March 27, 2019

Cover Letter

To whom it may concern,

My name is Weiran Deng, fourth year PhD student in Economics at the University of Southern California. I have strong research interests in Entrepreneurial Finance.

Fernando Zapatero, Professor of Finance and Business Economics at USC Marshall Business School, is my advisor. He will write recommendation letter for me and submit in a separated email.

My CV, list of PhD courses, and the essay are presented in the next pages in order.

Thank you very much for your time. I sincerely wish to attend 2019 NBER Entrepreneurial Research Boot Camp. Looking forward to your reply.

Weiran Deng

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WEIRAN DENG

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EDUCATION

Ph.D. Economics, University of Southern California *2015 - present*
M.Sc. Global China Studies, Hong Kong University of Science and Technology *2014*
B.A. Economics, Shandong University *(Dual degree with MSc at HKUST) 2014*

Fields of Expertise — Financial Economics, Empirical Industrial Organization

RESEARCH

Working Papers

"Do M&A Affect Patent Inventors' Mobility and Productivity?", with Yongxiang Wang

"Evaluating Regulation on Vertical Integrations in the U.S. Television Industry", with Simon Wilkie

"Do Technology Maturity and Business Model Affect Startup Financing?", with Andrea Belz

Work in Progress

"Investment in Private Companies and Wealth Inequality in The New Economy"

WORK EXPERIENCE

USC Viterbi Technology Innovation and Entrepreneurship May 2018 - July 2018
Research Assistant

HKUST Institute for Emerging Market Studies November 2013 - May 2015
Research Assistant

TEACHING EXPERIENCE

Teaching Assistant, USC Department of Economics
Principle of Microeconomics *Fall 2016, Spring 2017, Fall 2017, Spring 2018, Spring 2019*

Economics of Financial Markets *Fall 2018*

International Trade *Fall 2018*

TECHNICAL STRENGTHS

Computer Languages	R, Stata, Python
Software & Tools	LaTeX, Excel, Word, Powerpoint, GitKraken
Business Database	Bloomberg, Compustat, Capital IQ, CRSP, SDC Platinum, PitchBook
Machine Learning	Summer School Certificate from CEMFI

CORE COURSES

Fields	**Methodologies**
Corporate Finance	Program Evaluation
Asset Pricing	Applied Econometrics
Financial and Monetary Economics	Big Data Econometrics
Industrial Organization	Advanced Quantitative Methods

ACADEMIC PRESENTATIONS

12th Annual All-California Labor Economics Conference October, 2018

USC Economics PhD Student Brown-bag Seminar October, 2018

13th Annual Economics Graduate Student Conference October, 2018

Los Angeles Conference in Applied Economics November, 2018

LEADERSHIP EXPERIENCE

Brown-bag Seminar Fall 2018 -
Organizer *USC Department of Economics*

Mainland Student and Scholars Society August 2014- May 2015
Public Relations Executive *HKUST*

Center of Academic Service February 2012 - June 2013
Executive Chairman *Shandong University*

Association of Economic Enthusiasts September 2011 - June 2012
President *Shandong University*

Editorial Department of "The Cornerstone" September 2011 - June 2012
Chief Editor *Shandong University*

EXTRACURRICULAR ACTIVITIES

Registered Yoga Teacher

Junior Wine Executive

PhD in Economics Advisement: Spring 2019

Surname: Deng **Given Name:** **Weiran** **USC ID**: 6721996843

Name(s) of Advisor(s): Fernando Zapatero (main advisor), Simon Wilkie, Guofu Tan, Joshua Aizenman, and Andrea Belz
Qualifying Exam Date: 12/06/2018

Completed Courses in Chronological Order (oldest term at the top, last term at the bottom):

Term	Course Code	Course Title	Units
Fall 2015	ECON-611	Probability and Statistics for Economists	4.0
Fall 2015	ECON-601	Microeconomic Theory 1	4.0
Fall 2015	ECON-602	Macroeconomic Theory 1	4.0
Spring 2016	ECON-609	Econometric Methods	4.0
Spring 2016	ECON-603	Microeconomic Theory 2	4.0
Spring 2016	ECON-605	Macroeconomic Theory 2	4.0
Fall 2016	FBE-652	Financial Economics 1	3.0
Fall 2016	ECON-615	Applied Econometrics	4.0
Fall 2016	ECON-593	Practice in Teaching the liberal Arts	2.0
Spring 2017	POIR-599	Advanced Quantitative Methods	4.0
Spring 2017	FBE-654	Empirical Research Methods in Finance	3.0
Spring 2017	FBE-655	Financial Economics 3	3.0
Fall 2017	ECON-680	Industrial Organization	4.0
Spring 2018	ECON-599	Big Data Econometrics	4.0
Spring 2018	ECON-673	Program Evaluation	4.0
Spring 2018	ECON-599	Financial and Monetary Economics	4.0

Current Courses:

Term	Course Code	Course Title	Units
Fall 2018	ECON-681	Economics of Regulated Industry	4.0
Fall 2018	ECON-538	Value and Social Analysis	4.0

Spring 2019 Courses:

Term	Course Code	Course Title	Units
Spring 2019	ECON-688	Empirical Industrial Organization	4.0
Spring 2019	ECON-694	Seminar in Dynamic Economics	2.0

Essay for Application of NBER Entrepreneurship Research Boot Camp 2019

Weiran Deng

I'm keen on understanding how startups emerge, survive, and grow big with the perspective from both Finance and Industrial Organization.

My working paper with Andrea Belz, Vice Dean of USC Viterbi Technology Innovation and Entrepreneurship, directly addresses a question which is key to entrepreneurship: do technology maturity and business model development affect startup financing? We use proprietary survey data on entrepreneurs who are students from university and were running business with high-technology. We find that entrepreneurs are more likely to invest in their own startups once the technology reaches "prototype ready" level. We also find that outside investors (including venture capitalists, angel investors, banks, and endowments) are more likely to invest in startups with better-developed business models.

In my dissertation, I ask: does difference in investment opportunity among individuals generate heterogeneity of returns on financial assets. I particularly focus on the investment opportunity in private capital market that is only accessible to "accredited investors". I'm trying to figure out the impacts from this SEC regulation through fully understanding private equities and private companies. The research is ongoing and I'm sure that I will benefit from exchanging ideas with others during the boot camp.

I have initiative passion on things shaping the future of the world. That’s why throughout years while I'm in PhD program, my research is centered around innovation. Entrepreneurship is often how innovation has direct impacts on real world. I'm excited about things experienced by startups who are the riskiest entities while growing the fastest.

Be an expert in private market is my career goal. NBER Entrepreneurship Research Boot Camp is the best opportunity for me to build up solid foundation in this field and refresh my understanding to many related issues. I wish to learn from, and to meet and talk with other scholars that share the same research interests with me. It will be a pleasure for me to read the syllabus of over 50 papers prior to the beginning of the ERBC. I’m sincerely looking forward to this great research event.

USC Marshall
School of Business

FINANCE AND BUSINESS ECONOMICS DEPARTMENT
Fernando Zapatero
Robert G. Kirby Chair in Behavioral Finance
Professor of Finance and Business Economics

March 25, 2019

To Whom It May Concern,

This is a recommendation letter for Weiran Deng, a fourth year student in the Economics Department here at USC. I write as her dissertation advisor.

I met Weiran two years ago. At the time I was helping Professor Andrea Belz, Vice Dean for Innovation in the School of Engineering, to set up a cluster of students (a "lab") with the mandate of studying innovation financing, especially the impact of government grants on innovation and business development. This is a talented group that consists of graduate and undergraduate students from different disciplines, mainly Economics and Computer Science. Weiran joined the group from the beginning, and soon thereafter asked me to be her advisor.

Her research interests are at the intersection of entrepreneurship, applied microeconomics and finance. She already has three working papers in her portfolio. She has presented all three in different workshops and PhD conferences. These papers are a good representation of her interests and abilities. They are coauthored with faculty members at USC, from the Economics Department (Simon Wilkie), from my department (Yiongxian Wang), and from the School of Engineering (Andrea Belz). The first paper is on empirical industrial organization, the second paper on corporate finance/innovation, and the third on entrepreneurship and innovation. The last paper –developed in the context of the lab— exploits a very interesting database of a new program funded by NSF to help university innovators to establish businesses –the name of the program is I-Corps and has nine nodes in the country; Andrea Belz is the director of the LA Node that includes USC, UCLA and Caltech.

In addition, during the last six months Weiran has made substantial progress in her job market paper project. Her goal is to study whether the current framework of access to private equity investments, and especially venture capital funds, is a factor in the increase in equality. Her interest is based on some evidence that only the wealthiest and more established venture capitalists have access to the most promising startups or to the funds that get access to the most promising startups, and through this channel the wealth gap between them and the median investor has increased because of the large difference in

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returns. It is possible that a similar argument applies to hedge funds. This project has required a lot of data hunting and Weiran –who is very persistent—is getting close to gathering what she needs to start running comprehensive tests.

Weiran is a very good econometrician, with both a command of econometric theory and the ability to handle large databases with ease. Furthermore, she has some solid foundations on economic theory, especially microeconomics. She is intelligent, very hard working and resilient. Most scholars would probably have given up on her project, given the difficulty to obtain the necessary data. Not Weiran, who takes setbacks as purely informational and immediately looks for alternatives.

Weiran has a very pleasant personality. She is polite and cooperative, and also determined, with a strong personality. In the entrepreneurship lab she has worked in several projects with other students, both graduates and undergraduates, and has always exhibited an excellent team-player attitude, accepting the leadership role, when required.

Given her work and participation in the lab, as well as her work on her dissertation, Weiran has a good knowledge of entrepreneurial finance, and is familiar with the relevant databases. At this point in her dissertation, she would benefit tremendously from participating in the Entrepreneurship boot camp. Additionally, she would also be able to contribute, especially on the financial and funding dimensions. She would be very active, participate in discussions, and be a source of other positive externalities, as described in this letter.

I recommend her in the strongest possible terms. If accepted, she will not disappoint.

Please do not hesitate to contact me if you have questions or need me to elaborate on any particular point.

Sincerely,



Fernando Zapatero
Robert G. Kirby Chair in Behavioral Finance
Professor of Finance and Business Economics