THE OHIO STATE UNIVERSITY
FISHER COLLEGE OF BUSINESS

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February 11, 2023

Organizing Committee
NBER Entrepreneurship Boot Camp 2023

Dear Organizing Committee,

I am writing to apply for the opportunity to participate in the NBER Entrepreneurship Boot Camp 2023. I am a fourth-year Ph.D. Candidate in Finance at The Ohio State University. My research interests include innovation, labor, and entrepreneurship. Attached you will find my:

1. Curriculum vitae
2. Statement of Research
3. List of Current and Completed PhD Courses

In addition, you will receive a letter of recommendation on my behalf from my advisor, Professor Michael Weisbach (weisbach.2@osu.edu).

Please do not hesitate to contact me if you have any questions.

Thank you for considering my application.

Sincerely,
Daisy Wang

Daisy Wang

Email: daisywang219@gmail.com website: http://daisy.finance

Education

- **Ohio State University** — Columbus, OH
  Ph.D. in Finance — *Aug. 2019 to now*
- **The Chinese University of Hong Kong** — Hong Kong
  M.Phil. in Finance — *Aug. 2016 to Aug. 2018*
- **The University of Hong Kong** — Hong Kong
  Bachelor in Economics and Finance (First Honour Class) — *Sept. 2012 to May 2016*
- **University of Paris (Dauphine)** — Paris
  Exchange Study — *Sept. 2014 to Dec. 2014*

Publication

- **Credit Rating and Corporate Disclosure: Evidence from Sovereign Credit Downgrades**
  with Wensi Xie, *Journal of Financial and Quantitative Analysis, 2022, 57(4), 1591-1620*
  "Exploiting exogenous variations in corporate ratings due to sovereign credit downgrades and sovereign ceiling policies, we assess how firms respond to a reduction in credit ratings. We find that firms bounded by the sovereign ceiling significantly increase information production in response to a sovereign downgrade. The effects are stronger for firms relying more heavily on external finance and operating in a more opaque environment. Enhanced information production, in turn, affects firms' subsequent access to bond markets. These findings suggest that firms actively manage information environments to maintain access to public debt markets."

Working Paper

- **Specialized Investments and Firms' Boundaries: Evidence from Textual Analysis of Patents**
  with Jan Bena, Isil Erel and Michael Weisbach, *Revise and Resubmit, Journal of Finance*
  "Inducing firms to make specialized investments through bilateral contracts can be challenging because of potential hold-up problems. Such contracting difficulties have long been argued to be an important reason for acquisitions. To evaluate the extent to which this motivation leads to mergers, we perform a textual analysis of the patents filed by the same lead inventors of the target firms before and after the mergers. We find that patents of inventors from target firms become 28.9% to 46.8% more specific to those of acquirers' inventors following completed mergers, benchmarked against patents filed by targets and a group of counterfactual acquirers. This pattern is stronger for vertical mergers that are likely to require specialized investments. There is no change in the specificity of patents for mergers that are announced but not consummated. Overall, we provide empirical evidence that contracting issues in motivating specialized investment can be a motive for acquisitions."
- **Mergers Under the Microscope: Analysing Conference Call Transcripts**
  with Sudipto Dasgupta, Jarrad Harford, Fangyuan Ma and Haojun Xie
  "Many M&A deal announcements are accompanied with a conference call to discuss deal details and address market participants' demand for information. We find that calls are associated with positive market reactions and a higher likelihood of deal completion. Using a topic modelling approach, we uncover 20 highly interpretable topics from the call transcripts. Market reactions are more (less) positive when the call communicates more "hard" ("soft") information, revealing different disclosure strategies depending on deal quality. Governance-related issues, although not significantly correlated with stock returns, are prominently discussed and related to the latent motivation for holding calls."

Work-in-Progress

- **Technological Breakthroughs and the Acquisition of Human Capital**
  "This paper studies how firms choose to obtain skilled workers between hiring them directly ("direct hiring") and acquiring their employers ("acqui-hiring"). Using textual analysis of US patents and selected technological breakthroughs, I measure the skills and turnovers of individual inventors. I find that inventors skilled in the breakthrough-related field face greater demand and the external labor market of such inventors start to become highly active years before the breakthrough, coinciding with the public's increasing attention to the emerging technology. In the years immediately preceding a breakthrough, inventors with relevant skills are 23.5% more likely to be directly hired than comparable inventors without relevant skills. In the years immediately after a breakthrough, in contrast, they are 43.6% more likely to be acqui-hired. I show that labor market legal frictions and employers' organizational capital (in particular, tacit knowledge and team synergy) are two underlying factors that induce firms to prefer acqui-hiring over direct hiring."

Research and Teaching Experiences

Research Assistant, for Prof. Sudipto Dasgupta, Chinese University of Hong Kong, Sept.2018 - June 2019
Research Assistant, for Prof. Wensi Xie, Chinese University of Hong Kong, Aug.2016 - June 2019
Research Assistant, for Prof. Shaojun Zhang, The University of Hong Kong, Sept.2015 - May 2016
Research Assistant, for Prof. Chen Lin, The University of Hong Kong, Aug.2015 - Oct.2016
Lecturer, independent, Ohio State University (SEI 4.70 out of 5.0), May 2022 - Aug.2022

Statement of Research

My current research involves exploiting new, unstructured data and novel measures to answer fundamental questions in innovation, labor and entrepreneurship.

In my first working paper "**Specialized Investments and Firms' Boundaries: Evidence from Textual Analysis of Patents**" (with Jan Bena, Isil Erel, and Michael Weisbach), we use patent text data to examine a long-standing theory: Incomplete Contracting Theory of the Firm. Specifically, we study to what extent firms resolve holdup problems by acquiring others and enhancing relationship-specific investments. There are two empirical challenges to this question: (1) observing the nature of investments in the merged firm and (2) attributing the investments to the target and the acquirer. We tackle both challenges by tracing the patents filed by the inventors before the mergers and, using textual analysis, constructing a measure of innovation specificity. We find that, after a merger, patents produced by the target's inventors are substantially more specific to those by the acquirer's inventors, consistent with the theoretical prediction.

In my second working paper (solo-authored), "**Technological Breakthroughs and the Acquisition of Human Capital**", I study how technological breakthroughs affect the turnover of inventors with relevant skills, and factors affecting how firms choose between different approaches (direct hiring and acqui-hiring) to obtain such human capital. Again using textual analysis of patent data, I use a novel approach to both measure inventor-level skills from the patents they file and observe individual inventors' job turnover. I find interesting facts related to the inventor turnover pattern – when there is a technological breakthrough, the labor market of inventors with relevant skills becomes active years before the breakthrough, indicating that the competition for such human capital predates the emergence of technological breakthroughs. The pattern of turnover also differs – while the 5 years before the breakthrough features more direct poaching, in the years after the breakthrough, firms use more acqui-hiring (acquiring the whole firm to hire key employees) to obtain desired human capital. I also find that labor market legal frictions (non-compete agreements) and the desire to preserve organizational capital are two factors explaining acqui-hirings.

In my third work-in-progress project (solo-authored), I study **how receiving Corporate Venture Capital ("CVC") financing affect startups' future innovation direction and exiting option**. Recently there has been rising concern that the incumbent firms damp future innovation and competition to protect their existing market power from new entrants. While the anti-competitive nature of corporate M&As have been widely studied, less is known on the role of CVC in softening future competitions. The PE/VC studies

with an aim to establish causality need to address the selection concern – PE/VC might be better at "cherry-picking" firms with anticipated future outcomes. In this project, I aim to establish causality of CVC investment on its portfolio firms' subsequent outcomes through an instrumental variable approach. Using the IV, I study the following questions – (1) to what extent are CVC and independent venture capital ("IVC") investments substitutive to each other? Does CVC investment play a unique role in funding certain type of firms that are underfunded by IVC? (2) Does receiving CVC investment induce the portfolio firms' to produce patents that are less substitutive to the CVC parent firms, therefore diverting direct competition between them? (3) Does receiving CVC investment make the portfolio firm less likely to be acquired by a competitor or exit through IPO than to be acquired by the CVC parent firm? I believe questions like such also have great policy implications.

These projects represents my long-term research interest in understanding the interactions between incumbent firms and startups through innovation, labor, and financing. The disruptive innovations of new entrants fuel the creative destruction that replaces the obsolete technologies, but the incentive of startups is inevitably shaped by the existing market structure. I'm fascinated to study their interactions – to what extent could incumbent firms change the innovation nature of startups and if so, what are their devices? (My third project on the effect of CVC investment on portfolio firms' innovation nature could be seen as an effort to answer this answer, following the existing literature that study this question from M&As, product market kill zone, etc.) Besides, how does the rising market power of superstar firms affect the incentive of skilled labor? Are those firms becoming more likely to start early in their search, acquisition, and retention of skilled labor in the weak of a new technology? Could this effect contribute to the slowdown of business dynamics? (My second project on inventor mobility touches on this issue, but more is to be done along this line down the road.) Finally, how do incumbent firms play a role in financing lines of research that are usually underinvested by traditional VCs, as pointed out by existing literature?

With such questions in mind, I cherish the opportunity presented to me in connecting with people in this field and forming a deeper understanding of the current state of research. As one of the most prestigious programs promoting entrepreneurship studies, NBER Entrepreneurship Boot Camp attracts the most established scholars and most aspiring students in the field every year. I look forward to forming a more comprehensive understanding of the field by taking the lectures, sharing my work with the group, and receiving great comments and feedback from the brightest minds.

List of Current and Completed Courses

Microeconomics Courses

Microeconomic Theory IA

Microeconomic Theory IB

Microeconomic Theory IIA

Microeconomic Theory IIB

Macroeconomics Courses

Macroeconomic IA

Macroeconomic IB

Macroeconomic IIA

Macroeconomic IIB

Econometrics

Econometrics I

Econometrics II

Finance

Asset Pricing Theory

Empirical Asset Pricing

Corporate Finance Theory

Empirical Corporate Finance

Advanced Asset Pricing

Advanced Corporate Finance

Research in Finance

Finance Research Topics

Dynamic Models and Structural Estimation in Corporate Finance