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**PLACEMENT CO-CHAIRS**

Sandra E. Black  
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**PLACEMENT ADMINISTRATOR**

Amy Devine  
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**PERSONAL INFORMATION**

Gender: Female

Citizenship: Chinese citizen; US Permanent Residency expected by Jan, 2023

**RESEARCH INTERESTS**

Primary Field: Macroeconomics – Innovation, Growth and Firm Dynamics

Secondary Field: Finance, Inequality, Entrepreneurship

**EDUCATION**

Ph.D. in Economics, Columbia University	2016 – 2023 (Expected)
M.A. in Economics, Columbia University	2015 – 2016
Ph.D. in Cell and Developmental Biology, Rutgers University	2009 – 2015
B.S. in Pharmaceutical Science, Peking University	2005 – 2009

**JOB MARKET PAPER****[Acquisition, Innovation and Firm Dynamics \[Latest Version\]](#)**

*Abstract:* I construct a new dataset on the dynamic ownership of firms by tracking the merger and acquisition (M&A) transactions among public and private acquirers and targets. I then match the dynamic ownership of firms to the firm-level patent data from USPTO to obtain novel data on the dynamic ownership of patents

by firms. Using this data, I document the rising importance of acquisitions of private firms in contributing to the growth of the acquirers. My empirical analyses reveal three channels through which firms grow via acquisition: (i) acquirers develop more innovations based on the patents of their target firms after acquisition; (ii) acquirers produce more patents after making their first acquisition in a technology class – the expansion is larger if the acquirers have low initial patenting activities in that technology class (iii) acquisitions can shield acquirers' innovation from becoming technologically obsolete. I then examine the implications of these innovation mechanisms on the dynamics of firms at the upper tail of firm size distribution using a range of firm random growth models. I find that acquisitions give rise to higher inequality among top firms (i.e., superstar firms are even bigger) in the stationary firm size distribution. In terms of the transition dynamics, when faced with negative creative destruction shocks, acquisitions by the top firms can lead to a faster rise of inequality in the upper tail of the firm size distribution.

## OTHER WORKING PAPERS

### **Firm Dynamics and Innovation: Evidence from Decomposing Top Sales Shares** [\[PDF\]](#) (EEA Conference 2022 – Firms and Technology Program)

*Abstract:* What do changes in top sales shares signal about changes in firm dynamics? I use an accounting decomposition to identify two sources of top sales shares growth: (i) incumbent top firms grow bigger; (ii) new top firms replace old top firms. Over the 1950-2019 period, incumbent top firms contribute about 3.5 times as much as new top firms to the growth of the sales shares accrued to the top 0.01% firms in the US economy. Using the results from this empirical decomposition, I then build a model to estimate a firm dynamics process in which firms grow in response to own innovation shocks and shrink at the impact of creative destruction shocks. The existence of a channel through which own innovation can lead to higher top sales shares growth is supported by the data. My estimation reveals a surge in the rate of own innovation since 1980 and a decline in the rate of creative destruction over time.

### **Employment during the COVID-19 Pandemic: Collapse and Early Recovery** with **Tam Mai** [\[PDF\]](#)

*Abstract:* We use monthly Current Population Survey data to document employment changes during the COVID-19 pandemic at the occupation, industry, and

metropolitan statistical area (MSA) levels. Over March-April 2020, jobs losses are larger for occupations with higher physical proximity or lower work-from-home feasibility, especially for lower-paying occupations. Non-essential industries also see greater declines in employment. Such occupational and industrial susceptibility to COVID-19 contributes to the variation in employment changes across MSAs: Employment shrinks more for MSAs with larger pre-crisis fractions of workers employed in occupations with higher infection risk. Over April-June 2020, occupations and industries that are hit harder recoup more jobs, but the recovery is only partial. Moreover, the gains are concentrated in lower-paying occupations and a few industries. Taken together, these abrupt changes in employment following the COVID-19 outbreak are unprecedented and potentially have long-term implications for occupational inequality and regional disparity.

### **Income Inequality and Mortgage Credit Allocation [PDF]**

*Abstract:* This paper studies how income inequality at the Metropolitan Statistical Area (MSA) level affect mortgage credit allocation along the income distribution of households *within* MSAs. I find that MSA-level income inequality has heterogeneous effect on household-level mortgage debt accumulation. Two measures of inequality, the ratio of 95th-to-80th percentile (p95/p80) and the ratio of 80th-to-50th percentile (p80/p50) of household income, exhibit significant impact. With respect to credit approval along the income distribution, high p95/p80 inequality works more in favor of low-income households while high p80/p50 inequality benefits high-income households more.

### **PUBLICATIONS (IN BIOMEDICAL SCIENCE, FROM PREVIOUS PHD STUDY)**

1. Shi, A., Liu, O., Koenig, S., Banerjee, R., Chen, C. C. H., Eimer, S., Grant, B. D. (2012). RAB-10-GTPase-mediated regulation of endosomal phosphatidylinositol-4, 5-bisphosphate. *Proceedings of the National Academy of Sciences*, 109(35), E2306-E2315. [PDF]
2. Sun, L., Liu, O., Desai, J., Karbassi, F., Sylvain, M. A., Shi, A., Grant, B. D. (2012). CED-10/Rac1 regulates endocytic recycling through the RAB-5 GAP TBC-2. *PLoS genetics*, 8(7), e1002785. [PDF]

3. **Liu, O.**, Grant, B. D. (2015). Basolateral endocytic recycling requires RAB-10 and AMPH-1 mediated recruitment of RAB-5 GAP TBC-2 to endosomes. *PLoS genetics*, 11(9), e1005514. [\[PDF\]](#)
4. Wang, P., Liu, H., Wang, Y., **Liu, O.**, Zhang, J., Gleason, A., Grant, B. D. (2016). RAB-10 promotes EHBP-1 bridging of filamentous actin and tubular recycling endosomes. *PLoS genetics*, 12(6), e1006093. [\[PDF\]](#)
5. (In Chinese.) Li, X. T., Yuan, Y. L., Xia, Y. Y., Yu, B. Z., Zhang, T. J., **Liu, O.**, Zhan, S. Y. (2009). Genetic polymorphism of glutathione-S-transferase M1 and T1: a systematic review in Chinese population and a pilot study in smear-positive pulmonary tuberculosis cases of Jilin province. *Chinese Journal of Epidemiology*, 30(5):502-6. [\[PDF\]](#)

## TEACHING EXPERIENCE

### TEACHING FELLOW

#### **Columbia University [Evaluation]**

Principles of Economics (Undergraduate) Fall 2022

Instructor: Miguel Urquiola

Behavioral Finance (Undergraduate) Spring 2022

Instructor: Harrison Hong

Finance and the Real Economy (Undergraduate) Spring 2019, Spring 2020

Instructor: Matthieu Gomez

Corporate Finance (Undergraduate) Fall 2018, Fall 2019, Fall 2020

Instructors: Olivier Darmouni and Ethan Namvar

Intermediate Macroeconomics (Undergraduate) Fall 2017, Spring 2018

Instructors: Irasema Alonso and Jón Steinsson

#### **Rutgers University [Evaluation]**

Genetics (Undergraduate) Fall 2013, Spring 2014, Fall 2014, Spring 2015

### INSTRUCTOR

#### **Institute of Industrial Economics of Chinese Academy of Social Sciences**

Macroeconomics (1st-year PhD level, equiv. 1.5 credit minicourse) Summer 2018

### LAB MENTOR

#### **Rutgers University**

Mentored pre-med, master and PhD students during their lab rotations 2011-2015

### FELLOWSHIPS

Dissertation Fellowship, 2022-2023, Columbia University

Dean's Fellowship, 2016 – 2021, Columbia University

Anne B. and James B. Leathem Fellowship, Summer 2011 – 2014, Rutgers University  
Excellence Fellowship, 2009 – 2010, Rutgers University

## PERSONAL INFORMATION

### LANGUAGES:

Chinese (native)      English (fluent)      French (intermediate)      German(basic)

- French: Diplôme de Français professionnel-Affaires B2 awarded by the Paris Chamber of Commerce
- German: Goethe-Zertifikat B1

PROGRAMMING: Python, Stata, Matlab

SPORT: player on Table Tennis women's team at Peking University (2005 – 2008) and at Columbia University (2016 – 2017)

## REFERENCES

### **Martin Uribe (co-advisor)**

Professor  
Columbia University  
(+1) 212-851-4008  
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### **Matthieu Gomez (co-advisor)**

Assistant Professor  
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### **Émilien Guin-Bonenfant**

Assistant Professor  
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