Jiayi Bao
Doctoral Student
Business Economics and Public Policy Department

University of Pennsylvania
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March 23, 2016

Dear NBER Committee,

I am a rising third year student in the Applied Economics PhD Program under the Business Economics and Public Policy Department at the Wharton School, University of Pennsylvania. I am interested in attending the 9th Entrepreneurship Research Boot Camp hosted by the NBER Entrepreneurship Working Group.

Please find in this application package my curriculum vitae, a list of all my current and complete PhD courses, a motivation essay, and a recommendation letter from Laura Huang, who is an Assistant Professor of Management and Entrepreneurship at the Wharton School, University of Pennsylvania.

Thank you for your consideration. I look forward to hearing back from you.

Sincerely,



Jiayi Bao

JIAYI BAO

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EDUCATION

The Wharton School of the University of Pennsylvania — Philadelphia, PA
Business Economics and Public Policy Department
Candidate for Doctor of Philosophy (Ph.D.) in Applied Economics — Start Date: August 2014

Vassar College — Poughkeepsie, NY
B.A. in Economics and B.A. in Mathematics — Sep 2010 - May 2014
General Honors, Departmental Honors for Economics, Departmental Honors for Mathematics
- Cumulative GPA: 3.99/4.0; Major GPAs: 4.0/4.0; GRE: 1560 + 5.5

The University of Oxford, Worcester College — Oxford, UK
Visiting Student in Economics, Mathematics — Jan – Jun 2013
- GPA U.S. Equivalent: 4.0/4.0

FIELDS OF INTEREST

Primary Fields:
Behavioral Economics, Applied Microeconomics, Organizational Economics, Entrepreneurship

PUBLICATIONS

Bao, Jiayi, and Ho, Benjamin (2015). "Heterogeneous effects of informational nudges on pro-social behavior." *The BE Journal of Economic Analysis & Policy* 15 (4): 1619-1655.

WORKING PAPERS & WORK IN PROGRESS

Bao, Jiayi. "Equality and Equity in Employee Compensation."

Bao, Jiayi, and Wu, Andy. "More is Less? Why Do Firms Offer Unlimited Vacation?"

Bao, Jiayi, Rees-Jones, Alex, and Shepard, Mark. "Dual-Process Mental Accounting and the Consumption/Savings Behavior of Retirees."

Bao, Jiayi, and Ho, Benjamin. "Planning: Multi-Tasking Agents & Labor Market Implications."

RESEARCH & TEACHING EXPERIENCE

Ford Scholars Research Fellowship, Vassar College Summer 2012
- Developed behavioral economic models and experimental measures in the areas of conscientiousness, culpability, trust & legal systems, and legitimacy

Research Assistant, Department of Economics at Vassar College Sep 2011 – Dec 2012
- Summarized econometric models on the role of co-authorship in academic productivity
- Analyzed the historical legal framework for ticket scalping in U.S. for the past 90 years

Teaching Assistant, Department of Economics at Vassar College Sep 2013 – May 2014
- Courses: Introduction to Macroeconomics, Probability & Statistics (Stata)

HONORS, AWARDS & SCHOLARSHIPS

- Doctoral Fellowship, The Wharton School at The University of Pennsylvania From 2014
- I.S.E.O. Summer School Scholarship, ISEO June 2014
- The Virginia Swinburne Brownell Prize in Political Economy, Vassar College May 2014
- The Agnes Reynolds Jackson Prize, Vassar College May 2014
- Plenary Speaker at National Collegiate Research Conference, Harvard University Jan 2014
- The DeGolier Prize for Academic Excellence (Highest GPA), Vassar College 2013
- Meritorious Winner, Mathematical Contest in Modeling, COMAP, USA 2011
- Lui & Wan Foundation Scholarship, Vassar College 2010 – 2014

OTHER PROFESSIONAL EXPERIENCE

- **Pacific Investment Management Company (PIMCO)** Newport Beach, CA
Account Management*, Summer Research Analyst* Jun – Aug 2013

- **Merrill Lynch** New York, NY
Global Wealth & Investment Management, *Research Intern* Sep – Dec 2012

- **Mizuho Corporate Bank** Shanghai, China
Risk Management, *Intern* Aug – Sep 2012

SKILLS & ACTIVITIES

Technical Skills: Stata, Matlab, R, Python, Mathematica, LaTex, Reuters, Bloomberg
Languages: fluency in English, Chinese; conversational in Japanese
Interests: Golf, Chinese Dance, Chinese Zither, Accordion, Guitar, Percussion, Fine Arts

List of Current and Completed PhD Courses

Economics (General)
Microeconomic Theory I
Microeconomic Theory II (Game Theory, Information Economics, and Mechanism Design)
Econometrics I (Fundamentals)
Econometrics II (Time Series)
Econometrics III (Advanced Techniques of Cross-Section Econometrics)

Behavioral & Experimental Economics
Experimental Economics
Decision Making & Behavioral Economics in the Wild (Field Experiment)
Judgment and Decision Making

Management & Labor
Personnel Economics (Organizational Economics & Field Experiment)
Economics of Labor

Finance
Corporate Finance and Financial Institutions
Empirical Methods in Corporate Finance
Financial Economics
Intertemporal Macroeconomics and Finance

Motivation Essay

Jiayi Bao

I am a rising third year student in the Applied Economics PhD Program under the Business Economics and Public Policy Department at the Wharton School of the University of Pennsylvania. I am interested in attending the Entrepreneurship Research Boot Camp since I am about to begin my dissertation research in the areas of entrepreneurial economics and entrepreneurial finance. I would like to use this as an opportunity to gather feedback and refine my current work, to further develop my research interests, and to gain exposure to top-notched scholars in the field.

My main research projects specifically address topics of entrepreneurial economics, and I hope to be part of the 9th ERBC to gather further feedback and improve the projects. I am currently focusing on high skilled labor markets and employment relationships in entrepreneurial environments and through the lenses of organizational and behavioral economics. In particular, I study how firms use untraditional human resource practices such as employee equity compensation and unlimited vacation policy in the hiring, retention, and performance of skilled employees. My research also takes an individual perspective and examines behavioral responses from entrepreneurial workers who may have unique social preferences regarding inequality and status or may be subject to heuristics and biases. My work exploits a variety of methods including theoretical modeling, econometric analysis of archival data, and experimental design.

In my recent research project, I explore the role of equity ownership in motivating productivity in high-growth entrepreneurial startups when inequality aversion and social status concerns may be present among employees. In particular, inequality in different components of the employee reward structures may lead to heterogeneous worker responses and different aggregate organizational performance. I formalize the hypothesis in my theoretic work that combines insights from canonical models of mental accounting and inequality aversion. In a new behavioral model of domain-contingent inequality aversion, I postulate that firms use equity to induce a sense of ownership among entrepreneurial workers, who in turn care more about their relative status and dislike inequality more in the formal equity ownership rather than in the cash salary. Moreover, I apply econometric analysis to archival data of startup compensation packages for skilled new hires to shed light on how cash and stock rewards are distributed across non-founder employees of various ranks and functions. I find that the empirical pattern – a compression in equity compensation rather than in salary – is consistent with my behavioral theory but are largely inconsistent with traditional theories on why firms offer equity. To supplement my theoretical work and econometric analysis, I also conduct IRB-approved laboratory experiments to test the predictions of my theory. My preliminary results suggest that inequality reduces worker effort provision at the aggregate level, and that teams experiencing inequality in equity perform worse than teams experiencing inequality in salary. Moreover, workers who are compensated less respond more to inequality than

workers who are compensated more. I look forward to sharing my findings with the ERBC participants and faculty and getting suggestions for the next steps.

In another ongoing project, I study the short-term and long-term impact of unlimited vacation policy – an increasingly popular practice in innovation-focused entrepreneurial firms to encourage work-life balance. I first plan to test my hypothesis that unlimited vacation makes existing employees take less vacation in the short run. Second, I want to identify the underlying mechanism of such an effect. My theory is that the traditional limit on vacation days serves as a reference point for workers and not making full use of the available days may be perceived as losses, whereas unlimited vacation days are more likely to be viewed as gains. Loss aversion suggests that people find it more important to avoid losses than to acquire gains, so people may take more days off when there is a limit. I hope to evaluate this explanation against other possible channels. Third, I will explore the long run effect of unlimited vacation policy on the composition of workplace. In particular, I am interested in whether such policy signals autonomy and attracts more entrepreneurial workers. Currently, I am in the phase of designing a field experiment for this project and finding potential corporate partners. I believe the ERBC will be a great learning opportunity for me to gain insights from experienced researchers in the field and reflect on my own method.

Another strand of my research complements my main projects from an entrepreneurial finance perspective. I study how human resource management may depend on reasons other than the consideration of worker preferences in the entrepreneurial space. In particular, I am interested in how liquidity constraints, funding events, and investor types affect the structuring of compensation packages and the use of innovative practices.

Through the ERBC, I want to expand and deepen my understanding of the areas of entrepreneurial economics and finance to better develop my dissertation research. I am eager to meet Professor Nicholas Bloom as I plan to explore how modern management practices are carried out in risky environments to improve firm productivity. I would be thrilled to talk to Professor Thomas Hellmann as I want to apply behavioral insights to contract theory in entrepreneurial settings. I am excited to discuss with Professor Antoinette Schoar as I intend to conduct experiments in the field to better identify causal effects. I also look forward to learning from Professor Scott Stern as I aim to produce research that has practitioner implications for start-ups and growth firms. I hope to bring a unique perspective to the five-day discussion with faculty members as well as fellow students and build long-lasting relationships for future research collaboration.

Laura Huang
Assistant Professor of Management

Management Department
The Wharton School
University of Pennsylvania

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3620 Locust Walk
Philadelphia, PA 19104

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March 24, 2016

Dear NBER Committee:

I enthusiastically recommend Jiayi Bao as a candidate for the NBER Entrepreneurship Research Boot Camp. Jiayi Bao is a rising third year student in the Applied Economics PhD program at Wharton. I supervised her second year research project, where she displayed a genuine interest in the economic study of entrepreneurship, and she shows promise for carrying out promising projects in the area. Jiayi is an excellent fit for the Entrepreneurship Research Boot Camp.

Jiayi is particularly interested in the economics of entrepreneurship and entrepreneurial finance, which she demonstrates through her academic performance and her interaction with faculty. Throughout her coursework in economics, management, and corporate finance, she has proposed research ideas on the topic of entrepreneurship that has inspired class discussions. She is also proactive in terms of approaching faculty across different departments to get feedback on her ideas. I first interacted with her when she reached out to me about her research idea on how entrepreneurial identity affects worker incentives and contract sorting, and I subsequently become an advisor for her second year research project.

Jiayi shows promise in her research agenda. Her second year research project directly addresses compensation schemes in startup settings for early employees, and combines insights from entrepreneurial finance through the lens of organizations and insights from behavioral economics through the lens of entrepreneurial individuals. In particular, she looks at how distribution of equity ownership among workers affects individual effort and organizational performance in entrepreneurial settings. In addition to this project, she is also interested in other novel human resource practices in entrepreneurial settings such as unlimited vacation policies. Using a mixture of econometric analysis of archival data, theoretical modeling, and experimental design in her work, Jiayi has demonstrated a comprehensive set of research skills, along with academic rigor, originality, and ambition.

Jiayi would contribute tremendously to the Boot Camp with her passion for research in entrepreneurship. If you have any further questions with regard to her background or qualifications, please do not hesitate to contact me.

Sincerely,



Laura Huang
Assistant Professor of Management