NBER Entrepreneurship Research Boot Camp 2014

Application Package

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REFERENCES

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EDUCATION

2011-present **University of British Columbia, Sauder School of Business**
Ph.D. in Finance, expected 2016

2009-2010 **Hong Kong University of Science and Technology**
M.Sc. in Economics (graduated 1st in program)

2005-2009 **Renmin University of China**
B.Sc. in Finance

RESEARCH INTERESTS

Corporate Finance, Entrepreneurship, Innovation

WORKING PAPERS

Determinants of Ownership Structures: Evidence from Product Market Competition, with Jan Bena
(On the program of WFA 2014)

We study determinants of corporate ownership structures. Building on theory work, we use product market competition as a shock to the costs and benefits of key ownership characteristics. Using a comprehensive sample of private firms across 18 countries, we find that competition reduces firms' inside ownership and increases the dispersion of stakes among outside shareholders. Shareholder-level analysis shows that competition accelerates the entry and exit of shareholders and speeds up the diffusion of stakes from inside to outside shareholders. Our results are consistent with the view that decisions about ownership are driven by firm value maximization. We conclude that fundamental economic forces, like the nature of product market structure, induce endogenous equilibrium relation between corporate ownership structures and outcomes.

Do Excess Control Rights Benefit Debtholders? Evidence from Dual-Class Firms
(On the program of NFA 2013, FMA Asian 2014, FIRS 2014)

This paper uncovers the bright side of excess control rights from a debtholder's perspective. Using a sample of US dual-class firms where insiders have voting power in excess of their cash flow rights, I first provide direct evidence on the risk-avoiding behavior of dual-class firms compared to similar single-class firms. Consistent with controlling insiders' emphasis on long-term firm survival to ensure continuous private benefits of control, dual-class firms exhibit lower ROA volatility, undertake safer investments, and are significantly less likely to default or violate debt covenants. This translates into lower borrowing costs for

dual-class firms. On average, dual-class firms enjoy 16 to 28 basis points lower loan spreads than single-class firms, with the effect being stronger after controlling for selection using instrument variables. A difference-in-difference analysis of a sample of dual-class firms that unified their shares into a single class further confirms my results. In addition, lenders seem to be able to protect themselves against potential expropriation activities ex ante by using more expropriation-related covenants on dual-class borrowers. Overall, my results show that, in contrast to the negative effect widely documented on (minority) equityholders, excess control rights can benefit debtholders. This paper also highlights the importance of evaluating different governance mechanisms from the perspective of other stakeholders than shareholders.

TEACHING EXPERIENCE

2013	Corporate Finance (undergraduate), Lecturer, UBC. Evaluation 4.2/5
2014	Empirical Corporate Finance (PhD), Teaching Assistant, UBC
2013	Empirical Asset Pricing (PhD), Teaching Assistant, UBC
2014	Empirical Finance (MBA), Teaching Assistant, UBC
2012-2013	Mergers and Acquisitions (undergraduate and MBA), Teaching Assistant, UBC

AWARDS

2014	Graduate Student Travel Fund, UBC
2013	American Finance Association Travel Grant, AFA
2012-2013	Sauder School of Business Graudate Award, UBC
2012	Alan Kraus Scholarship, UBC
2011-2014	Dean Earle D. MacPhee Memorial Fellowship, UBC
2011-2014	International Tuition Award, UBC
2010	HKUST M.Sc. in Economics Academic Excellence Award, HKUST
2008	School of Business First-Class Scholarship, Renmin University

CONFERENCE PRESENTATIONS AND INVITED WORKSHOPS

2014	Western Finance Association Meetings, Monterey Bay
2014	Financial Intermediation Research Society (FIRS) Conference, Quebec City
2014	FMA Asian Conference, Tokyo (presenter, discussant)
2014	FMA Asian Conference Doctoral Student Consortium, Tokyo
2013	Northern Finance Association Meeting, Quebec City (presenter and discussant)
2013	UBC Finance Brownbag

PROFESSIONAL SERVICE

Referee: Journal of Corporate Finance

Session Chair: FMA Asian Conference 2014

PERSONAL

Citizenship: Chinese.

Date of Birth: Nov 25th, 1988.

Course	Course Name	Prof Name	Section	Grade	Letter	Session	Term	Program	Credits	Class Avg	Standing
EPSE 606	Teaching Course		76	83	A-	2012W	2	PHD	3	87	
ECON 562	Program Evaluation & Public Economics	Kevin Milligan	1	82	A-	2012W	2	PHD	3	79	
Econ 628	Topics in Applied Econometrics I	Hiro Kasahara	1					PHD			AUD
COMM 691	Contract Theory	Ralph Winter	1	83	A-	2012W	1	PHD	3	84	
ECON 603	Macro II	Giovani Gallipoli, Mike Devereus	1	93	A+	2011W	2	PHD	3	87	
COMM 695	Empirical Corporate Finance	Adlai Fisher, Murray Carlson	1	92	A+	2011W	2	PHD	3	86	
COMM 672	Theory of Corporate Finance	Ron Giammarino, Rob Heinkel	1	87	A	2011W	2	PHD	3	85	
ECON 626	Econometrics I	Kevin Song	1	100	A+	2011W	1	PHD	3	82	
ECON 602	Macro I	Paul Beaudry	1	99	A+	2011W	1	PHD	3	83	
ECON 600	Micro I	Mike Peters	1	92	A+	2011W	1	PHD	3	83	
COMM 693	Seminar in Research Methodology	Ralph Winter	1	86	A	2011W	1	PHD	3	85	
MATH 316	Partial Differential Equation		921			2011S	1	MSCB			AUD
ECON 514	Economics of Information	Wei Li	1	88	A	2010W	2	MSCB	3	83	
COMM 674	Empirical Asset Pricing	Adlai Fisher, Murray Carlson	1	92	A+	2010W	2	MSCB	3	87	
COMM 673	Theoretical Asset Pricing	Lorenzo Garlappi	1	81	A-	2010W	2	MSCB	3	80	
STAT 443	Time Series	Natalia Nolde	101	90	A+	2010W	1	MSCB	3	65	
ECON 527	Econometrics	Vadim Marmer	1	98	A+	2010W	1	MSCB	3	79	
ECON 500	Microeconomics	Yoram Halevy	1	85	A	2010W	1	MSCB	3	79	
COMM 671	Theory of Finance	Alan Kraus	1	82	A-	2010W	1	MSCB	3	83	

2014 NBER Entrepreneurship Research Boot Camp Application Essay **Ting Xu, UBC**

I am a third-year PhD student in finance at UBC. My research interests are corporate finance and entrepreneurship. In this essay, I will briefly describe two research projects that study crowdfunding—a financial innovation that is transforming venture financing. The Entrepreneurship Research Boot Camp will help me acquire the skills and knowledge needed to pursue the research agenda I am proposing here. In addition, I look forward to the opportunity to become a part of a community of students and faculty who work on entrepreneurship, and to bring my finance background to the discussion.

Perhaps the most significant recent trend in entrepreneurial finance is the move toward disintermediation of early-stage financing. Traditionally, financing of entrepreneurial ventures have been predicated on personal relationships (angel investors) or diligence conducted by sophisticated intermediaries (venture capitalists). The high cost and frictions of this intermediation process means many valuable ideas remain unfunded. Recently, with the help of information technology, entrepreneurs have gone to the "crowd", soliciting investment from a large number of individuals each contributing a small amount. This new method of financing, known as crowdfunding, allows entrepreneurs to bypass financial intermediaries and geographic restrictions to raise money to get their ideas off the ground. It also allows ordinary investors to share in the growth of innovative new ventures that are traditionally enjoyed exclusively by sophisticated investors. With the potential to transform venture financing, crowdfunding received strong support from regulators around the world as a means to alleviate financial constraints for individuals and small businesses[1]. However, despite growing public attention and policy makers' high hope in its contribution to economic growth[2], there is little evidence on the efficacy of this financial innovation. Although crowdfunding could unleash a significant pool of capital, it also has limitations. The crowd may offer limited monitoring and advising compared with venture capitalists; entrepreneurs may also be burdened with the task of managing of large number of stranger investors. Further, if individuals self-select into entrepreneurship based on their ability (Nanda (2008), Andersen and Nielsen (2012)), the marginal entrepreneurs financed by the crowd may be of lower quality. Therefore, ex ante, the effect of crowdfunding is not clear.

In my first project, I ask the following questions. To what extent does crowdfunding affect the creation of businesses and their growth? Does crowdfunding complement or substitute financing from traditional sources? What types of entrepreneurs or businesses benefit the most from crowdfunding? Understanding these questions is important to entrepreneurs, investors, and regulators, particularly on the eve of the launching new crowdfunding regulations in many countries.

As often encountered in the entrepreneurial finance literature (Chemmanur and Fulghieri (2013), Da Rin, Hellmann, and Puri (2013)), answering the above questions faces two challenges: the lack of data and proper identification. In this study, I will use a unique dataset containing the entire universe of projects ever launched on Kickstarter, the biggest reward-based crowdfunding platform. For each project, I have detailed fundraising campaign information as well as its daily funding history. I will then combine this dataset with BvD Orbis, a global company database reputable for its extensive coverage of small private firms. This allows me to track and compare the post-campaign outcomes of both funded and unfunded projects[3]. Since many projects on Kickstarter are unincorporated, I first examine the effect of crowdfunding success on entrepreneurs' incorporation decisions, an outcome not studied before in the literature. This allows me to estimate the effect of crowdfunding on business creation. For incorporated projects, I track three important firm outcomes: survival, growth in sales and employment, and the ability to raise subsequent financing[4]. Finally, I will exploit treatment heterogeneity to examine which entrepreneurs or projects benefit the most from crowdfunding.

Funding success is, of course, subject to selection by funders. To achieve identification, I take advantage of the fact that projects on Kickstarter are funded on an all-or-nothing basis: a project receives any funding only if the pledged amount exceeds its pre-set funding target within a given funding period. There is a clear cut-off between successful and failed projects, but the distribution of project qualities is presumably continuous. My first identification strategy exploits the existence of an early-stage critical funding mass point around which probability of funding success jumps discontinuously. It has been documented that funders in crowdfunding markets exhibit strong herding and by-stander behaviors (Agrawal, Catalini, and Goldfarb (2013), Zhang and Liu (2012), Kuppuswamy and Bayus (2013)). This means that projects that gained initial momentum are more likely to get subsequent financing. Therefore, there exists a critical mass point at which funding cascade is triggered[5]. This allows me to employ a regression discontinuity design comparing projects just above and below the threshold (see Kerr, Lerner, & Schoar (2011) for a similar method)[6]. My second identification strategy makes use of projects featured in Kickstarter's "Project of the Day" and Weekly Newsletter. Due to investors' limited attention, featured projected typically saw a big jump in funding after being catapulted into public attention. This offers a natural funding shock that does not reflect a commensurate jump in projects' underlying quality. I match each featured project with an unfeatured one based on similar funding history curve prior to the attention shock[7]. Because funding history aggregates soft information produced by the crowd, this allows me to absorb substantial heterogeneities between featured and unfeatured projects. Lastly, I employ an instrument variable that focuses on the arrival of "viral projects" during a project's funding period. Due to attention diversion and limited capital supply, projects whose funding periods saw entries of extremely popular projects would be less likely to get funded. Because arrival of new viral projects cannot be predicted by an entrepreneur after she launches her own, this is also exogenous to the project's future outcomes. Together, these three identification strategies will help me establish the causal effect of crowdfunding on business creation and growth.

Another research direction I'm interested in is entrepreneur and investor learning. Economists have long been interested in how agents update their belief and actions in response to past economic transactions. This question is especially important in the crowdfunding market where novice entrepreneurs meet inexperienced investors, both of whom facing steep learning curves. Crowdfunding platform offers an ideal place to study learning due to its well-defined setting and the presence of sequential interactions: 14% of entrepreneurs on Kickstarter launched multiple projects that are on average 6 months apart from each other. This provides a rare window into the learning behaviors of entrepreneurs and investors. My preliminary statistics show that on average entrepreneurs do better over time in various funding outcomes. Yet there is substantial heterogeneity. Entrepreneurs who failed the first time tend to lower their funding targets in later campaigns and raised significantly more than before; while those who enjoyed initial success subsequently aimed higher but ended up raising less. How do entrepreneurs change their campaign strategies or product designs in reaction to past funding experiences? Do entrepreneurs learn more from failure than success? How does behavioral bias like overconfidence affect learning? These questions will help us understand the unique features of entrepreneurial learning and thus are important for the design of public programs aiming to cultivate entrepreneurs. Equally important is learning by investors. Do investors' current funding decisions react to information generated in the entrepreneur's past funding rounds? Does the incentive to free-ride on early investors' due diligence lead them to overweight past information? In addition, learning should improve capital allocation because it reduces information asymmetry. It is interesting to test if repetitive interactions reduce cost of capital (in terms of rewards offered) and improve the matching between entrepreneur and investors (the presence of devoted versus transient investor).

With the above research questions in mind, I am eager to join the Boot Camp, to learn, contribute, and connect with people with the same interests in entrepreneurship.

References:

Agrawal, Ajay K, Christian Catalini, and Avi Goldfarb, 2013, Some simple economics of crowdfunding, .

Andersen, S., and K. M. Nielsen, 2012, Ability or finances as constraints on entrepreneurship? evidence from survival rates in a natural experiment, *Review of Financial Studies* 25, 3684–3710.

Chemmanur, T. J., and P. Fulghieri, 2013, Entrepreneurial finance and innovation: an introduction and agenda for future research, *Review of Financial Studies* 27, 1–19.

Kerr, W. R., J. Lerner, and A. Schoar, 2011, The consequences of entrepreneurial finance: evidence from angel financings, *Review of Financial Studies* 27, 20–55.

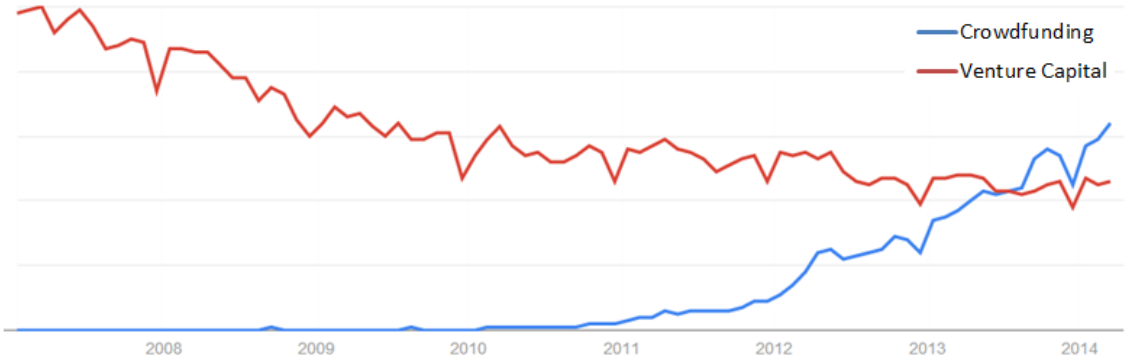
Kuppuswamy, Venkat, and Barry L. Bayus, 2013, Crowdfunding creative ideas: the dynamics of project backers in kickstarter, *SSRN Electronic Journal*.

Nanda, Ramana, 2008, Cost of external finance and selection into entrepreneurship, *HBS working paper*.

Da Rin, Marco, Thomas Hellmann, and Manju Puri, 2013, A survey of venture capital research, *Handbook of the Economics of Finance*, 573–648.

Zhang, Juanjuan, and Peng Liu, 2012, Rational herding in microloan markets, *Management Science* 58, 892–912.

Figure 1. Google Search Volume for "Crowdfunding" and "Venture Capital"



[1] In US, equity crowdfunding was legislated into the JOBS Act in 2012 and is awaiting implementation. In UK, the Financial Conduct Authority recently issued new policies on crowdfunding that will come into force next month. In Canada, Ontario Securities Commission has just unveiled rules granting green light to crowdfunding in Canada.

[2] See Figure 1 and Feb Board Governor Jeremy Stein's recent speech in a conference on crowdfunding hosted by the Fed: http://www.federalreserve.gov/newsevents/speech/stein20140324a.htm

[3] Specifically, I focus on campaigns from US and UK due to their predominance on Kickstarter and Orbis' close-to-exhaustive coverage of small businesses in these two countries.

[4] For subsequent financing, I complement balance-sheet information from Orbis with Crunchbase, an online database covering financing activities of more than 220,000 startups.

[5] Specifically, I find funding success rate jumps discontinuously from 26% to 64% when funding ratio (pledged amount/target amount) crosses the 5% point 1/30 into the funding window (corresponding to one day for a typical 30-day project).

[6] Because this critical funding threshold is not associated with any implicit rule known to the Kickstarter community, it's unlikely to be subject to manipulation. In contrast, the final funding threshold (100%) is subject to severe manipulation: there is a big mass of projects funded just above 100% while very few ones fall just below 100%. This is why I do not use it as my discontinuity point.

[7] Kickstarter's featuring decisions are not based on the project's future business viability, but rather, according to its website, "something sticks out as particularly compelling, whether it's a really fun video, creative and well-priced rewards, a great story, or an exciting idea".

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March 31th, 2014

Dear NBER Entrepreneurship Research Boot Camp Admission Committee:

It is my pleasure to write this reference letter in support of **Ting Xu** who is applying to participate in the 7th Entrepreneurship Research Boot Camp (ERBC). Ting is our Ph.D. student in finance. He is expected to be on a job market in January 2016.

I have known Ting since summer 2012 when I was advising him on how to write his first summer research paper. Through these interactions, I found out that Ting is smart, responsible, and hardworking student. In April 2013, I started to supervise him more closely and we commenced to work on a joint paper. I know Ting very well; over the last few months, we were meeting almost daily.

When Ting will hit the market in 2016, he will very likely be the best Ph.D. student UBC finance department will have produced in 5 years. As of today, he has 2 solid papers in his portfolio. The first paper "Do Excess Control Rights Benefit Debtholders? Evidence from Dual-Class Firms" has been accepted to a number of mid-range conferences. The second "Determinants of Ownership Structures: Evidence from Product Market Competiton" has been accepted to WFA 2014. To the best of my knowledge, since I arrived to UBC in 2009, no other Ph.D. student in finance has achieved similar outcomes at comparable career stage.

As is to be expected about a Chinese Ph.D. student, Ting is technically very solid. Compared to his pears, Ting stands out in a number of other dimensions as well. First, he is very well-read, mainly in the area of corporate governance, small business economics and finance, and venture capital and entrepreneurship. Second, he is good at critical thinking about research; he is asking right questions and has been extremely helpful in making our joint research project to progress. Third, Ting has a very good command of tools and techniques required to conduct empirical research in economics; he does

not need to be taught about sources of identification. Last, Ting is a very grown-up person. He has assisted me with my teaching. He is mature enough to give a tutorial to MBA students. He is also reliable enough for me to delegate marking of junior Ph.D. assignments to him.

In the last few months, Ting has been looking for his job market topic and, more broadly, his research agenda going forward. I was glad to see that he has decided for a topic on the border between corporate finance, entrepreneurship, and economics—crowd funding. I find this topic exciting since I view crowd funding as a financial innovation allowed by technology that can possibly disrupt traditional ways in which entrepreneurs raise funding. I am glad to see that his views are similar and that he is fully committed to work in this area going forward. Ting is currently defining research questions to be answered in this area and has made some first steps. In the process, he has amassed data from the leading crowd funding platform which he plans to exploit.

Given the above, in my opinion, Ting is the right student at the right time and thus to benefit the most from the participation in the 7th Entrepreneurship Research Boot Camp. He needs a boost in knowledge in the area of entrepreneurship that we do not cover in Ph.D. finance classes at UBC. In addition, he would gain a lot by being able to set his capital-raising-perspective of entrepreneurship into a broader economic and social framework. Ting has drive and aspiration; he would be a valuable contribution to the Camp.

Ting has clearly demonstrated his great potential during Ph.D. studies at UBC. I believe that he will be a productive academic going forward and I recommend him unreservedly.

If you need any further information, please do not hesitate to contact me.

Sincerely,



Jan Bena