The Impact of Student Debt on Venture-Backed Entrepreneurship and Local Economic Growth: Evidence From "No-Loans" Financial Aid Policies

Karthik Krishnan and Pinshuo Wang

Research Question.

Entrepreneurship plays a central role in stimulating innovation and economic growth (Acs and Audretsch, 1988; Christensen, 1997; King and Levine, 1993). Hathaway, Bell-Masterson and Stangler (2013) show that small startups created more than 1 million jobs per year over the past three decades. Thus, it is crucial to understand the underlying dynamics that drive entrepreneurial activity.

In this study, we will use the implementation of "no-loans" financial aid policy, which replaces loans with grants in financial aid packages, to understand the causal impact of student debt on potentially high impact entrepreneurship such as those backed by venture capitalists (VCs). Universities established such policies over the last two decades to allow students from less affluent families to be able to access high quality higher education. These implementations were staggered over time by different universities, which allows us to use these events in a Difference-in-Differences framework. Moreover, these financial aid program changes were not made with entrepreneurial outcomes in mind, providing us with a plausibly exogenous source of variation in student loans.

Since 1998, over 70 universities in the U.S. have replaced loans with grants in their financial aid packages, at least for certain groups of students (e.g. state residents, low income families). Statistics from universities indicate that this movement has reduced their students' debt burden significantly. Thus, we analyze the role of "no-loans" financial aid policies on total financial aid and student loan. For the exclusion restriction to hold, it should be the case that "no-loans" financial aid policy would impact the loan component of financial aid negatively, but not overall financial aid. As illustrated earlier, previous research has provided evidence that student debt hinders entrepreneurship. Thus, we expect "no-loans" financial aid policies would increase entrepreneurship by reducing student debt burden. In these tests, we will restrict the sample to students that were already enrolled in college prior to the policy change. Thus, the cohorts that remain in the new financial regime the longest will experience the most reduction in their student loans.

Third, we will examine which type of entrepreneurship is impacted. There has been debate about which type of entrepreneurship drives economic growth. For example, Hurst and Pugsley (2011) argued that most small businesses have little desire to grow or innovate. Thus, it is important to recognize how "no-loans" financial aid policies impact high quality entrepreneurship. In particular, we will measure quality by firm performance, such as VC backing, patent filing, sales, employment and growth. VC's have been shown to back higher quality firms as well as improve firm quality (Chemmanur, Krishnan, and Nandy, 2011; Puri and Zarutskie, 2012). Further, innovative firms are known to have better performance (Kortum and Lerner, 1998).

Fourth, we will look into whether "no-loans" financial aid policies have a spillover effect on local entrepreneurial activities. Specifically, we will analyze whether "no-loans" policies increase local business establishments, employment, and innovation in the county where the university with the policy is located. We expect that "no-loans" financial aid policies will increase college graduates' entrepreneurial activity, and lead to a positive impact on high quality entrepreneurship around the local area near the university.

Data

The data we utilize in this study comes from several sources. First, we collect individual level entrepreneurship data from Crunchbase, which is a large database containing information on individual entrepreneur profiles, their company names, and year of founding. Second, we collect the education history data of entrepreneurs in Crunchbase from LinkedIn and other web sources. We then match each individual who obtained their undergraduate degrees in U.S. with IPEDS (Integrated Postsecondary Education Data System) university level data obtained from the U.S. Department of Education, which is a longitudinal dataset that contains university enrollment, completions and student aid data for academic years 1986-87 through 2011-12. For the initial analysis, we aggregate the data to university-year level. In the next set of analyses, we will collect detailed firm performance and employment data from National Establishment Time-Series (NETS) Database, county level establishments and employment from the County Business Patterns (CBP), and patent data from the Li, Lai, D'Amour, Doolin, Sun, Torvik, Yu, and Fleming (2014) to analyze firm- and county- level startup, employment, and innovation activities.

Methodology

We will establish the casual impact of student debt on entrepreneurship using the Difference-in-Differences method. One concern about causal interpretation is the endogeneity of "no-loans" financial aid policy. That is, the adoption of "no-loans" financial aid policies might be driven by universities' current levels of student loans, tuition costs, or other unobservable characteristics. Thus, we test for pre-trend differences between treatment and control universities in our empirical analysis. The treatment group include universities that adopted "no-loans" policies during 1987-2012. The control universities are selected by closest match for the treatment group based on their tuition for full-time undergraduates and number of bachelor's degrees granted.

Our initial results show that "no-loans" financial aid policy does not change total financial aid amount, which indicates that the policy did not affect the total availability of financial aid to students (and that the reduction in loan amount was not offset by a similar reduction in overall financial aid amount). Thus, the exclusion restriction holds. The analysis also provides initial evidence that "no-loans" policy is positively associated with a college's production of entrepreneurs and VC backed entrepreneurs, which are consistent with our propositions.

In later tests, we plan to analyze other measures of startup firm success including obtaining funding from reputable venture capitalists, innovation, sales, employment, and growth. We will also analyze whether there is a spillover effect of "no-loans" policies on local entrepreneurship, employment, and innovation in the area where the university is located.

To summarize, this study aims to use universities' institution of "no-loans" financial aid policies as a natural experiment to empirically examine the relationship between student debt and high quality entrepreneurship using the Difference-in-Differences method. Preliminary results have provided evidence that "no-loans" policy is positively associated with high quality entrepreneurship. Our next step is to explore and validate the causal relationship between student debt and high quality entrepreneurship, high quality VC backed entrepreneurship, long-term survival, and local innovation and economic activity.

Budget and Justification.

NETS data acquisition: $8,500.

We plan to utilize the research grant to obtain NETS data, which follows over 54.7 million establishments in 385 fields nationwide since January 1990 and provides detailed information on individual firm performance. Specifically, we will match NETS with my original dataset by individual's company name, location and founding year, and then select a group of appropriate control startups from NETS database. The NETS data offers a unique opportunity that will allow us to identify a startup's industry, and analyze its quality in terms of sales, employment, and growth over time.

Travel for presentation: $3,000.

We expect to complete the project by early August and present in seminars/conferences to gather feedback and make improvements.

Total budget amount: $11,500

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AREAS OF INTEREST

Research
Corporate Finance, Entrepreneurial Finance, Venture Capital, IPO, Corporate Governance, International Finance, Financial Intermediation, Investment Banking, and Mergers.

Teaching
Entrepreneurial Finance, Corporate Finance, and Financial Management.

EDUCATION

PhD in Finance, Boston College, 2008.

B. Eng. (Electrical Engineering), Delhi College of Engineering, Delhi University, India, 2000.

APPOINTMENTS AND AFFILIATIONS

Associate Professor of Finance, Department of Finance and Insurance, D'Amore-McKim School of Business, Northeastern University, 2015-present.

Member, Launchpad Venture Group, 2015-present.

Thomas Moore Faculty Fellow, D'Amore-McKim School of Business, Northeastern University, 2012-2017.

Special Sworn Status Researcher at the *Center for Economic Studies*, Boston Research Data Center (BRDC) of the U.S. Census Bureau and NBER, Cambridge, 2006- present.

Assistant Professor of Finance, Department of Finance and Insurance, D'Amore-McKim School of Business, Northeastern University, 2008-2015.

Instructor and Graduate Assistant, Department of Finance, Carroll School of Management, Boston College, 2003-2008.

Instructor and Graduate Assistant, Department of Finance, School of Business, University of Connecticut, 2001-2003.

Management Trainee- Power Project Development, Larsen and Toubro Limited, Mumbai, India, 2001.

Software Engineer, Mahindra British Telecom, Pune, India, 2000.

PUBLICATIONS AND ACCEPTANCES

"Is it the Investment Bank or the Investment Banker: A Study of the Role of Investment Banker Human Capital in Acquisitions," with Thomas J. Chemmanur and Mine Ertugrul. Conditionally Accepted at the *Journal of Financial and Quantitative Analysis.*

"Do Local and International Venture Capitalists Play Well Together? The Complementarity of Local and International Venture Capitalists," with Thomas J. Chemmanur and Tyler Hull, *Journal of Business Venturing,* 2016, 31 (5), 573-594.

"Does Financing Spur Small Business Productivity? Evidence from a Natural Experiment", with Debarshi Nandy and Manju Puri. *Review of Financial Studies,* 2015, 28 (6), 1768-1809.

"The Effects of Corporate Spin-offs on Productivity," with Thomas J. Chemmanur and Debarshi Nandy. *Journal of Corporate Finance,* August 2014, 27, 72-98.

"Investment Banks in Dual Roles: Acquirer M&A Advisors as Underwriters." with Mine Ertugrul. *Journal of Financial Research,* Summer 2014, 37 (2), 159-189.

"Commercial Banks Getting Underwriting Business: Tying or Relationship Building?" *Journal of Economics and Business*, 2013, 66, 47-75.

"Heterogeneous Beliefs, IPO Valuation, and the Economic Role of the Underwriter in IPOs." with Thomas J. Chemmanur. *Financial Management*, November 2012, 41 (4), 769-811 *(Lead Article)*

"How Does Venture Capital Financing Improve Efficiency in Private Firms? A Look Beneath the Surface." with Thomas J. Chemmanur and Debarshi Nandy. *Review of Financial Studies*, December 2011, 24 (12), 4037-4090.

"Can CEO Dismissals Be Proactive?" with Mine Ertugrul. *Journal of Corporate Finance*, February 2011, 17 (1), 134-151.

"How Do Venture Capitalists Create Value for Entrepreneurial Firms? A Review of the Literature." with Thomas J. Chemmanur and Debarshi Nandy, 2010, (Book chapter in *Venture Capital: Investment Strategies, Structures, and Policies,* Douglas J. Cumming, ed., Wiley)

WORKING PAPERS

"The Cost of Financing Education: Can Student Debt Hinder Entrepreneurship?" with Pinshuo Wang.
(Second round revise and resubmit from *Management Science)*

"Risky Lending: Does Bank Corporate Governance Matter?" with Olubunmi Faleye.

"Top Management Quality, Corporate Innovation, and Innovator Flows", with Thomas J. Chemmanur, Lei Kong, and Qianqian Yu.

"Labor Laws, Inventor Mobility, and Entrepreneurship," with Debarshi Nandy, Jean Claude Makolo, and Vikram Nanda.

"Venture Capital Backing, Investor Attention, and Initial Public Offerings," with Thomas J. Chemmanur and Qianqian Yu.

"Human Capital, Management Quality, and Firm Performance," with Thomas J. Chemmanur and Lei Kong.

"Expertise or Proximity in International Private Equity? Evidence from a Natural Experiment." with Thomas J. Chemmanur and Tyler Hull.

"Student Debt and Personal Portfolio Risk," with Birzhan Batkeyev and Debarshi Nandy.

"The Geography of Innovation and Innovator Flows: Do Unions Matter?" with Debarshi Nandy, Jean Claude Makolo, and Vikram Nanda.

"What do Crowds Really Want? Crowdfunding and Early Product Access." with Lucas Lohmer and Pinshuo Wang.

CONFERENCE AND SEMINAR PARTICIPATION

Presentation:
"The Cost of Financing Education: Can Student Debt Hinder Entrepreneurship?" with Pinshuo Wang.
Western Finance Association Annual Meetings (2016), Salt Lake City
Northeastern University Seminar Series (2016), Boston

"Labor Laws, Inventor Mobility, and Entrepreneurship," with Debarshi Nandy, Jean Claude Makolo, and Vikram Nanda.
NBER Productivity Lunch Seminar (2016), Cambridge
Cleveland Federal Reserve Bank Conference (2016), Cleveland
Northeastern University Seminar Series (2016), Boston

"Top Management Quality, Corporate Innovation, and Innovator Flows", with Thomas J. Chemmanur, Lei Kong, and Qianqian Yu.
American Finance Association (AFA) annual meetings (2016), San Diego.

PBC-RFS conference on Entrepreneurial Finance and Innovations around the World (2015), China.
Financial Management Association Annual Meeting (2015), Orlando.

"Risky Lending: Does Bank Corporate Governance Matter?" with Olubunmi Faleye.
American Finance Association (AFA) annual meetings (2015), Boston
Australasian Finance and Banking Conference (2010), Sydney, Australia

"Expertise or Proximity in International Private Equity? Evidence from a Natural Experiment." with Thomas J. Chemmanur and Tyler Hull.
European Finance Association (EFA) Annual Meetings (2014), Lugano

"Human Capital, Management Quality, and Firm Performance", with Thomas J. Chemmanur and Lei Kong.
NBER Productivity Lunch Seminar (2014), Cambridge
Western Finance Association annual meetings (2014), Monterey Bay

"Does Financing Spur Small Business Productivity? Evidence from a Natural Experiment", with Debarshi Nandy and Manju Puri.
Western Finance Association annual meetings (2014), Monterey Bay
Financial Intermediation Research Society annual meetings (2013), Dubrovnik, Croatia
NBER conference on Productivity, Innovation, and Entrepreneurship (2013), Cambridge
Boston Area Finance Symposium, Waltham
SFS Cavalcade (2013), Miami

"Do Local and International Venture Capitalists Play Well Together? International Venture Capital Investments and the Development of Venture Capital Markets."
NBER conference on Changing Financing Market for Innovation & Entrepreneurship (2013), Half Moon Bay
Invited Speaker - Bentley University (2013), Waltham.
NBER preconference on Changing Financing Market for Innovation & Entrepreneurship (2012), Cambridge
American Finance Association Annual Meetings (2012), Chicago
Entrepreneurial Finance and Innovation Conference (2011), Cambridge
Financial Management Association Annual Meetings (2011), Denver
Invited Speaker - Rensselaer Polytechnic University (2011), Troy
Center for Emerging Markets Seminar (2010), Northeastern University

"How Does Venture Capital Financing Improve Efficiency in Private Firms? A Look Beneath the Surface." (with Thomas J. Chemmanur and Debarshi Nandy)
Financial Intermediation Research Society Annual Meetings (2010), Florence, Italy.
Western Finance Association Annual Meetings (2009), San Diego.
Searle Center for Law at Northwestern University, Symposium on the Economics and Law of the Entrepreneur (2009), Chicago.
Triangle Census Research Data Center Conference at Duke University, Durham (2008)
Financial Management Association Annual Meetings (2008), Dallas
Northern Finance Association Annual Meetings (2008), Calgary

NBER Entrepreneurship Working Group Seminar (2008), Cambridge

"Is it the Investment Bank or the Investment Banker: A Study of the Role of Investment Banker Human Capital in Acquisitions." with Mine Ertugrul and Thomas Chemmanur.
Financial Intermediation Research Society annual meetings (2013), Dubrovnik, Croatia
American Finance Association Annual Meetings (2012), Chicago
Northern Finance Association Annual Meetings (2009), Ontario
Financial Management Association Annual Meetings (2009), Reno
Eastern Finance Association Annual Meetings (2009), Washington D.C.

"CEO Dismissal Timing and Costs of Delayed Action: Do Some Boards Act Too Late?" (with Mine Ertugrul) (New Title: "Can CEO Dismissals Be Proactive?")
Private Equity Symposium, London Business School, London (U.K.) (2008)
Boston College Seminar (2007), Chestnut Hill
Western Finance Association Annual Meetings (2007), Big Sky
European Finance Association Annual Meetings (2007), Ljubljana
Northern Finance Association Annual Meetings (2007), Toronto
Financial Management Association Annual Meetings (2007), Orlando
Eastern Finance Association Annual Meetings (2007), New Orleans

"Heterogeneous Beliefs, Short Sale Constraints, and the Economic Role of the Underwriter in IPOs." (with Thomas J. Chemmanur)
European Finance Association Annual Meetings (2008), Athens, Greece
Financial Intermediation Research Society (FIRS) Conference (2008), Anchorage
Financial Management Association Annual Meetings (2007), Orlando
Eastern Finance Association Annual Meetings (2007), New Orleans

"Universal Banking, Private Information, and Incentive Problems: What Do Ex-Post Lending Patterns Tell Us?"
Northern Finance Association Annual Meetings (2007), Toronto
European Finance Association Annual Meetings (2006), Zurich
Eastern Finance Association Annual Meetings (2007), New Orleans
Boston College Seminar (2007), Chestnut Hill
Boston College Seminar (2006), Chestnut Hill
Invited Speaker - University of Connecticut (2006), Storrs
FDIC Doctoral Workshop (2006), Washington D.C.
Financial Management Association Annual Meetings, Doctoral Consortium & Special Session (2006), Salt Lake City

"Investment Banks in Dual Roles: Acquirer M&A Advisors as Underwriters." with Mine Ertugrul
Financial Management Association Annual Meetings (2010), New York
Eastern Finance Association Annual Meetings (2010), Miami

Discussion:
Western Finance Association (2015), Seattle.
Financial Intermediation Research Society (2015), Reykjavik.

Entrepreneurial Finance and Innovation Conference (2013), Waltham.
Financial Intermediation Research Society (2013), Dubrovnik, Croatia
Entrepreneurial Finance and Innovation Conference (2011), Cambridge.
Financial Management Association Annual Meetings (2010), New York
Entrepreneurial Finance and Innovation Conference (2010), Cambridge.
Financial Intermediation Research Society Annual Meetings (2010), Florence, Italy.
Financial Economics and Accounting Conference (2009), Piscataway, NJ
Eastern Finance Association Annual Meetings (2009), Washington D.C.
European Finance Association Annual Meetings (2007), Ljubljana
Northern Finance Association Annual Meetings (2007), Toronto
Eastern Finance Association Annual Meetings (2007), New Orleans
Financial Management Association Annual Meetings (2006), Salt Lake City
Eastern Finance Association Annual Meetings (2003), Orlando
Financial Management Association Annual Meetings (2003), Denver

Session Chair:
Eastern Finance Association Annual Meetings, New Orleans (2007)

Program Committee:
Entrepreneurial Finance and Innovation Around the World Conference, Beijing, China (2016)
Financial Intermediation and Research Society, Lisbon, Portugal (2016)
Entrepreneurial Finance and Innovation Conference, Cambridge (2015)
Entrepreneurial Finance and Innovation Conference, Cambridge (2014)
Entrepreneurial Finance and Innovation Conference, Cambridge (2013)
Entrepreneurial Finance and Innovation Conference, Cambridge (2012)
Financial Management Association Annual Meetings, New York (2010)
Financial Management Association Annual Meetings, Orlando (2007)

PROFESSIONAL SERVICE
Editorship
Associate Editor – Journal of Business Research (2016 – Present)

Refereeing
Journal of Economic Geography (2016)
Review of Financial Studies (2015)
Management Science (2015)
Journal of Comparative Economics (2015)
Review of Finance (2013)
Journal of Banking and Finance (2013, 2015, 2016)
Center for Economic Studies at the U.S. Census Bureau (Research proposal review) (2011, 2013)
Journal of Financial Intermediation (2009, 2012, 2013)
Journal of Money, Credit, and Banking (2009, 2012)
Kauffman Dissertation Fellowship Program (2012, 2014, 2015)
Financial Review (2011)
Journal of Economics and Business (2008, 2009)
Quarterly Review of Finance (2011)

Financial Management (2010)

OTHER SERVICE

Finance Group Seminar Series Coordinator, 2008, 2012-2014.
Faculty Advisor, Finance and Investment Club, 2012-present.
Finance Group Awards Coordinator, 2011-present.
Boston Area Finance Symposium co-organizer, 2008- 2012.
Northeastern University School of Law, Entrepreneurship Panel Series Discussant, 2010.

HONORS AND AWARDS

Thomas Moore Faculty Fellowship, Northeastern University, 2012-2017.
National Science Foundation (NSF) Grant ($300,000) for Project Titled, "Market Access and Entrepreneurship", 2012
Center for Emerging Markets Mini Research Grant, Northeastern University, 2009.
Best Doctoral Student Paper Award at the 2007 Northern Finance Association Annual Meetings.
Outstanding Corporate Finance Paper Award at the 2007 Eastern Finance Association Annual Meetings.
Kauffman Doctoral Fellowship in Entrepreneurial Finance, 2006-2007.
AFA Travel Grant Award (Sponsored by the American Finance Association), 2007
FDIC Doctoral Student Workshop, 2006
Financial Management Association Doctoral Student Consortium and Special Session, 2006
Graduate Student Fellowship, Boston College, 2003-Present
Graduate Student Fellowship, University of Connecticut, 2001-2003
Research Grant - Single Authored Study on Investor Protection, National Stock Exchange of India, 2001

TEACHING EXPERIENCE

Associate Professor, Northeastern University

Entrepreneurial Finance, Innovation Valuation, and Private Equity (Undergraduate):2 semesters
Entrepreneurial Finance, Innovation Valuation, and Private Equity (Graduate): 2 semesters
Sustainability in Business: 1 semester

Assistant Professor, Northeastern University

Entrepreneurial Finance, Innovation Valuation, and Private Equity (Undergraduate): 2 semesters
Entrepreneurial Finance, Innovation Valuation, and Private Equity (Graduate): 3 semesters
Independent Study on Venture Capital (Undergraduate): 1 semester
Advanced Topics in Finance: Venture Capital (Graduate): 1 semester
Corporate Finance (Undergraduate and graduate): 3 semesters
Financial Management (Undergraduate): 4 semesters

Instructor, Boston College

Financial Management (undergraduate): 2 semesters

Instructor, University of Connecticut

Financial Management (undergraduate): 3 semesters
Investments (undergraduate): 1 semester

MEDIA AND OTHER EXTERNAL COVERAGE

1. "Bridging the Divide: How Business Ownership can Help Close the Wealth Gap" Report by Field at the Aspen Institute. January 2017.
2. "At the Extremes: Student Debt and Entrepreneurship," Report by Younginvincibles.org.
3. "Investing in Higher Education: Benefits, Challenges, and the State of Student Debt," Report by the Council of Economic Advisors to the President of the United States.
4. "Is Student Debt Hindering Entrepreneurship?" *Chicago Policy Review*, March 7, 2016.
5. "Why is Twitter Dying?" Radio Interview with WERS 88.9 program 'You Are Here.', Nov, 2015
6. "Study: Banking Deregulation Leads to Increased Business Productivity," *Heartland Institute.*
7. "Does Financing Spur Small Business Productivity," *Cato Institute Research Briefs in Economic Policy No. 15.*
8. "Human Capital, Management Quality, and Firm Performance," *Harvard Law School Forum on Corporate Governance and Financial Regulation*, July 31, 2014.
9. "Did U.S. Banks Deregulations Spur SEM's Productivity," *True Economics*, December 4, 2013.
10. "J.C. Penny Investors Cheer for Apple Retail Head as New CEO," *USA Today*, June 15, 2011.
11. "Study Finds Link Between Delayed CEO Ousters And Bankruptcy", *Dow Jones Newswires*, April 30, 2007.
12. "Early CEO Dismissal Helps Avoid Bankruptcy, Study Finds", *Bloomberg*, May 02, 2007.
13. "Benefits of a Better Image", *Financial Times*, June 19, 2006.

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CONTACT

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EDUCATION

Ph.D. in Economics, Northeastern University, Boston, MA — 2018 (Expected)
M.A. in Economics, Northeastern University, Boston, MA — 2013
Bachelor of Economics, Minzu University of China, Beijing, China — 2011

PUBLICATIONS

"Assessing performance of Morningstar's star rating system for equity investment" with Paul Bolster and Emery Trahan, *Journal of Economic & Financial Studies*, 2016, 04(01): 11-22

WORKING PAPERS

"The Cost of Financing Education: Can Student Debt Hinder Entrepreneurship?" with Karthik Krishnan
(Revise and resubmit from *Management Science*)
"The Impact of Unbundling of Ancillary Service on Price in Airline Industry"
"What Do Crowds Really Want? Crowdfunding and Early Product Access" with Karthik Krishnan and Lucas Lohmer

RESEARCH IN PROGRESS

"The Impact of Student Debt on Venture-Backed Entrepreneurship and Local Economic Growth: Evidence from 'No-Loans' Financial Aid Policies" with Karthik Krishnan

CONFERENCE AND SEMINAR PRESENTATIONS

"What Do Crowds Really Want? Crowdfunding and Early Product Access" with Karthik Krishnan and Lucas Lohmer
Entrepreneurial Finance and Innovation Conference (2015), Waltham, MA
"The Cost of Financing Education: Can Student Debt Hinder Entrepreneurship?" with Karthik Krishnan
Western Finance Association Annual Meetings (2016), Park City, UT
Southwestern Finance Association Annual Meetings (2017), Little Rock, AR

HONORS AND AWARDS

Morris A. Horowitz Award for Excellence in Economics, Northeastern University, 2013
Omicron Delta Epsilon International Honor Society in Economics, Northeastern University, 2013
Achievement Scholarship, Minzu University of China, 2008 and 2009

TEACHING EXPERIENCE

Harvard University, Cambridge, MA

Teaching Assistant for Quantitative Methods in Economics and Business (undergraduate)
Introductions to Econometrics (undergraduate)

Northeastern University, Boston, MA
Instructor for Recitation for Principles of Macroeconomics
Teaching Assistant for Macroeconomic Theory (undergraduate)
Microeconomic Theory (undergraduate)
Industrial Organization (graduate)

WORK EXPERIENCE

Operations Analyst, Harvard Business School Publishing, Watertown, MA, Spring 2013
Grant Writer, Early Investors Inc., Braintree, MA, Summer 2012