National Bureau of Economic Research (NBER)
1050 Massachusetts Avenue
Cambridge, MA 02138

31 March 2014

Dear NBER Entrepreneurship Research Boot Camp Committee,

I am writing to submit my application for the 2014 NBER Entrepreneurship Research Boot Camp. I am a third year PhD in finance student from Singapore Management University's Lee Kong Chian School of Business. I am very interested in research on entrepreneurial finance and currently working on several related research projects which examine the role of institutional environment in nurturing entrepreneurship, the outcomes of product market innovation and the impact of capital market imperfection on entrepreneur strategy respectively. I briefly summarize my current research and outline future research agenda in the attached *Statement of Purpose*.

For an overseas researcher based in Asia, the NBER Boot Camp offers a great opportunity for me to expand and deepen the knowledge of entrepreneurial finance research. I can come to Cambridge and NBER to attend lectures by world-class researchers such as Josh Lerner and others who came to present at SMU in seminars. I am fully aware of the preciousness of the Boot Camp to me. At SMU and even in Singapore, very few finance faculty members are doing research on entrepreneurial finance. Attending the Boot Camp thus not only provides me a valuable opportunity to learn leading entrepreneurship research topics from the senior scholars of the NBER Entrepreneurship Working Group, but also enables me to meet and discuss my research interests and projects with other young scholars that work in the same area. I believe the Boot Camp will substantially enhance my research capability in the field of entrepreneurial finance and beyond.

I am very enthusiastic about this opportunity. If you have any questions regarding my research or qualifications, please feel free to contact me. You can reach me either via e-mail: tc.leng.2011@pbs.smu.edu.sg or call +65-86540082. I appreciate your consideration.

Very truly yours,

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Education

Singapore Management University (SMU), Singapore

Ph.D. in Finance, July 2016 (expected)

- Advisor: Xiaping (Jerry) Cao

M.S. in Operations Management, 2011

University of Science and Technology of China (USTC), China

B.E. in Computer Science, 2009

Research Fields

Empirical Corporate Finance; Entrepreneurial Finance; Institutional Investor Behavior; Corporate Social Responsibility; Network Economics; Political Economy; Chinese Economy.

Working Papers

"The Impact of Budget Constraints on Flexible versus Dedicated Technology Choice," with Onur Boyabatlı and L. Beril Toktay, revised & resubmitted (2nd round) at ***Management Science***, March 2014.

"Political Influence, Incentives, and Corporate Investment: Evidence from China," with Jerry Cao, Brandon Julio and Alex Zhou, SMU Working Paper, March 2014.

"What Drives Venture Capital Activity? A Natural Experiment in China," with Jerry Cao, SMU Working Paper, October 2013.

Work In Progress

"Surfing the Wave: Institutional Investors and Correlated Information Events," with Gennaro Bernile and Yuehua Tang, SMU Working Paper, March 2014.

"Propagation of Corporate Innovation across Firms' Geographical Networks," with Gennaro Bernile and Jerry Cao, SMU Working Paper, March 2014.

Presentations

SMU-SUFE Summer Institute of Finance Conference, Shanghai, July 2013

SMU, Singapore, September 2012

Professional Experience

CITIC Securities, Shanghai — Jun 2013 - Jul 2013

Equity Analyst Intern with Mid & Samll Cap Research Team.

China Investment Corporation (CIC), Beijing — Sept 2012 - Nov 2012

Portfolio Analyst Intern with Fixed Income and Absolute Return Investment Department.

The Chinese University of Hong Kong, Hong Kong — Jan 2008

Visiting Student at Institute of Theoretical Computer Science.

Honors and Awards

M.S./Ph.D. Scholarship, Ministry of Education, Singapore	2009 - present
Theoretical Computing Winter School Fellowship, CUHK	2008
Scholarship for Academic Distinction, USTC	2005 - 2008
2nd/3rd Prize in National Mathematics Olympiad Contest	2000/2003

PhD Courses

Microeconomics I, Microeconomics II, Econometrics I, Econometrics II, Corporate Finance, Theory of Finance, Empirical Finance, Corporate Governance, Research Methods in Finance, Research Seminars in Finance, Independent Study I, Independent Study II.

References

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Statement of Purpose and Research Interests

Tiecheng Leng
Singapore Management University
Date: 31 March 2014

As a third year PhD in Finance student from Singapore Management University, I would like to apply for the 2014 NBER Entrepreneurship Research Boot Camp. For an overseas researcher based in Asia, the NBER Boot Camp offers a great opportunity for me to expand and deepen the knowledge of entrepreneurial finance research. I can come to Cambridge and NBER to attend lectures by world-class researchers such as Josh Lerner and others who came to present at SMU in seminars. I am fully aware of the preciousness of the Boot Camp to me. At SMU and even in Singapore, very few finance faculty members are doing research on entrepreneurial finance. Attending the Boot Camp thus not only provides me a valuable opportunity to learn leading entrepreneurship research topics from the senior scholars of the NBER Entrepreneurship Working Group, but also enables me to meet and discuss my research interests and projects with other young scholars that work in the same area. I believe the Boot Camp will enhance my research capability in the field of entrepreneurial finance and beyond.

My research interests are primarily in empirical corporate finance with a focus on entrepreneurial finance. Said simply, my current research projects examine the role of institutional environment in nurturing entrepreneurship, the outcomes of product market innovation and the impact of capital market imperfection on entrepreneur strategy respectively. I briefly summarize my current research and outline future research agenda as below.

My first paper examines the role of public policy efforts in promoting the financing of entrepreneurial firms. China's venture capital industry has experienced a surge in fundraising and investments during the past decades. Despite the increasing importance of venture capital in stimulating entrepreneurial business and economic development, little attention has been paid to the underlying forces of these dramatic movements in China's venture capital industry. In the paper **"What Drives Venture Capital Activity: A Nature Experiment in China"** (coauthored with Jerry Cao), we examine factors driving venture capital investment activity in China with the establishment of Shenzhen SME Board in 2004 as a natural experiment. The establishment of SME Board opens a new market for VCs to list their portfolio firms for exit and liquidity provision. We expect that such positive exogenous shock causes an excessive investment of VCs and drives valuation higher, suggesting that money chases deals and bubble is brewing in this sector. Consistent with our expectation, we find that SME Board has a strong positive impact on venture investment activities and the impact occurs through the supply-side channel. Industry aggregate and deal level venture investment patterns support our argument. The increase in activity is mainly driven by the entry of new and inexperienced VC funds and government-backed funds. Our paper thus can shed lights on the importance of institutional environment on VC activity and entrepreneurial financing.

Innovation is another important topic in the study of entrepreneurial finance. In an ongoing research project **"Propagation of Corporate Innovation across Firms' Geographical Networks"**, my coauthors (Bernile Gennaro and Jerry Cao) and I investigate the innovation diffusion effects across firms' geographical network and whether and how such innovation diffusion effects can explain similarities in firms' corporate policies and stock return dynamics. Our research is motivated by the observation that "geographical proximity matters in transmitting knowledge because intellectual breakthroughs must cross hallways and streets more easily than oceans and continents" (Handbook of Regional and Urban Economics (2004)). We thus expect that innovation diffusions are more likely to occur among geographically near firms. We construct firms' geographical network using text-based

analysis of firm 10-K location information and merge it with the NBER patent cross-citation data, which gives us a viable sample of 10 years to conduct the analysis. Once we establish the basic innovation diffusion effects across firms' geographical network, from corporate finance perspective, we would like to examine whether such innovation spillover effects are associated with similarities in firms' corporate policies such as capital structure and dividend payout decisions. While from the asset pricing angel, we could study whether the innovation spillover effects can explain stock return co-movement and stock return predictability.

The traditional analysis of entrepreneurs' operational investment decisions often assumes that there are no frictions in the capital markets so that these decisions can be made with abundant financial resources. However, in practice, frictions do exist and thus, the operational decisions are made in the presence of financial constraints. My paper with Onur Boyabatli (SMU) and L. Beril Toktay (INSEAD) on **"The Impact of Budget Constraints on Flexible versus Dedicated Technology Choice"** (*R&R at Management Science*) theoretically explores the implications of hard financial constraints on entrepreneurs' technology choice and capacity investment decisions. We show that a tighter capital budget decreases the capacity investment and profitability with each technology only when the financial flexibility is high. Regardless of the technology, as the financial flexibility in the production stage decreases, the entrepreneur makes a more conservative capacity investment and profitability decreases. We also uncover that the direction of the technology mis-specification when the financial constraints are not accounted for depends on the relative capacity intensities and the level of financial flexibility in the production stage. Our paper thus contribute to existing literature by explicitly modeling how the capital budget constraint and the operating budget uncertainty jointly shape the technology choice and the optimal capacity investment.

In addition to entrepreneurial finance, I am also interested in political economics and corporate finance in emerging economy. In the paper **"Political Influence, Incentives, and Corporate Investment: Evidence from China"** (coauthored with Jerry Cao, Brandon Julio and Sili Zhou), we examine variation in corporate investment around the turnover of provincial leaders in China. The tournament-style promotion system for provincial governors creates incentives for provincial governors to exert their influence over capital allocation. We find that firms become more precautious and reduce investment by 4.1% on average in the year prior to the turnover. Following the turnover, there is a divergence in investment patterns between state owned enterprises (SOEs) and non-state owned enterprises (non-SOEs). SOEs experience an abnormal increase in investment by 6.0% in the year following the turnover, consistent with the incentives of a new governor to stimulate investment. Non-SOEs, however, experience a reduction in investment post-turnover, suggesting that the political influence exerted over SOEs crowds out investment for Non-SOEs. The effects of political turnover on investment are mainly driven by turnovers with less-educated or local-born successors. Finally, we provide evidence that the political incentives around the turnover of provincial governors create a misallocation of capital as measures of investment efficiency decline post-turnover. Our research sheds new lights on how political systems interact with economy organizations in China.

Looking forward, I hope to carry out more research on entrepreneurial finance with a special focus of emerging economies like China. China has experienced a rapid economic growth over the past two decades especially about entrepreneurial activities. Yet, China's capital markets have been developed slowly and inefficiently to fund the entrepreneurial opportunities. Domestic institutions and political interferences further impede external financing to meet the increasing demand for entrepreneurs. Although entrepreneurship research (e.g., venture capital) has been widely studied in the US and Europe settings, its presence in China has been extremely limited. Given China's unique institutional settings and huge potentials, I plan to continue to span into fundamental research and policy issues related to entrepreneurial finance.

Jerry Cao
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March 31, 2014

To whom it may concern,

I want to recommend Tiecheng (Ironman) LENG, currently a third-year finance PhD candidate at SMU to enroll into NBER Entrepreneurship Research Boot Camp this year. Despite of being in Singapore and far away from Boston, Tiecheng is doing high quality research. Current we are working on research projects spanning form entrepreneurial finance to political financial economy. During our research collaboration, he proves to be highly intelligent, creative, independent and thoroughly skilled in research.

Tiecheng has shown versatile strengths in both finance and quantitative methods. He can proactively collaborates with me on the research by preparing for weekly meetings through reading and summarizing related literature, generating creative hypotheses, and presenting his own thoughts to solve or improve the current research issues. Tiecheng is effective and shows good problem-solving ability. He has spent substantial time to collect relevant data, reshuffle the data, construct necessary proxies, design empirical methodologies to test our main hypothesis and keep improving it proactively. In our joint paper, we examine how political connection/interference affects venture capital activity and corporate investment in China and emerging market.

Tiecheng has solid quant and fundamental analytical skills. He is a great team player, hard-working and always willing to undertake challenging tasks. He is proficient in statistical programming and advanced econometrics techniques such as SAS, MATLAB and STATA, and he has demonstrated effective empirical research capability. In addition to empirical research skills, Tiecheng is also a good theorist by manifesting himself in a high quality theoretical paper (part of his master thesis). In that paper, he studies the impact of financial constraints on firms' operational investment policies. He led the research project by building up the theoretical model and conducting empirical analysis. He also handled the first round manuscript revision. His dedication and hard working finally lead to a good quality paper that is currently under second round review with *Management Science*.

In summary, Tiecheng is a third year PhD with great potential. Singapore is too far from NBER, but NBER Entrepreneurship Research Boot Camp offers a great opportunity for him to broaden his perspective, meet world-class researchers and fine-tune research skills. To my knowledge, Tiecheng is an honest student and shows good integrity. I therefore recommend him without reservation. I hope you can give favorable consideration to his application for the NBER Entrepreneurship Research Boot Camp.

Sincerely,



Jerry Cao