

## **RAN SONG**

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### **Yale-NUS College**

#### **Contact Information:**

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#### **Research Fields:**

Environmental Economics, Labor Economics, Development Economics

#### **Academic Employment:**

Assistant Professor, Yale-NUS College, National University of Singapore, 2020-present  
Post-Doctoral Associate, Yale MacMillan Center, Yale University, 2019-2020  
Post-Doctoral Fellow, LWP Program and Center for Green Buildings and Cities,  
Harvard University, 2017-2019

#### **Academic Affiliations:**

Wertheim Fellow, Labor and Worklife Program, Harvard University, 2015-2017  
Visiting Scholar, National Bureau of Economic Research, 2016-2019

#### **Education Background:**

PhD in Economics, Sun Yat-sen University, 2013-2017  
Master in Economics, Sun Yat-sen University, 2011-2013  
Bachelor in Management, South China University of Technology, 2005-2009

#### **References:**

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#### **Publication:**

“Willingness to Pay for Clean Air in China”, *Journal of Environmental Economics and Management*, 94 (March 1, 2019): 188–216. NBER working paper (No. w24157). with Christopher Timmins, Richard Freeman, and Wenquan Liang

“The Role of Migration Costs in Residential Sorting”, with Christopher Timmins and Wenquan Liang in *Urban Inequality and Segregation in Europe and China*, ed. Gwilym Pryce, Elsevier Inc, Chapter 4

#### **Working Paper:**

“Frictional Sorting”, with Wenquan Liang and Christopher Timmins. NBER working paper (No. w 27643)

“The Productivity Consequences of Pollution-Induced Migration in China”, with Gaurav Khanna, Wenquan Liang, and Mushfiq Mobarak.

*Presented at the Environmental and Energy Workshop and the Urban Economics Workshop at the 2019 NBER Summer Institute*

“Do Higher Minimum Wages Encourage Investment in Robots in China”, with Richard Freeman, Xueyue Liu, Zhikuo Liu, and Ruixiang Xiong

### **Work in Progress:**

“Migration restriction, Left-behind Children and Remittance”, with Mushfiq Mobarak and Wenquan Liang

“Migration Costs and the Valuation of Climate Amenities in China”, with Christopher Timmins, Wenquan Liang and Lala Ma

“Information and Hedonic Valuation”, with Christopher Timmins and Xuwen Gao

### **Teaching Experience:**

Intermediate Econometrics, Yale-NUS College, 2020-2021

### **Conference and Seminar Presentations:**

2019-2020

Duke University, Harvard Business School, Harvard Economics Department, Harvard Kennedy School, NBER, Yale University, Chinese University of Hongkong, City University of Hongkong, Clark University, Lingnan University, Northeastern University Nankai Yale Development Conference, Shanghai University of Finance and Economics, Shanghai Jiao Tong University, The 4th Biennial Conference of China Development studies

2017-2018

Harvard Economics Department, Harvard Kennedy School, The 3rd Biennial Conference of China Development Studies, Camp Resources

### **Abstract of Papers:**

#### **“Frictional Sorting”**

Using an equilibrium sorting model and rich micro data, we evaluate the impacts of constraints on mobility and housing supply on workers’ sorting behavior and quantify the resulting aggregate welfare changes in China. We find that lowering migration costs induces workers to resort from inland cities into coastal cities and from small cities to large cities, with a welfare gain of \$338.68 for an average Chinese worker. Relaxing housing supply constraints has a smaller re-sorting effect, yielding an average welfare gain of \$179.04. Results highlight the extent to which reducing frictions in spatial sorting can increase well-being by moving workers from under- to highly-developed regions.

#### **“The Productivity Consequences of Pollution-Induced Migration in China”**

Migration and pollution are two of the defining features of China’s impressive growth performance over the last 30 years. In this paper we study the migration response to the dispersion of pollution across Chinese cities, and its consequences for productivity and welfare. We document a robust pattern in which college-educated workers respond more strongly to pollution than the unskilled by emigrating. Their greater sensitivity to air quality holds up in cross-sectional variation across cities, panel variation with city fixed-effects, in a regression discontinuity, and when instrumenting for pollution using power-plants upwind of cities, or with thermal inversions that trap pollution. Pollution therefore changes the spatial distribution of skilled and unskilled workers, which results in higher returns to skill in cities that the educated migrate away from. We quantify the loss in aggregate productivity and welfare due to this sorting by estimating a model of demand and supply of skilled and unskilled workers across Chinese cities. Reducing pollution increases GDP both by directly improving health and productivity, and indirectly by changing the spatial distribution of skilled and unskilled workers. Counterfactual simulations show that gains through the indirect spatial sorting channel are about as large as the direct health benefits of clean air.