Applicant: Hedieh Rashidi Ranjbar
Third-year PhD student in Finance
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Reference: Professor Nadya Malenko
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03/21/2021

Ms. Brett Maranjian
NBER
Cambridge
Massachusetts, USA
Subject: NBER Entrepreneurship Research Boot Camp 2021

Dear Madam,

I am writing to apply to the 14th NBER Entrepreneurship Research Boot Camp. I believe that this boot camp is a valuable opportunity for me to become familiar with leading research topics in entrepreneurial finance and to get feedback on my own research from experts in this field.

I have attached my CV, the list of PhD-level courses that I have taken, and an essay on why I am eager to attend this boot camp. My recommendation letter will be sent separately by Nadya Malenko, Associate Professor of Finance at the University of Michigan Ross School of Business. I hope that my background and personal interest qualify me for attending this boot camp.

Sincerely,

Hedieh Rashidi Ranjbar
Ph.D. Candidate, University of Michigan

Last updated: March 21, 2021

Hedieh Rashidi Ranjbar

Contact Information

University of Michigan
Ross School of Business
701 Tappan Ave,
Ann Arbor, MI 48109

Phone: (734) 757-0666
E-mail: hrashidi@umich.edu

Education

University of Michigan, Ann Arbor, MI, USA — 2018 – 2023 (expected)
Ph.D., Finance

University of Oklahoma, Norman, OK, USA — 2016-2018
First- and second-year Ph.D. courses in Finance

University of Milano-Bicocca, Milan, Italy — 2015-2016
First-year Ph.D. courses in Mathematical Finance

Amirkabir University of Technology, Tehran, Iran — 2009 – 2012
M.Sc., Financial Engineering

Alzahra University, Tehran, Iran — 2005 – 2009
B.Sc., Industrial Engineering

Research Interests

Entrepreneurial Finance, Corporate Finance

Awards and Fellowships

- Ranked among the top 0.5% in the national entrance exam for Iranian universities, Iran, 2004
- Recognized as an Alzahra University selected (top) student in 2008
- Graduated among the top 10% of Industrial Engineering students at Alzahra University in 2009
- Qualified as an exceptional talent and awarded to enter the Master program in Industrial Engineering at Amirkabir University of Technology in 2009
- Ranked 3rd among 215 students in the Master program in Industrial Engineering and 1st among 12 students in the Financial Engineering specialization at Amirkabir University of Technology
- Doctoral Scholarship for the Ph.D. program in Mathematical Finance from the University of Milano-Bicocca, 2015-2018.
- Graduate Assistant Financial Award, University of Oklahoma, 2016-2021.
- Ben Barnett Memorial Scholarship, University of Oklahoma, 2016-2021.
- Finance Division Annual Scholarship, University of Oklahoma, 2016-2021.
- Robberson and Wethington Scholarship, University of Oklahoma, 2017.
- Doctoral Scholarship for the Ph.D. program in Finance from the University of Michigan, 2018-2023.

Teaching Experience

Teaching Assistant at the University of Oklahoma, Norman, OK

- Investments (Undergraduate course) with Prof. Tor-Erik Bakke, Spring 2017
- Derivatives (MBA course) with Prof. Pradeep Yadav, Spring 2017
- Fixed Income (MBA course) with Prof. Pradeep Yadav, Spring 2017
- Investments (Undergraduate course) with Prof. Pradeep Yadav, Fall 2017

Instructor at the University of Michigan, Ann Arbor, MI

- Financial Management (FIN 300), Undergraduate course Winter 2021

Research Experience

- Research Assistant to Toni M. Whited 2018-2019

Publications

- Hedieh Rashidi Ranjbar, Abbas Seifi, 2015, "A path-independent method for barrier option pricing in hidden Markov models", Physica A 440, 1-8.

Working Paper

"Regulation A+ Crowdfunding"

Abstract: Using a hand-collected data set on the Regulation A+ filings, I provide detailed information on the age, size, number of employees, financial statement items, and industrial and geographical distributions of companies that use Regulation A+. Testing the effect of Regulation A+ on the local economy, I find a small negative correlation between the amount raised through this method of financing and ensuing unemployment rate. In addition, I investigate whether this new method of financing is substituting or complementing venture capital (VC) financing. The data analysis shows that Regulation A+ facilitates access to financing in regions and industries that could not attract VC-financing ex-ante. Finally, I test whether successful Regulation A+ offerings in a region can attract ensuing VC investments through decreasing uncertainty and search cost, and I find a positive and significant correlation between the two.

Work in Progress

"Welfare Effects of Equity Crowdfunding"

Workshops

- 2016 University of Bologna Spring School in Finance
  - Counterparty Risk, Funding and Central Clearing
  - A Unified Approach to Funding Costs and Collateralization: risk-neutral pricing with multiple curves
- 2017 Mitsui Center Summer School on Structural Estimation in Corporate Finance

Technical Skills

Programming Languages: FORTRAN, Python
Statistical Softwares: Stata, SAS, R
Numerical Analysis Softwares: MatLab

Professional Experience

Iran Industries Investment Company, Tehran, Iran
Capital Market Analyst Dec 2011- Feb 2012, April 2012-June 2013, Jan 2014- May 2015

- Responsible for fundamental analysis of Iran Stock Exchange-listed companies

Iran Investment Company, Tehran, Iran
Project Expert Jun 2008 – Oct 2008

- Responsible for feasibility study of investment proposals using Comfar III Expert software
- Responsible for project control using MSP software

Reference

Professor Nadya Malenko
Associate Professor of Finance
R5322, Ross School of Business, University of Michigan
701 Tappan Street, Ann Arbor, MI 48109
nmalenko@umich.edu

Completed PhD Courses

Courses taken at the University of Milano-Bicocca (GPA: 30/30):

- Optimization and Numerical Analysis
- Probability and Stochastic Processes
- Functional Analysis
- Statistical Inference I, II, III, IV

Some of the Courses taken at the University of Oklahoma (GPA: 4/4):

- Financial Markets and Institutions
- Corporate Finance I and II
- Introduction to Finance Theory
- Advanced Econometrics

Courses taken at the University of Michigan (GPA 3.8/4):

- Mathematics for Economists
- Microeconomic Theory I
- Microeconomic Theory II
- Microeconomic Theory III
- Microeconomic Theory IV
- Econometric Analysis I
- Econometric Analysis II
- Fundamentals of Investment Decisions with Symmetric Information
- Empirical Asset Pricing
- Continuous Time Asset Pricing
- Structural Estimation
- Macroeconomic Theory I
- Macroeconomic Theory II
- Industrial Organization and Public Policy II
- Corporate Finance
- Theoretical Models in Finance I
- Theoretical Models in Finance II
- Research Topics in Finance
- Teaching Fundamentals

Hedieh Rashidi Ranjbar
PhD candidate in Finance
University of Michigan

Essay for application to the NBER Entrepreneurship Research Boot Camp 2021

Exploring different research areas to find those that fit my interests most, I have found entrepreneurial finance intriguing because I believe that entrepreneurship plays an important role in creating jobs, spurring innovation, and expediting economic growth. Having grown up in a country that struggles with a high unemployment rate, I understand the value of entrepreneurship and I am eager to investigate how policies can facilitate entrepreneurial activities and strengthen their outcomes in the forms of creating jobs, increasing impactful innovative activities, increasing equality, and facilitating economic growth.

I am particularly interested in exploring how new methods of alternative financing, such as Regulation A+ offerings and return-based (debt or equity) crowdfunding, can help alleviate frictions that exist in the market for early-stage financing. Not only informational frictions decrease the chances of raising capital by small companies but also geographical and industrial frictions limit access to financing by startups. To this end, I have been working on two projects on this subject. One studies the characteristics and implications of Regulation A+ offerings, and the second examines the welfare implications of equity crowdfunding.

In my paper on Regulation A+, I use hand-collected data on Regulation A+ offerings to document the characteristics of companies that use this new method of financing. Regulation A+ allows private U.S. and Canadian small and medium-sized companies to raise up to $50M per year from both accredited and non-accredited investors publicly in the form of debt or equity. I observe that the majority of companies that use this method of financing are in regions and industries that could not attract VC-financing ex-ante. This observation shows that Regulation A+ alleviates industrial and geographical frictions that exist in the market for early-stage financing. In addition, the median of $0.5 million in total assets for companies that raised capital successfully through Regulation A+ makes it less probable that these companies could receive bank loans. Finally, because of the large amount of capital (up to $50M) that can be raised using Regulation A+, it is not possible to compare raising capital from accelerators and angel investors with raising capital using Regulation A+. In summary, the data shows that Regulation A+ is filling an important gap in the market for early-stage financing that can potentially contribute to entrepreneurial development in rural America.

I also investigate the effect of Regulation A+ offerings on the local economy and on attracting professional investors to industries and regions that previously received low levels of funding. I observe a negative correlation between the amount raised through Regulation A+ and unemployment rate in a region, as well as a positive correlation between the number of successful Regulation A+ offerings and ensuing VC-financing in a region. On the one hand, these observations are, respectively, consistent with the idea that successful Regulation A+ offerings increase economic activity and employment in a region, and the idea that they decrease uncertainty and search costs for VCs and attract them to investment opportunities in new geographical locations. On the other hand, there may

be some confounding variables (such as an increase in investment opportunities in a location) that could affect both the dependent and the independent variables. Currently, I am working on an IV approach to investigate possible causal relationships.

I am also working on a project that aims to estimate the welfare effects of equity crowdfunding. Equity crowdfunding allows entrepreneurs to raise capital from non-accredited investors (the crowd). This innovation in the market for early-stage financing has both pros and cons for entrepreneurs and investors. Entrepreneurs may choose to raise capital through crowdfunding because the cost of capital may be lower, and they can gather information about their products from the investors. However, by raising capital from the crowd instead of venture capitalists (VCs), entrepreneurs lose the chance of benefiting from professional services provided by VCs such as monitoring, strategic advice, help in bringing products to the market, and assistance in recruitment of top managers. From the investors' perspective, equity crowdfunding platforms provide investors with access to new investment opportunities and sometimes new products, and the possibility of participating in the community. However, investors on these platforms are exposed to a high level of risk due to information asymmetry and adverse selection. For example, because financing through equity crowdfunding does not provide access to reputable investors with valuable networks, entrepreneurs with high quality inventions may not have incentives to participate in the equity crowdfunding platforms. In addition, after funding a project, investors face moral hazard problems because the entrepreneur can act towards his short-term opportunistic goals and not exert a high level of effort. In my research, I am interested in considering these aspects of participating in equity crowdfunding platforms and in understanding whether the introduction of equity crowdfunding has improved the welfare of entrepreneurs and investors. One of the main empirical challenges in estimating the effect of equity crowdfunding on welfare is the absence of a counterfactual. I plan to use a structural estimation approach to overcome this problem.

I am eager to participate in the boot camp because I believe it is an important step toward my goal of doing impactful research in the field of entrepreneurial finance. I would like to become more familiar with the seminal work done in this area and important questions that have remained unanswered and learn from leading scholars in the field. I have been attending the WEFI lecture series, and I consider the boot camp as the natural next step towards gaining a broader and more comprehensive view of the field and leading research topics. In addition, the boot camp would give me the chance to network with other PhD students and get feedback on my research. I hope that my interest in the field of entrepreneurial finance, my current work in the area of alternative methods of financing, and my academic background qualify me to attend the boot camp.

Hedieh Rashidi Ranjbar

March 2021

Nadya Malenko
Associate Professor of Finance
Ross School of Business, University of Michigan
nmalenko@umich.edu

Professor David Robinson
Fuqua School of Business, Duke University

March 20, 2021

Recommendation Letter for Hedieh Rashidi Ranjbar

Dear David,

I am writing to enthusiastically recommend **Hedieh Rashidi Ranjbar** for the 2021 NBER Entrepreneurship Research Boot Camp. Hedieh is a third-year PhD student in Finance at Michigan Ross. She has recently advanced to candidacy following the submission and presentation of her second-year paper and successful completion of her PhD coursework.

Hedieh is very interested in entrepreneurship, and all her ongoing projects and research ideas are in this area. Her current research interests focus on new methods of alternative financing, such as equity and debt crowdfunding and Regulation A+ financings. She has a working paper on the characteristics and implications of Regulation A+ offerings and is working on a new project on equity crowdfunding.

In particular, for her Regulation A+ paper (which was her second-year paper), Hedieh has performed substantial data collection and analysis of Regulation A+ offerings, exploring the characteristics of firms that use this method of financing and trying to understand the implications of such financings for firms, investors, and the local economy. Her main current conclusion is that Regulation A+ provides access to financing to firms that would otherwise not be able to raise capital through other sources, such as bank financing, angel financing, as well as VC capital (she

shows that most companies using A+ financing are located in industries and regions that do not typically attract VC-financing). Thus, Regulation A+ has the potential to alleviate the frictions that prevent access to capital to young entrepreneurial firms and could successfully complement other methods of financings. In her current work on this paper, Hedieh is exploring the subsequent performance of A+ offerings and is also trying to understand whether successful A+ offerings have any causal impact on economic activity in the local economy, as well as future VC investments in that area.

In addition to her Regulation A+ paper, Hedieh is working on a project that studies the welfare effects of equity crowdfunding. In particular, she is interested in the effects of Title III of the JOBS Act, which went into effect on May 16, 2016 and allows the "crowd" to invest in startups' equity through online platforms. Opening up this market to non-accredited investors has both costs and benefits, and Hedieh would like to understand their combined effect on the welfare of entrepreneurs and investors. She is trying to tackle this difficult but important question with the help of a structural model.

Hedieh has demonstrated a strong interest in entrepreneurship: in addition to working on her own research, she has been attending the WEFI events and has also presented and discussed papers on entrepreneurship in reading groups in our finance department. I have been part of these reading groups, and Hedieh has been actively participating and offering her views on other papers we discuss, so I have no doubt that she would contribute to the discussions at the boot camp. I hope that Hedieh's work on new methods of entrepreneurial financing, her enthusiasm about the subject, and her international experience (she received her undergraduate and master's degree in Iran, worked there as a stock market analyst for a few years, and also spent a year in Italy) will enhance the group discussions if she is admitted.

On a personal note, Jonathan Zandberg, whom I have been advising at Boston College, has told me on multiple occasions that the boot camp was the best academic experience he has ever had. So I very much hope that Hedieh will be given this opportunity as well, as she will benefit tremendously from it.

Please feel free to contact me if you have any questions.

Sincerely,



Nadya Malenko