental Economics*.

Research Experience

- 2014 - 2017 *Research Assistant*, Department of Economics, University of Minnesota, Minneapolis, Minnesota. Research assistant to Amil Petrin, Kyle Herkenhoff, Jose-Victor Rios-Rull, and Thomas Holmes.
2014 - 2015 *Research Analyst*, Research Department, Federal Reserve Bank of Minneapolis, Minneapolis, Minnesota.

Papers

- “How Substitutable are Labor and Intermediates?” job market paper
“Trade, Occupation Sorting, and Inequality,” with Ming Xu
“The Impact of Research and Development on Quality, Productivity, and Welfare,” with Amil Petrin and Frederic Warzynski
“Allowing for Heterogeneous Preferences over Unobserved Quality in Random Coefficient Models,” with Amit Ghandi, Kyoo-il Kim, and Amil Petrin

Presentations

- “Trade, Occupation Sorting, and Inequality,” presented at the Annual Conference of the Canadian Economic Society, Toronto, Ontario, 2015; the North American Summer Meeting of the Econometric Society, Philadelphia, PA, 2016; the Midwest Macroeconomics Meeting, Baton Rouge, LA, 2017.
“How Substitutable are Labor and Intermediates?” presented at the Annual Conference of the Canadian Economic Association, Ottawa, Ontario, 2016; the Danish International Economics Workshop, Aarhus, 2017.

Invited Research Visits

- August 2017 Research Department, Federal Reserve Bank of St. Louis, St. Louis, Missouri
October 2015, June 2017 School of Business and Social Sciences, University of Aarhus, Denmark

Referee Experience

Quarterly Journal of Economics

Computer Skills

Fortran, Matlab, Stata/Mata, MPI, Python, SAS, Mathematica

Data Access & Experience

FIDA (Statistics Denmark), LBD and CFS (Special Sworn Status, U.S. Census Bureau), Consumer Credit Panel (Federal Reserve), NLSY, CPS, PSID, SIPP, OES

Languages

English

Abstracts

“How Substitutable are Labor and Intermediates?” job market paper

Empirical models of production often impose input complementarity and rule out an extensive margin in the decision to “make or buy” inputs. This paper develops a simple model of production which generalizes the standard Cobb-Douglas approach and allows labor and intermediates of similar types (or “tasks”) to be complements, substitutes, or (importantly) outsourced entirely. Modeling this “make or buy” decision directly allows me to correct for selection bias resulting from the endogenous outsourcing decision and to characterize the extensive margin of factor demand. I take the model to unique Danish data on task-level purchases of disaggregated labor (e.g. truck drivers), goods, and services (e.g. shipping) and find that labor and intermediates are gross substitutes. Estimated elasticities of substitution range from 1.5 to 4, with positive cross-price elasticities between 0 to 2 across inputs and industries. Aggregating across firms, I show that demand for labor is becoming increasingly price elastic over time, driven by growing outsourcing and specialization. To illustrate the importance of allowing for substitution, I examine the effect of an increase in minimum wages in the Danish manufacturing industry, finding that ignoring outsourcing underestimates unemployment by 40%. This also has important implications for estimating productivity. I estimate the effect of recent decreases in Danish import tariffs on firm productivity and show that controlling for substitution triples the results relative to benchmark models which only control for price effects.

“Trade, Occupation Sorting, and Inequality,” with Ming Xu

Firms react to changes in factor prices with intensive and extensive-margin employment adjustments at the occupational-level. We study the distributional and aggregate consequences of this make-or-buy dynamic by developing a novel network model of heterogeneous firm-to-firm trade where the boundary of each firm depends on factor prices and firm-occupation comparative advantage in input-production. We show that the model can be easily aggregated and taken to industry-level data, and use the calibrated model to examine recent trends in employment, wages and trade in the USA. We use public OES and CPS data to show empirical evidence that a significant fraction of the growth in wage inequality in the USA is due to changes in firm/industry specialization and occupation sorting. To understand and measure the underlying causes of these trends, we calibrate the model to occupation and industry data from the OES and input-output tables. The results suggest that 1/3rd of the increases in wage inequality stem from decreases in inter-industry trade frictions with the remaining 2/3rds stemming from changes in technology and labor supply. Falling trade frictions are also responsible for all of the increases in occupational sorting and concentration. Had trade frictions been held at their 2002 level, productivity growth would have led to an increase in vertical integration, rather than the decrease observed in the data.