**Massachusetts Institute of Technology**
**Sloan School of Management**
**Scott Stern**
**David Sarnoff Professor of Management**
**Chair, Technological Innovation,**
**Entrepreneurship, and**
**Strategic Management Group**

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October 2014

**RE: Recommendation Letter for Danny Kim for NBER Entrepreneurship Boot Camp from Professor Scott Stern, MIT Sloan School**

Dear Committee,

I am delighted to highly recommend Danny Kim for the NBER Entrepreneurship Boot Camp this summer. Danny is a second year TIES doctoral student at MIT, and he has developed a strong background in economics, innovation and entrepreneurship, and econometrics. He is interested in the role of entrepreneurship within careers (and how entrepreneurship gets chosen compared to other career paths), as well as entrepreneurial finance. Along with Fiona Murray and Ed Roberts, he has been heavily involved in the second wave of the MIT alumni survey that allows evaluation of the incidence into entrepreneurship and dynamics of MIT undergraduate alumni. He has produced an early paper which seeks to evaluate whether undergraduates selecting into start-ups incur a wage discount or premium relative to more established employers: interestingly, in his early results, he finds that, after controlling for observable measures of student quality, there seems to be a wage premium for work at start-up (in the cross-section), though no meaningful differences (for a smaller sample) when one examines multiple offers per individual and impose a fixed effect for each student. Though preliminary, Danny's work has gotten off to a strong start, and I believe he would be greatly benefited by inclusion in the Boot Camp this summer. He would benefit from the lectures, will be a diligent participant, and will definitely be a key contributor to the cohort effect of the Boot Camp this year.

I recommend that we admit Danny Kim for the NBER Entrepreneurship Boot Camp this summer. Please do not hesitate to contact me with any further questions or concerns.

Sincerely,



Scott Stern
David Sarnoff Professor of Management
Chair, Technological Innovation, Entrepreneurship, and Strategic Management Group
MIT Sloan School of Management

100 Main St.
Building E62-368
MIT Sloan School of Management
Cambridge, MA 02142
March 18th, 2015

Thomas Hellmann
Saïd Business School
University of Oxford
Park End Street
Oxford OX1 1HP
UK

Dear Professor Hellmann,

Please accept my application for the NBER Entrepreneurship Research Boot Camp 2015. My name is Danny Kim and I am a second year PhD student in the TIES Group at MIT Sloan. My main research interests are entrepreneurship and finance, which I hope will have the opportunity to delve deeper into during the NBER Entrepreneurship Research Boot Camp.

I feel that attending the Boot Camp this summer will enrich my understanding of the existing literature and motivate new avenues for future research. More importantly, this opportunity will allow me to meet and learn from fellow students in the entrepreneurship research community as well as seasoned researchers who are leading the frontier in this ambitious research agenda.

My current research project explores how and whom startups hire as their first set of employees. In a study of MIT graduates, I find that startups tend to pay higher wages than large, established firms. Although the results are interesting, they open up many new and exciting questions about early employees and the larger picture on the labor economics of entrepreneurship. I am confident that the Boot Camp will develop my theoretical and empirical thinking around these issues, and that I will meet many new colleagues with whom I can start exciting conversations on this topic.

Thank you for your time in considering my application. Scott Stern – my current advisor – will be sending in his recommendation letter on my behalf. I look forward to hearing back.

Respectfully,

J. Daniel Kim

Encl.

## *Personal Statement*

I first gained exposure to empirical research in entrepreneurial finance in 2011 when I began to work with Paul Gompers as his full-time research associate. As I engaged in both the phenomenon through writing industry-based case studies and academic research through econometric analysis, I quickly became fascinated with the venture capital industry, which appeared to play an important role in fostering innovation and economic growth.

Currently as a second year PhD student at MIT Sloan, my research interests have expanded to two broader streams in the field of entrepreneurship – entrepreneurial finance and labor economics of entrepreneurship. The first is on how entrepreneurs optimally raise capital to build their ventures and in particular, how the different financing terms (e.g. intensity of VC staging) shape entrepreneurial incentives and ultimately outcomes (e.g. time to and type of exit, innovation output). The second is on how and whom startups hire as their first set of non-founder employees.

My current research project is based on the latter. More specifically, I explore the allocation of talent between high-tech startups and large, established firms, which also seek to recruit the same type of high quality workers that innovation-driven startups aim to hire. Using MIT and its graduating college seniors as the empirical setting, I find that those who choose to join startups appear to be higher quality workers. On average, those who join startups receive more job offers – which proxy for worker quality – than those who join large firms. I also observe that early employees have significantly different ex-ante motives in employment; they tend to prefer the opportunity for impactful and creative work while their counterparts at large firms prefer job stability and firm reputation. These preliminary results suggest that the allocation of talent across firms of varying maturity is a rich, yet under-explored phenomenon driven by wages as well as sorting based on individual preferences and employer-employee quality matching.

In this project, I begin by assessing the wage differential between startups and established firms. It is not theoretically clear whether startups should pay higher wages for the same type and quality of human capital. On the one hand, high-ability workers – assumed to be somewhat risk-averse agents – may earn a wage premium from entrepreneurial firms due to compensating differential driven by the riskiness of the company and the lacking organizational reputation. In early-stage companies, there exists a formidable probability that the company will be out of business in the near future, suppressing the worker's expected future income toward zero. Andersson et al. (2009) similarly suggest that innovative firms operating in riskier spaces – in which startups most often find themselves – tend to pay more. In addition, potential job switchers may derive signaling value of affiliating with a high status organization, leading them to accept a lower wage at an established company in order to leverage its status during their next job search. Therefore, the wage offers from startups should be higher to compensate for the risk and lacking reputation.

On the other hand, startups may pay less simply because they are cash constrained. In similar fashion, Brown and Medoff (2003) argue that young firms tend to offer lower wages due to their inability to pay. A more nuanced theory is that workers take a wage penalty to work at startups because this particular type of employees derives utility from autonomy and being able to innovate in a less bureaucratic environment.

For instance, scientists are inclined to forego a higher salary to work for a firm that allows them to autonomously conduct their own research and publish their findings (Stern, 2004). In a sense, the worker pays a positive price for a preferred job activity and the resulting equalizing differences lead to lower wages (Rosen, 1986). Early employees may exhibit similar economic behavior since they have had invested significantly in their technical expertise and thus tend to strongly prefer autonomy and the opportunity to put their own ideas into practice. Furthermore, some company founders are known to intentionally offer lower salaries in order to filter for only the workers who truly believe in the new business and who demonstrate their commitment by accepting lower wages. Therefore, the theoretical reasoning behind entrepreneurial worker preferences suggests that startups pay lower wages than their mature counterparts.

Cross sectional regression estimates show that, on average, wages at startups are roughly 10% higher than those at large, established firms. The results are robust even after controlling for individual characteristics (e.g. gender, school major, number of offers received). However, since earlier results show that workers who join startups appear to be systematically different from others who join established companies, the startup wage premium may be largely driven by unobserved heterogeneity across individuals (i.e. ability). In order to deal with this ability bias, I plan to assess wages at the offer-level since many individuals receive multiple offers. Although multiple-offer data are available for only a subset of the sample, initial results show that including individual fixed effects effectively drives the wage differential to zero. This suggests that the observed startup premium is driven by differences in individual ability. In other words, the most talented workers from MIT appear to select into high-tech startups, which in turn pay higher wages.

In a future study, I hope to explore the long-run impact of being employed at a startup. For instance, does the labor market penalize or reward workers for the experience of having worked at a startup, which tends to develop more generalist rather than specialist set of skills (Lazear, 2004)? Is the long-run wage effect affected by the outcome of the startup – say IPO vs. still private – that is presumably outside the employee's control? What about the employee's likelihood of becoming an entrepreneur herself in the near future? Certainly, there are many interesting questions regarding the interplay between knowledge workers and firm type that call for further research.

Over the past two years as doctoral student, I have become fascinated with the proliferating research on the economics of entrepreneurship and entrepreneurial finance. I hope that the NBER Entrepreneurship Research Boot Camp will enrich my understanding of the existing literature and motivate new avenues for future research. Furthermore, I hope to meet and learn from fellow students as well as seasoned researchers who are leading the frontier in this ambitious research agenda.

# J. Daniel Kim

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(360) 888-5757; jdkim@mit.edu

## EDUCATION

**Massachusetts Institute of Technology** **Sept. 2013 – Present**
Sloan School of Management Cambridge, MA
*Ph.D. in Management (Expected, June 2018)*
*M.A. in Management (Expected, June 2015)*

- Research interests: Entrepreneurial finance, economics of innovation and entrepreneurship
- Current GPA: 4.7 / 5.0

**Dartmouth College** **Sept. 2007 – June 2011**
*A.B. in Mathematics & Social Sciences, High Honors in Major, Cum Laude* Hanover, NH

- GPA: 3.74 / 4.00
- Thesis: Multivariate Analysis of HIV and TB in Sub-Saharan Africa
- Language Study Abroad Program in Barcelona, Spain
- GMAT: 750 (Q49, V44)

## EXPERIENCE

**Harvard Business School** **June 2011 – July 2013**
*Research Associate for Professor Paul A. Gompers, Finance Unit* Cambridge, MA

*Case writing*

- Co-authored four HBS case studies on emerging issues in venture capital and private equity
- Conducted due diligence on US debt market, Russian private equity landscape, startup ecosystem in New York City, key industry trends, and company financials
- Interviewed and worked with entrepreneurs and executives from Bain Capital, FirstMark Capital, and others

*Venture capital and private equity research*

- Collaborated with a team of two professors, a PhD student, and undergraduates to investigate the effect of social connections in hiring venture capitalists, and the consequent implications of future investment performance
- Explored the effect of dividend recapitalizations in reverse leveraged buyout deals by analyzing S-1 filings and company financials via CapitalIQ and Bloomberg
- Constructed large person-level data sets using SAS covering all domestic venture investments from 1975 to 2011
- Conducted econometric analysis (linear regression models, regression discontinuity design, etc.) using STATA to better understand the personnel economics of venture capital
- Led a team of undergraduate interns for data projects

**Morgan Stanley** **Summer 2010**
*Investment Banking Division, Summer Analyst* Seoul, Korea

- Conducted financial and industry research; prepared pitch books and presentations as part of deal teams
- Assisted in discounted cash flow valuation for a leading chemical and defense client's potential $850MM acquisition

**Kageno, Inc. & The William Jewett Tucker Foundation** **Spring 2010**
*Tucker Foundation Fellow* Rusinga Island, Kenya

- Designed cost reduction initiatives to cut operating expense by up to 31%
- Developed economic opportunity plans to empower 9 women suffering from poverty and prostitution

## ACTIVITIES

**Cornerstone Church of Boston**, *Co-Director of Resource Development* **July 2014 – Present**

- Lead organizational fundraising efforts by engaging alumni base and launching various church-wide initiatives
- Co-initiated Cornerstone Real Estate Fund, a 10-year project aimed to fundraise and eventually purchase Cornerstone's own property

**Dartmouth College Republicans**, *President* **March 2009 – May 2011**

- Coordinated contacts and collaborate with 2010 gubernatorial and senatorial campaigns
- Represented organization in national media and state committees

**Skills:** Advanced proficiency in Excel, MS Office, SAS, and STATA
**Hobbies:** Skiing, basketball, politics, traveling, and startups (Finalist, Greener Ventures Entrepreneurship Contest 2012)

## PUBLICATIONS

Gompers, Paul, Kristin Mugford, and J. Daniel Kim. "Bain Capital: Outback Steakhouse." Harvard Business School Case 212-087, February 2012. (Revised November 2012.)

Gompers, Paul, and J. Daniel Kim. "FirstMark Capital." Harvard Business School Case 212-041, February 2012.

Gompers, Paul A., and J. Daniel Kim. "Private Equity Finance Vignettes: 2014." Harvard Business School Case 213-026, July 2012. (Revised July 2013.)

Gompers, Paul A., Kristin Mugford, and J. Daniel Kim. "Harrah's Entertainment." Harvard Business School Case 213-054, October 2012.

Gompers, Paul A., J. Daniel Kim, and Vladimir Mukharlyamov. "United Capital Partners (A)." Harvard Business School Case 213-044, September 2012.

Gompers, Paul A., J. Daniel Kim, and Vladimir Mukharlyamov. "United Capital Partners (B)." Harvard Business School Supplement 213-045, September 2012.

Duncan, Bruce, Joel Levine, and J. Daniel Kim, “Hoffmann and Schwester Monika: A Stylometrics Analysis” in Das E. T. A. Hoffmann-Jahrbuch 2011, Band 19: S.113-124

## WORK IN PROGRESS

“Startup Wage Differentials: Evidence from MIT Graduates and Their Initial Career Choices”