

# Christopher D. Cotton

Columbia University  
Department of Economics  
New York, NY 10027

[christopher.cotton@columbia.edu](mailto:christopher.cotton@columbia.edu)  
[www.cd cotton.com](http://www.cd cotton.com)  
(+1) 917-340-8444

Placement Chair: Martin Uribe, [mu2166@columbia.edu](mailto:mu2166@columbia.edu), (+1) 212-851-4008  
Placement Assistant: Amy Devine, [aed2152@columbia.edu](mailto:aed2152@columbia.edu), (+1) 212-854-6881

## Education

PhD in Economics, Columbia University, 2019 (expected)  
MA in Economics, Toulouse School of Economics, 2013  
BSc in Economics, London School of Economics, 2011

## Fields of Specialization

Macroeconomics, Monetary Economics

## Job Market Paper

### **The Inflation Target and the Equilibrium Real Rate**

*Many economists have proposed raising the inflation target to reduce the probability of hitting the zero lower bound. It is believed that raising the inflation target will not affect the equilibrium real rate. I demonstrate that once we incorporate agent heterogeneity into a standard New Keynesian model, raising the inflation target will lower the equilibrium real rate. In a calibrated model, I find that a rise in the inflation target of 2p.p. generates a fall of between [0.1]p.p. and [0.8]p.p. in the equilibrium real rate. This implies that a rise in the inflation target will raise the average nominal interest rate by less than 2p.p. and thus reduce the probability of hitting the effective lower bound by less than expected.*

## Other Working Papers

### **An Alternative Behavioral New Keynesian Model**

*Gabaix argues that sparse dynamic programming can resolve paradoxes in the New Keynesian model. I demonstrate that some of his results hold only because the consumer never fully learns. Once we allow for the consumer to fully learn, however slowly, passive monetary policy can never be determinate and there is no bound to the impact of a persistent negative rate shock.*

### **Equilibrium in a Generalized Overlapping Generations Framework**

*I investigate the equilibrium of a generalized overlapping generations model with any number of cohorts and monopolistic competition. I demonstrate that there is typically a unique steady state and that any steady state has a positive equilibrium real rate and no asset bubbles. This contrasts to the classical case where there are often multiple equilibria with negative real rates or asset bubbles. I also provide results on how the equilibrium real rate responds to changes in the structural parameters of the economy.*

### **Macroeconomic Revisions as Shocks** (with Emi Nakamura and Jón Steinsson)

*Recent work has attempted to make use of macroeconomic revisions as economic shocks to policy and beliefs. We demonstrate that, although this approach might appear promising, omitted variable bias and the endogeneity of revisions themselves implies this approach is, unfortunately, uninformative about the sources of business cycles. Similar concerns arise in the context of using revisions as shocks in other contexts.*

## Work in Progress

### **Big Data Evidence on Information Acquisition**

*I analyse the extent of learning following shocks using novel data on website access. I analyse the extent to which*

*internet users access individual Wikipedia pages and overall website domains. I assess which categories of pages become more or less popular following shocks. I am able to determine which types of information agents choose to read about and whether they choose to learn for the future.*

## Fellowships and Awards

Dissertation Fellowship, Columbia University, 2018-2019  
Dean's Fellowship, 2013-2018  
Vickrey Prize, 2016 (runner-up, best 3rd year paper)  
Harriss Prize, 2015 (runner-up, best 2nd year paper)  
Jean-Jacques Laffont Scholarship, Toulouse School of Economics, 2012-2013  
University of Toulouse 'Prix d'Excellence', 2012

## Research Experience

Dissertation Fellow, Federal Reserve Board (Monetary Studies), Summer 2018  
Research Assistant for Serena Ng, Summer 2017  
Research Assistant for Emi Nakamura and Jón Steinsson, Summer 2016  
Research Assistant for Emi Nakamura and Jón Steinsson, Summer 2014

## Teaching Experience

Intermediate Macroeconomics: Spring 2017, Spring 2018; TA for Jón Steinsson; Columbia  
Macroeconomics I for MA: Fall 2016, Fall 2017; TA for Ron Miller; Columbia  
Macroeconomics II for MA, Spring 2016; TA for Irasema Alonso; Columbia  
Advanced Macroeconomics; Fall 2015; TA for Irasema Alonso; Columbia  
Introduction to Econometrics; Fall 2014, Summer 2015; TA for Seyhan Erden; Columbia  
Time Series; Spring 2015; TA for Seyhan Erden; Columbia  
Economics Instructor; Summer 2014; Oxbridge Academic Experience (pre-college classes)

## Professional Experience

Summer Intern, UK Government Economic Service, 2012  
Summer Intern, Goldman Sachs, 2010

## Personal

Citizenship: United Kingdom  
Languages: English (Native), French (Good)

## References

Jón Steinsson (co-advisor)  
Chancellor's Professor of Economics  
University of California, Berkeley  
(+1) 510-642-3674  
jsteinsson@berkeley.edu

Michael Woodford (co-advisor)  
John Bates Clark Professor of Political Economy  
Columbia University  
(+1) 212-854-1094  
michael.woodford@columbia.edu

Jennifer La'O  
Assistant Professor of Economics  
Columbia University  
(+1) 212-854-0474  
jenlao@columbia.edu

# Agnieszka Dorn

Department of Economics, Columbia University  
420 W 118<sup>th</sup> St., New York, NY 10027

Phone: 6464219870  
Email: a.dorn@columbia.edu

Placement Chair: Martin Uribe, (+1) 212-851-4008, mu2166@columbia.edu

Placement Assistant: Amy Devine, (+1) 212-854-6881 aed2152@columbia.edu

## Education

2013-	(In Progress) PhD in Economics	Columbia University
2013	MSc in Mathematics	University of Warsaw
2011	MSc in Economics	University of Warsaw

## Fields of Interest

Macroeconomics, Labor Economics

## Honors and Awards

2018-2019	Dissertation Fellowship, Columbia University
2013-2018	Deans Fellowship, Columbia University

## Job Market Paper: "The Cyclicity of Wages and Match Quality"

I estimate the cyclicity of real wages for job stayers, hires from employment and from unemployment, using an administrative matched employer-employee dataset from Germany. I find that the wages of new hires appear to be *less* procyclical than the wages of job stayers. I propose an explanation based on countercyclical selection on match quality - when aggregate productivity is low, worker-firm matches have to be unusually productive to warrant formation. The presence of the match quality selection effect is supported by the relationship between the initial aggregate conditions and subsequent risk of separation. Jobs started when unemployment is high are at a decreased risk of ending with a separation to unemployment. Finally, I show that a Diamond-Mortensen-Pissarides search and matching model with match-specific productivity and hiring costs is consistent with empirical findings.

## Work in Progress

"How Dangerous is Godfather? Job-to-Job Transitions and Wage Cuts."

"Employment Elasticities - A Granular Approach." (with Mumtaz Hussain and Younes Zouhar, IMF)

## Conferences

2018 ECB Forum on Central Banking – Young economists' session

## Research Experience

Summer 2018	The Fund Internship Program, the International Monetary Fund
-------------	--

## Teaching Experience

Fall 2017	Introduction to Econometrics, Prof. Seyhan Erden, Columbia University
Spring 2017	Behavioral Finance, Prof. Harrison G. Hong, Columbia University
Fall 2016	Intermediate Macroeconomics, Prof. Xavier Sala-I-Martin, Columbia University
Spring 2016	Intermediate Macroeconomics, Prof. Irasema Alonso, Columbia University
Fall 2015	Introduction to Econometrics, Prof. Seyhan Erden, Columbia University
Spring 2015	Introduction to Econometrics, Prof. Seyhan Erden, Columbia University
Fall 2014	Principles of Economics, Prof. Anna Musatti, Columbia University

## Other

Computer Skills: STATA, R, Matlab, Python, C++

Languages: English (fluent), German (intermediate), Polish (native), Russian (elementary)

## References

Andres Drenik (co-advisor)	Jón Steinsson (co-advisor)	Andreas Mueller
Columbia University	University of California, Berkeley	Columbia Business School
(+1) 650-888-8349	(+1) 510-642-3674	(+1) 212-854-0248
ad3376@columbia.edu	jsteinsson@berkeley.edu	amueller@columbia.edu

## Jiayin Hu

### **Contact Information:**

(917) 868-6157

[jiayin.hu@columbia.edu](mailto:jiayin.hu@columbia.edu)

Placement Chair: Martin Uribe

(212) 851-4008

[mu2166@columbia.edu](mailto:mu2166@columbia.edu)

Placement Assistant: Amy Devine

(212) 854-6881

[aed2152@columbia.edu](mailto:aed2152@columbia.edu)

### **Education:**

Ph.D. Candidate in Economics, Columbia University, 2014-2019 (expected)

B.A., School of Economics and Management, Tsinghua University, 2014

Exchange Student, Wharton School, University of Pennsylvania, 2012

### **Fields of Specialization:**

*Primary Field:* Banking and Financial Intermediation

*Secondary Field:* Macroeconomics

### **References:**

Patrick Bolton (Main Advisor)

José Scheinkman

Barbara and David Zalaznick Professor of  
Business and Professor of Economics

Charles and Lynn Zhang Professor of Economics

[pb2208@columbia.edu](mailto:pb2208@columbia.edu)

[js3317@columbia.edu](mailto:js3317@columbia.edu)

(212) 854-9245

(212) 854-3679

Harrison Hong (Teaching)

John R. Eckel Jr. Professor of Financial  
Economics

[hh2679@columbia.edu](mailto:hh2679@columbia.edu)

### **Job Market Paper:**

Regulating Shadow Banks: Financial Innovation versus Systemic Risk

Abstract: I develop a model emphasizing regulatory deterrence as a solution to the dilemma between fostering financial innovation and reducing systemic risk. Under asymmetric information, ex ante prohibition of shadow banking impede beneficial innovation, while lax regulation permitting an unregulated sector induces regulatory arbitrage, weakening the effects of traditional monetary and regulatory policies. When innovation is costly, non-innovative shadow banks gain an unfair advantage in competition, eventually crowding out innovative ones and increasing systemic risk. I show that the designation authority, which allows the regulator to collect information and impose punishment, deters excessive risky-taking activities.

- An earlier version presented at 2017 Macro Financial Modeling Summer Session for Young Scholars (poster session)

**Work in Progress:**

To Float or Not to Float? A Model of Money Market Fund Reform.

Abstract: This paper argues that the floating net asset value (NAV), compared to stable NAV, may lead to more self-fulfilling runs in a coordination game with imperfect information a la Angeletos and Werning (2006). I show that constraints on investors' information acquisition capacity could reverse the effect when constrained investors shift to the outside option (safe deposits). The implications are consistent with a surge in conversion from prime funds into government funds right before the reform was implemented in 2016.

Optimal Deposit Insurance Coverage Limit.

Abstract: Why aren't deposits fully insured? I examine the optimal level of deposit insurance coverage limit in a model with both self-fulfilling and fundamental-driven bank runs and highlight the bank profitability channel of insurance costs. An increase in the insurance cap lowers the probability of self-fulfilling runs, but raises the payout cost when a bank run does occur. A self-funded deposit insurance may charge a higher premium on banks, which erodes banks' profits and makes them more vulnerable to runs, especially when interest rate spread is narrow.

**Referee:**

International Journal of Central Banking

**Honors, Scholarships, and Fellowships:**

2018-2019	Dissertation Fellowship, Department of Economics, Columbia University
2016-2017	Angell Fellowship, Department of Economics, Columbia University
2014-2018	Dean's Fellowship, Department of Economics, Columbia University
2011, 2013	National Academic Scholarship (2x), Ministry of Education, China
2010-2014	First Class Freshman Scholarship, Tsinghua University
2010	First Place in College Entrance Examination, Hunan Province, China

**Research Experience and Other Employment:**

2017 Summer	Instructor, Principles of Economics, Summer School, Columbia University
2016 Summer	Consultant, Department of Economic and Social Affairs, United Nations
2015 Summer	Intern, Department of Economic and Social Affairs, United Nations
2014 Summer	Intern, International Finance Division, Research Bureau, People's Bank of China

**Other Professional Activity:**

2016-2017	President, Association of Graduate Economics Students, Columbia University
-----------	--

**Teaching Experience:**

*Columbia University*

2018 Spring    GU4860: Behavioral Finance, TA for Professor Harrison Hong  
2017 Fall,     UN3213: Intermediate Macroeconomics, Head TA for Professor Xavier Sala-i-Martin  
2016 Fall  
2017 Spring    UN3213: Intermediate Macroeconomics, TA for Professor Irasema Alonso  
2016 Spring    UN3025: Financial Economics, TA for Professor Sally Davidson  
2015 Fall       UN1105: Principles of Economics, TA for Professor Sunil Gulati

*Tsinghua University*

2014 Spring,   Principles of Economics, TA for Professors Yingyi Qian and Xiaohan Zhong  
2013 Fall  
2013 Fall       Critical Thinking and Moral Reasoning, TA for Professor Bin Yang

**Personal:**

Gender: Female	Citizenship: China	Date of Birth: September 12, 1993
Language: : English (Fluent), Mandarin (Native)		Programming: Matlab, R, Stata

# Yoon J. Jo

10/26/2018

Department of Economics  
Columbia University  
New York, NY 10027

206-658-7556  
[yj2304@columbia.edu](mailto:yj2304@columbia.edu)  
<https://sites.google.com/view/yoonyoojo/>

Placement Chair: Martin Uribe, [mu2166@columbia.edu](mailto:mu2166@columbia.edu)  
Placement Assistant: Amy Devine, (212) 854-6881, [aed2152@columbia.edu](mailto:aed2152@columbia.edu)

## Education:

2019 (expected)	Ph.D. Economics	Columbia University
2013	M.A. Economics	University of Washington, Seattle
2011	M.A. Economics	Seoul National University, Korea
2009	B.S. Mathematical Science	Korea Advanced Institute of Science and Technology (KAIST)
2007-2008	Student Exchange Program	National University of Singapore

## Fields of Specialization:

*Primary Field:* Macroeconomics

*Secondary Field:* International economics, Labor economics

## Job Market Paper:

### “Downward Nominal Wage Rigidity in the United States”

**Abstract:** This paper uses two nationally representative household surveys, the Current Population Survey (1979-2017) and the Survey of Income and Program Participation (1984-2013), to establish the existence and cyclical pattern of downward nominal wage rigidity in the United States. The distribution of individual workers’ year-over-year changes in nominal hourly wages has a large spike at zero and is asymmetric, with many more wage increases than cuts. The distribution also exhibits a notable cyclical pattern: the share of workers with no wage changes, which accounts for the spike at zero, has greater countercyclical fluctuations compared to the share of workers with wage cuts. This finding, which is novel in the literature, suggests that downward nominal wage rigidity exists, with potentially important implications for fluctuations in employment. Finally, I compare heterogeneous agent models with five different wage-setting schemes—perfectly flexible, Calvo, long-term contracts, menu costs, and downward nominal wage rigidity—and show that only the model with downward nominal wage rigidity is consistent with the empirical findings regarding the shape and cyclicity of the wage change distribution.



## **Working Papers:**

“Estimating the Welfare Gains from E-Commerce: A Price Arbitrage Approach”  
(with Misaki Matsumura and David E. Weinstein)

## **Honors and Awards:**

2018-2019	Dissertation Fellowship, Department of Economics, Columbia University
2018	AEA Summer Fellowship
2017 - 2018	The Ralph Erdman Holben Fund
2016	Vickrey Prize for Best 3 <sup>rd</sup> Year Paper (runner-up), Columbia University
2013-2018	Dean’s Fellowship, Columbia University
2011-2012	Corkery Fellowship, University of Washington
2009-2011	Brain Korea 21 Research Scholarship, Seoul National University
2004-2008	National Science and Technology Scholarship, Korea Science and Engineering Foundation

## **Research and Work Experience:**

Summer 2018	CSWEP Dissertation Fellow, Federal Reserve Bank of Chicago
2016 – 2017	Research assistant for Professor Schmitt-Grohé and Professor Uribe
Summer, 2014	Research Intern, Rakuten Institute of Technology, New York

## **Teaching Experience:**

Spring 2018	TA for International Macroeconomics, Columbia University
Fall, 2017	Empirical Methods for Undergraduate Thesis, Columbia University
Spring, 2017	TA for Topics in Economic Analysis (Prof. Uribe), Columbia University
Spring, 2016	TA for Intermediate Macroeconomics (Prof. Uribe), Columbia University
Fall, 2015	TA for Intermediate Macroeconomics (Prof. Guaitoli), Columbia University
Summer, 2015	TA for International Trade, Columbia University
Spring, 2015	TA for Intermediate Macroeconomics (Prof. Schmitt-Grohé), Columbia University
Fall, 2014	TA for Intermediate Macroeconomics (Prof. Sala-I-Martin), Columbia University
2012 – 2013	TA for Intro to Microeconomics (Prof. Salehi-Esfahani), University of Washington

## **References:**

Stephanie Schmitt-Grohé  
Professor of Economics  
Columbia University  
(212) 851-4010  
[ss3501@columbia.edu](mailto:ss3501@columbia.edu)

Martín Uribe  
Professor of Economics  
Columbia University  
(212) 851-4008  
[mu2166@columbia.edu](mailto:mu2166@columbia.edu)

David E. Weinstein  
Carl S. Shoup Professor of the  
Japanese Economy  
Columbia University  
(212) 854-6880  
[dew@columbia.edu](mailto:dew@columbia.edu)

**ANDREW KOSENKO**  
Curriculum Vitae, Fall 2018

Department of Economics  
University of Pittsburgh  
4901 Wesley W. Posvar Hall  
230 South Bouquet Street  
Pittsburgh, PA 15260

Email: [ak2912@columbia.edu](mailto:ak2912@columbia.edu)  
Web: [andrewkosenko.com](http://andrewkosenko.com)

**Academic Appointments**

Visiting Assistant Professor, Dept. of Econ, University of Pittsburgh	August 2018 - April 2019
Instructor, Katz Graduate School of Business, University of Pittsburgh	Jan 2019 - April 2019
Visiting Scholar, Department of Economics, University of Pittsburgh	June 2018 - July 2018

**Education**

2018	Ph.D.	Economics	Columbia University
Dissertation: <i>Essays in Economic Theory: Strategic Communication and Information Design</i> .			
Committee: Navin Kartik (advisor), Yeon-Koo Che (chair), Joseph E. Stiglitz, Rajiv Sethi, Allison Carnegie.			
2015	M.Phil.	Economics	Columbia University
2014	M.A.	Economics	Columbia University
2010	M.A.	Quant. Methods in Soc. Sci.	Columbia University
2008	B.A.	Economics	New York University
2008	B.A.	European Studies	New York University

**Fields of Specialization and Research Interest**

Economic theory, economics of information, behavioral economics, neuroscience of learning and memory, time series analysis.

**Working Papers and Work in Progress** (see website for up to date drafts)

- *Job Market Paper*: “Mediated Persuasion” (2018)
- “Memory as a Constructive Process” (in progress)
- “Multisender Information Structures and Preference Restrictions” (in progress)
- “Convergence of Beliefs in Repeated Games: An Application of the Large Deviations Principle” (in progress)
- “Bayesian Persuasion with Private Information” (2018)
- “Characterization, Existence and Pareto Optimality in Insurance Markets with Asymmetric Information with Endogenous and Asymmetric Disclosures: Revisiting Rothschild-Stiglitz” (with Joseph E. Stiglitz and Jungyoll Yun, 2018)
- “Things Left Unsaid: The Belief-Payoff Monotonicity Refinement” (2018)

**Seminar Presentations** (incl. scheduled)

Pitt Micro Theory Brown Bag Seminar  
October 2018

Stony Brook Game Theory Festival/International Conference

July 2018

Columbia Microeconomic Theory Colloquium

Fall 2013, Spring 2014, Fall 2014, Spring 2015, Fall 2015, Spring 2016, Fall 2016, Spring 2017, Fall 2017

Columbia Political Economy Breakfast Colloquium

Fall 2014

### Teaching Experience (Instructor) (incl. scheduled)

Spring 2019	Applied Behavioral Economics (MBA)	Pitt Katz School of Business
Spring 2019	Game Theory (undergraduate)	Pitt
Summer 2018	Intro to Mathematical Methods (economics PhD program)	Pitt

### Teaching Experience (TA)

Summers 2016 & 2017	Globalization & Markets & the Changing Economic Landscape. Profs. Bruce Greenwald and Joseph Stiglitz (Columbia Executive MBA course)
Spring 2016	Perspectives on Economic Studies (first year economics PhD course). Prof. Joseph Stiglitz (Columbia)
Fall 2015	Financial Crises. Prof. Jose Scheinkman (Columbia)
Summer 2015	Principles of Economics. Inst. Evan Plous (Columbia)
Spring 2015	Hist. Foundations of Modern Econ. Prof. Andre Burgstaller (Barnard College)
Fall 2014	Financial Crises. Prof. Jose Scheinkman (Columbia)
Summer 2014	Principles of Economics. Inst. Xing Xia (Columbia)
Fall 2013	Financial Crises. Prof. Jose Scheinkman (Columbia)
Fall 2010	Economics of Immigration. Prof. David Bernotas (UCSD)
Winter & Spring 2011	Principles of Macroeconomics. Prof. Valerie Ramey, Inst. Laura Gee (UCSD)
Fall 2009	Introduction to Economic Reasoning. Prof. David Weiman (Barnard College)

### Research Experience (only full-time positions listed)

- Research assistant for Joseph E. Stiglitz (University Professor, Columbia Department of Economics, Business School and SIPA)  
Summer 2016, Fall 2016, Spring 2017, Summer 2017
- Research assistant for Alessandra Casella (Professor, Columbia Department of Economics)  
Spring 2014
- Research assistant for Mark Orr (Merit Fellow, Columbia Mailman School of Public Health, Department of Epidemiology)  
Fall 2011 – Fall 2012

## Professional Experience

- Intern, Economics, Energy and Business Bureau (EEB), U.S. Department of State, Washington, D.C.  
Summer 2008
- Departmental Advisor (for undergraduate students majoring or interested in economics), Department of Economics (Columbia)  
Fall 2015, Spring 2016, Fall 2016, Spring 2017

## Honors and Awards

2017-2018	Dissertation Fellowship, Columbia University
2012-2017	Dean's Fellowship, Columbia University
2010-2011	Graduate Fellowship, University of California, San Diego
2005	Study Abroad Scholarship (Paris), New York University
2004-2008	Maurice Feinberg Memorial Scholarship, New York University

## Personal

Citizenship: USA and Ukraine. Fluent in Ukrainian and Russian, intermediate French and basic German. Matlab, Mathematica, R, zTree, LaTeX, NetLogo, Python (beginner).

## References

**Navin Kartik** (advisor, primary reference)  
Professor  
Department of Economics  
Columbia University  
(212) 854-3926  
nk2339@columbia.edu

**Joseph E. Stiglitz**  
University Professor  
Department of Economics, SIPA & GSB  
Columbia University  
(212) 854-1481  
jes322@gsb.columbia.edu

**Yeon-Koo Che**  
Kelvin J. Lancaster Professor of Economic Theory  
Department of Economics  
Columbia University  
(212) 854-8276  
yc2271@columbia.edu

**Jose A. Scheinkman** (teaching reference)  
Charles and Lynn Zhang Professor  
Department of Economics  
Columbia University  
(212) 854-2507  
js3317@columbia.edu

## Xuan Li

October, 2018

Department of Economics  
Columbia University  
New York, NY 10027

Phone: (347) 601-3772  
Email: [xl2404@columbia.edu](mailto:xl2404@columbia.edu)  
Website: <https://sites.google.com/site/xuanlieconomics/>

Placement Chairs: Navin Kartik, [nk2339@columbia.edu](mailto:nk2339@columbia.edu)

Yeon-Koo Che (Spring), [yc2271@columbia.edu](mailto:yc2271@columbia.edu)

Placement Assistant: Amy Devine, (212) 854-6881, [aed2152@columbia.edu](mailto:aed2152@columbia.edu)

### Education:

2019 (expected)	Ph.D. Economics	Columbia University
2016	M.Phil. Economics	Columbia University
2015	M.A. Economics	Columbia University
2013	B.A. Economics & Mathematics	Tsinghua University

### Fields of Specialization:

Labor Economics, Behavioral Economics, Development Economics, Economics of Education

### Job Market Paper:

*The Productivity Costs of Workplace Favoritism: Evidence from Promotions in Chinese High Schools.*

*Abstract:* This paper studies the productivity consequences of favoritism in employee promotions within an organization. Using data from public high schools in four Chinese cities, I first show that teachers with hometown or college ties to the school principal are twice as likely to be promoted. I then use the results from a survey in which I asked teachers to select an anonymous peer to promote from a pool of applicants applying for promotion to infer each teacher's revealed fairness views. Contrasting these with actual past promotions in turn allows me to measure if and when a teacher observed unfair promotions in her own school in the past. I show that exposure to unfair promotions adversely affect *non-applicant* teachers' output, lowering their value-added in teaching and raising the probability that high-value-added teachers quit. The productivity effect appears to be driven primarily by the teachers' social preferences for their peers and consequent eroded morale when peers suffer unfair treatment, while the quitting effect comes mainly from unfavored prospective applicants learning about the principal's bias and leaving due to poor promotion prospects. These adverse effects are far from offset by increased productivity from favored teachers so favoritism substantially reduces school-wide output. Finally, I show that a transparency reform that required principals to disclose the profiles of teachers that apply for promotion to their peers reduced the principals' bias and improved the overall productivity of schools, pointing towards policy tools that can help address the adverse productivity consequences of favoritism in employee promotions.

## **Working Papers:**

*Daily Income Targeted Labor Supply: Evidence from Manufacturing Workers.*

- An earlier version awarded Harriss Prize for Best 2nd Year Paper, Department of Economics, Columbia University.

*Abstract:* Using a novel dataset on the daily production of a group of piece-rate manufacturing workers combined with their daily income shocks from lunch break card game gambling, this paper shows that the workers' afternoon labor supply responded negatively to instantaneously paid gambling income, although wages were monthly paid. The workers' behavior was consistent with reference-dependent labor supply where the target was set on daily face-valued sum of gambling and labor incomes. Structural estimation yields a coefficient of loss aversion from 1.8 to 2.0, significantly different from the neoclassical value of 1; and individual-specific loss aversion estimates correlate positively with survey measures. This study overcomes the common identification issues in the daily labor supply literature by exploiting high-frequency, actively taken-up and unanticipated income shifters that were independent of other labor supply and demand confounders.

## **Research in Progress:**

*The Star Illusion: High School Choice, Peer Quality and Value-Added.*

*Abstract:* Whether and what information on school quality influences parents' school choices is important to understanding whether and how school market competition affects students' academic outcomes. In the setting of elite public high schools in a Chinese province, I show that rather than overall performance measures of the entire graduating cohort, parents of prospective students at all ability levels care about performance at the extreme right tail: the number of "star" graduates who enter top universities, although it is largely random and not informative of the value-added received by students on average. Star-productive schools therefore attract students of better quality. However, the influence of consequent higher peer quality on the value-added a student receives is heterogeneous and increasing in the student's own ability: positive for high achieving students and negative for those at the bottom. This implies that at least the parents of low achieving students are irrational in over-responding to the star information in their school choices.

*Implicit Son Preference in Household Survey Data: Evidence from the CPS,* joint with Douglas Almond.

*Uniform Across-Country Wage-Setting in Large Multinationals,* joint with Jonas Hjort, Hannes Malmberg and Heather Sarsons.

## **Research Assistantships:**

Prof. Doug Almond, Columbia, Spring 2017 - Spring 2018

Prof. Christopher Moser, Columbia University, Summer 2016

Prof. W. Bentley MacLeod, Columbia University, Spring 2015 & Spring 2016

Prof. Miguel S. Urquiola, Columbia University, Fall 2014

Prof. Stefano DellaVigna, UC Berkeley, Summer 2013

**Teaching Experience:**

Instructor, *Math Camp for PhD Students in Economics*, Columbia University, Summer 2017

Teaching assistant, *Intermediate Microeconomics* (undergraduate level), Prof. Susan Elmes, Columbia University, Fall 2016

Teaching assistant, *Econometrics I* (M.A. level), Prof. George Olley, Columbia University, Fall 2015, Wueller Teaching Award (Runner-up)

**Honors and Awards:**

Dissertation Fellowship, Department of Economics, Columbia University, 2018-2019

Faculty Fellowship, Department of Economics, Columbia University, 2013-2018

Trudy and Paul Woodruff Fellowship, Columbia University, 2016-2017

Chi-Ming Hou Memorial Fellowship, Columbia University, 2015-2016

First Class Freshman Scholarship, Tsinghua University, 2009-2013

**Personal:**

Languages: English (Fluent), Mandarin (Native), Cantonese (Native)

Programming: Matlab, R, Stata

**References:**

W. Bentley MacLeod (Sponsor)  
Sami Mnaymneh Professor of Economics  
Department of Economics &  
School of International and Public Affairs  
Columbia University  
(310) 571-5083  
[bentley.macleod@columbia.edu](mailto:bentley.macleod@columbia.edu)

Jonas Hjort  
Associate Professor of Economics  
Graduate School of Business  
Columbia University  
(212) 854-5957  
[hjort@columbia.edu](mailto:hjort@columbia.edu)

Douglas Almond  
Professor  
Department of Economics &  
School of International and Public Affairs  
Columbia University  
(212) 854-7248  
[da2152@columbia.edu](mailto:da2152@columbia.edu)

# Misaki Matsumura

October 2018

Department of Economics  
Columbia University  
New York, NY 10027

347-429-0687  
[mm4387@columbia.edu](mailto:mm4387@columbia.edu)  
[Personal Website](#)

Placement Chair: Martin Uribe, (212) 851-4008,  
Placement Assistant: Amy Devine, (212) 854-6881,

[mu2166@columbia.edu](mailto:mu2166@columbia.edu)  
[aed2152@columbia.edu](mailto:aed2152@columbia.edu)

## Education:

2013-2019 (expected)	Ph.D. Economics	Columbia University
2010-2012	M.A. Human and Environmental Studies	Kyoto University
2006-2010	B.A. Integrated Human Studies	Kyoto University

## Fields of Specialization:

International Macroeconomics, Monetary Economics, and Finance

## Job Market Paper:

“What Price Index Should Central Banks Target? An Open Economy Analysis”

Abstract: There is currently a debate over the choice of the price index that central banks should target when economies are open and exposed to international price shocks. This paper derives the optimal price index by solving the Ramsey problem in a New Keynesian small open economy model with an arbitrary number of sectors. Qualitatively, I compare its analytical expression with other popular indices such as the producer price index and the core/headline consumer price index, providing intuitive explanations for why targeting those indices is suboptimal. Quantitatively, I calibrate a 35-sector version of the model for 40 countries and show that stabilizing the optimal price index yields significantly higher welfare than doing so for alternative indices.

## Working Papers:

“Intensive Margin of the Volcker Rule: Price Quality and Welfare,” with Sakai Ando, conditionally accepted, *Journal of Financial Intermediation*.

“Constrained Efficiency of Competitive Entrepreneurship,” with Sakai Ando, submitted.

“Estimating the Welfare Gains from E-Commerce: A Price Arbitrage Approach,” with Yoon J. Jo and David E. Weinstein.

## Work in Progress:

“Optimal Monetary Policy in Production Networks,” with Jennifer La’O.



## Research and Work Experience:

2018	CSWEP Dissertation Fellow	Federal Reserve Bank of Dallas
2017	Research Assistant for Prof. Neng Wang	Columbia University
2017	Research Assistant for Prof. David E. Weinstein	Columbia University
2016	Japan-IMF Scholarship Program Summer Intern	International Monetary Fund
2015	Research Assistant for Prof. Jón Steinsson,	Columbia University
2014	Research Intern	Rakuten Institute of Technology
2012-2013	Research Assistant for Prof. Makoto Yano	Kyoto University
2012-2013	Research Assistant for Prof. Atsushi Kajii	Kyoto University

## Teaching Assistantships:

2016 Fall	Economic Development of Japan	Columbia University
2016 Spring	Public Economics	Columbia University
2015 Fall	Introduction to Econometrics (Ph.D. core)	Columbia University
2010-2011	Seminar on Public Policy	Kyoto University
2010-2011	Introductory Economics with Calculus	Kyoto University

## Honors and Awards:

2018	Dissertation Fellowship, Columbia University
2018	Summer Fellowship, American Economic Association
2016	Wueller Pre-dissertation Award, Columbia University (runner-up)
2016	Wueller Teaching Award, Columbia University (runner-up)
2014	Graduate Student Research Grants and Summer Stipends, Columbia University
2013	Center on Japanese Economy and Business Doctoral Fellowship, Columbia University
2013	Sumitomo Corporation of Americas Doctoral Fellowship, Columbia University
2013	Japan-IMF Scholarship Program for Advanced Studies, International Monetary Fund
2013	Dean's Fellowship, Columbia University
2006	Kuroda Scholarship, Kuroda Foundation

## References:

David E. Weinstein Department of Economics Columbia University (212) 854-6880 <a href="mailto:dew35@columbia.edu">dew35@columbia.edu</a>	Michael Woodford Department of Economics Columbia University (212) 854-1094 <a href="mailto:mw2230@columbia.edu">mw2230@columbia.edu</a>	Martin Uribe Department of Economics Columbia University (212) 851-4008 <a href="mailto:mu2166@columbia.edu">mu2166@columbia.edu</a>
--	--	--

# Andy Pham

## Contact Information:

523 West 112<sup>th</sup> Street, Apartment 82  
New York, NY 10025  
Phone: (626) 319-4499

Email: [aqp2001@columbia.edu](mailto:aqp2001@columbia.edu)  
Site: <https://sites.google.com/view/apham/>

Placement Chairs: Martin Uribe, [mu2166@columbia.edu](mailto:mu2166@columbia.edu), Gregory Cox, [gfc2106@columbia.edu](mailto:gfc2106@columbia.edu),  
Francois Gerard, [fg2328@columbia.edu](mailto:fg2328@columbia.edu), Tobias Salz, [ts3035@columbia.edu](mailto:ts3035@columbia.edu)

Placement Assistant: Amy Devine, (212) 854-6881, [aed2152@columbia.edu](mailto:aed2152@columbia.edu)

## Education:

Ph.D in Economics (expected), Columbia University	2019
Bachelor of Arts, <i>magna cum laude</i> , Economics, University of California, Berkeley	2014
Bachelor of Arts, <i>cum laude</i> , Applied Mathematics, University of California, Berkeley	2014

## Honors and Awards:

Dissertation Fellowship, Department of Economics, Columbia University	2018-2019
Vickrey Prize for Best 3 <sup>rd</sup> Year Paper ( <i>Runner-Up</i> ), Columbia University	2017
Dean's Fellowship, Columbia University	2014-2018
High Honors, Department of Economics, University of California, Berkeley	2014
Honors, Department of Mathematics, University of California, Berkeley	2014
Phi Beta Kappa, University of California, Berkeley	2014

## Econometrics and Statistics:

Linear and non-linear regression with panel and time-series data, factor and asset pricing models, ARMA, GARCH, and ECM, state space modeling and Kalman filtering, vector auto-regressions, yield curve modeling, principal components analysis, Monte Carlo methods, supervised learning methods (Lasso, ridge regression, elastic net, and random forests using Scikit-learn), elementary artificial neural networks (perceptron/feed-forward and long short-term memory using Keras)

## Programming Experience:

Python, R, Matlab, Stata, Latex

**Fields:** International Finance, Finance, Macroeconomics

## Job Market Paper:

*Intermediary-Based Asset Pricing and the Cross-Sections of Exchange Rate Returns*

Abstract: I investigate whether fluctuations in the capital ratio of financial intermediaries provide an economic source of risk for the various cross-sections of exchange rate returns. I find that intermediary capital significantly prices the carry trade and the joint cross-section of a variety of currency portfolios, signifying the relevance of financial intermediaries as a fundamental economic source of global risk. I show that intermediary capital risk is a component of the previously identified high-minus-low (HML) carry factor of Lustig, Roussanov, and Verdelhan (2011), shedding light upon the economic sources of risk contained within this global risk factor. In addition, I show that intermediary capital remains relevant when compared with the dollar and global dollar factors identified by Verdelhan (2018), shares common variation with the latter, and that the global dollar factor purged of US-specific risk helps price the full cross-section of foreign exchange portfolios.

## Working Papers:

### *International Bank Lending and the October 2016 US Money Market Fund Reform*

Abstract: US money market funds have been a key source of dollar funding for foreign banks. I examine whether the contraction of funding from prime funds due to the October 2016 US money market fund reform affected syndicated international bank lending by foreign banks. I find that despite the large drop in funding from prime funds, partially offset by funding from government funds, the reform had no effect on the composition or volume of dollar lending. This is suggestive of foreign banks' ability to substitute for dollar funding from other sources, in line with anecdotal evidence from the BIS (2017).

### *The Role of Dollar Funding and US Monetary Policy in International Bank Lending*

Abstract: Given the dollar's dominant role in international lending, I examine whether shocks to US monetary policy as measured by high frequency identification affect international lending by global banks, contingent on their reliance on dollar funding. I find that contractionary monetary policy shocks in the previous quarter decrease international lending growth after controlling for confounding borrower demand shocks by utilizing borrower-country-quarter fixed effects à la Khwaja and Mian (2008). This effect is increasing in the fraction of dollar denominated liabilities in the lender country's banking system, a proxy for reliance on dollar denominated funding. This result remains robust to controls and sector fixed effects and I find that results are driven by a decline in lending to non-bank private sector and banking sector counterparties.

### *A Bank-Level Analysis of the Bank-Sovereign Nexus* (joint with Romain Bouis)

Abstract: We identify an unconditional negative relationship between banks' holdings of government securities and credit growth across a wide panel of banks across 20 years and over 150 countries. We find that this aspect of the bank-sovereign nexus is primarily attributed to portfolio rebalancing rather than crowding out due to moral suasion. Banks substitute away from loans towards holdings of government securities at times of distress precisely when non-performing loan ratios are high, an indication of poor quality of available lending projects and borrowers. Using system GMM, we show that banks increase their holdings of government securities following years of high NPL ratios and are more profitable in the year following this increase in holdings, suggestive of optimal rebalancing.

## Work Experience:

Fund Internship Program, International Monetary Fund, African Department Regional Studies Division 2018

- Estimated cross-sectional time-series models on an international panel of banks spanning 20 years and over 150 countries to identify the unconditional relationship between bank lending and holdings of government securities and highlight portfolio rebalancing as the primary driver in contrast to moral suasion.
- Estimated dynamic panel models using system GMM to show evidence of portfolio rebalancing motives for banks' holdings of government securities and the related impact on profitability.
- Culminated in two presentations in the African Department's Financial Networks seminar series and a working paper, *A Bank-Level Analysis of the Bank-Sovereign Nexus*, to be submitted to the IMF Working Papers series.

Ph.D Summer Intern, Barings, Emerging Markets Debt 2017

- Identified and estimated parsimonious, country-specific, linear factor models for prediction of EM equity index returns using lagged macro-fundamentals, exchange rates, and commodity prices as predictors, employing a self-designed, systematic model selection rule.
- Examined lead-lag relationships among EM equities, CDS, FX, local currency, and hard currency bonds at the country level and back-tested automated trading strategies based on estimates.
- Constructed and back-tested automated trading strategies using signals based on EM team's past portfolio changes in bond and FX positions to examine whether fundamentals views on country bond and FX returns could have also translated into returns in equities.

Software Quality Assurance Analyst, Lawrence Berkeley National Laboratory 2012-2013

**Teaching Experience:**

Finance and the Real Economy, Teaching Assistant for Matthieu Gomez, Spring 2018  
Financial Economics, Teaching Assistant for Gernot Mueller, Fall 2017  
Intermediate Macroeconomics, Teaching Assistant for Irasema Alonso, Spring 2017  
Financial Economics, Teaching Assistant for Sally Davidson, Fall 2016  
Principles of Economics, Teaching Assistant for Sunil Gulati, Fall 2015 – Spring 2016

**Invited Workshops/Talks:**

IMF African Department Financial Networks Seminar	2018
Princeton Initiative for Money, Macro, and Finance	2016
Becker Friedman Institute Macro Financial Modeling Summer Camp for Young Scholars	2016

**Other Professional Activity**

Economics Department Representative, Columbia University, Graduate Student Advisory Council	2016-2018
---	-----------

**Personal:**

Nationality: American  
Languages: English (native), French (elementary), Vietnamese (elementary)

**References:**

Richard Clarida (primary)  
C. Lowell Harris Professor of Economics and  
Professor of International and Public Affairs  
Columbia University  
212-854-3676  
rhc2@columbia.edu

Jennifer La'O (co-sponsor)  
Assistant Professor of Economics  
Columbia University  
212-854-0474  
jenlao@columbia.edu

Jón Steinsson  
Chancellor's Professor of Economics  
University of California, Berkeley  
510-642-3674  
jsteinsson@berkeley.edu

Jesse Schreger  
Assistant Professor of Macroeconomics  
Columbia Business School  
212-851-0171  
jesse.schreger@columbia.edu

Ricardo Adroque  
Head of Emerging Markets Debt  
Barings  
617-366-6700  
Ricardo.Adroque@barings.com

# Qiuying Qu

October 2018

Department of Economics  
Columbia University  
New York, NY 10027

qq2106@columbia.edu  
Tel: (917) 862-2651

## Placement Committee

Placement Chair	Martin Uribe	mu2166@columbia.edu	(212) 851-4008
Placement Assistant	Amy Devine	aed2152@columbia.edu	(212) 854-6881

## Education

Columbia University, New York, NY

Ph.D. in Economics	2019 (Expected)
M.Phil. in Economics	2016
M.A. in Economics	2015

Peking University, Beijing, China

M.A. in Economics	2013
B.A. in Economics	2011
B.A. in Sociology ( <i>Dual Degree</i> )	2011

## Fields of Specialization

Primary: Development Economics, Applied Microeconomics

Secondary: Urban Economics

## Job Market Paper

“Zombie Firms and Political Capture of Bank Lending”

*Zombie firms (indebted firms that are unprofitable and depend on banks or government bailouts for continued operation) are costly. The existence of zombie firms has been attributed to banks continuing to provide forbearance lending in their own interests. However, in the contexts of developing economies, local government, alongside banks, may be contributing to keeping zombie firms alive. Studying loans in China, I examine how bank lending is captured and tracks the appointment cycle of local government officials. I find that there is significant targeting of firms, with bank lending to zombie firms dramatically increases in the last service year of local government officials and exhibits a significant increasing trend across the appointment cycle. I also show that capture is selective: although local government officials may pressure small local banks to lend to unprofitable firms, their ability to capture large nationally operated banks is relatively limited.*

## Working Papers

“Privatization and Enterprise Performance in China: Evidence from China’s State-Owned Enterprises Reform”

*The ownership structure of China’s state-owned enterprises (SOEs) has changed dramatically over the past two decades through ownership privatization. Studies on the effect of privatization on enterprise performance are usually subject to selection bias and endogeneity problem. Based on a panel data of*

*SOEs from 1998 to 2004, this paper uses fixed effects model and propensity score matching method to estimate the effect of privatization on enterprise performance, controlling for both time-invariant and time-variant enterprise characteristics. It also uses the exogenous demarcation of the Economic and Technological Development Zones where the enterprises locate as identification strategy. In addition, it distinguishes the average effect and contemporaneous effect of each round of privatization. Within the sample, privatization leads to an overall increase in productivity, profitability, and innovation activity. Privatization reduces employment contemporaneously, but enlarges the operation scale in the long run. The gain in profitability mainly comes from the reduction in administrative expenses.*

#### **“Export Subsidies and Quality Upgrading: Evidence from Chinese Manufacturing Firms”**

*Although it is well acknowledged that export subsidy is an effective way to prompt the scale of export, its effect on the quality of products of the export firms is less evident. This paper examines the effect of export subsidy on firm's quality upgrading behavior in the context of China. To avoid potential endogeneity problem, the empirical analysis benefits from exogenous variations in export tax rebate program induced by government fiscal burden during the period of 2000 to 2006. Analyses using panel data at the product level show that export subsidy, or export tax rebate has a positive on product quality, product price and investment in advertisement, R&D activities, and human capital accumulation, which are closely related to product quality. After controlling for destination country characteristics from the demand side, export subsidy and firm characteristics from the supply side still have explanatory power on product quality. In addition, the quality effect of export subsidy is more significant for foreign-invested firms and technology intensive firms.*

#### **“Productivity Differences Across Cities: The Effect of City Size and Intermediate Input Linkages”**

*To examine the reasons behind the geographical dispersion of firm productivity across cities of different sizes, I study three mechanisms through which city size affects the productivity distribution: firm selection, agglomeration externalities, and intermediate input linkages. I develop a model which characterizes the role of each mechanism in shaping the productivity distribution in a city: left truncation and rightward shift. The quantile regression analysis, based on the dataset on Chinese manufacturing firms, shows that as city size increases, the resulting stronger selection effect moves the left truncation point to the right. Meanwhile, both the benefit from local intermediate input sector and agglomeration externalities in larger cities can mitigate this selection effect and right-shift the productivity distribution.*

#### **Published Articles**

“Impact of the 18th Birthday on Waitlist Outcomes among Young Adults Listed for Heart Transplant: A Regression Discontinuity Analysis.” With D. M. Peng, N. McDonald, S. A. Hollander, D. Bernstein, K. Maeda, B. D. Kaufman, D. N. Rosenthal, and C. S. Almond. *Journal of Heart and Lung Transplantation*, vol. 36, no. 11, pp. 1185-1191, Nov. 2017.

“The Three-Factor Model and Size and Value Premiums in China's Stock Market.” With Shiqing Xie. *Emerging Markets Finance and Trade*, vol. 52, no. 5, pp. 1092-1105, March 2016.

#### **Policy-Oriented Papers (in Chinese)**

“Challenges for Financial Stability Board.” With Shiqing Xie. *Macroeconomic Management*, 2012, no. 10, pp. 84-86. ISSN: 1004-907X, CN: 11-3199/F.

“A Comparative Study of Bank for International Settlements and International Monetary Fund.”

With Shiqing Xie. *Macroeconomics*, 2012, no. 9, pp. 36-40. ISSN: 1008-2069, CN: 11-3952/F.

“Analysis on the World Bank Voting Rights Reform.” With Shiqing Xie. *Macroeconomics*, 2010, no. 8, pp. 8-11. ISSN: 1008-2069, CN: 11-3952/F.

“Analysis on the Recent Development of Insurance Linked Securities.” With Shiqing Xie. *Insurance Studies*, 2010, no. 7, pp. 84-89. ISSN: 1004-3306, CN: 11-1632/F.

## Teaching Experience

Teaching assistant, *Columbia University*

Corporate Finance, *Spring 2016, Fall 2016, Spring 2017, Fall 2017, Spring 2018*

Urban Economics, *Fall 2015*

Game Theory, *Spring 2015*

M.A. Economic Growth and Development, *Fall 2014*

Teaching assistant, *Peking University*

International Financial Organizations, *Fall 2011, Fall 2012*

Personal Financial Management, *Summer 2011*

MATLAB Programming in Financial Engineering, *Spring 2012*

## Honors and Awards

Dissertation Fellowship, <i>Columbia University</i>	2018-Present
Dean's Fellowship, <i>Columbia University</i>	2013-2017
Master Academic Excellence Scholarship, <i>Peking University</i>	2011-2012
Merit Student (University top 1%), <i>Peking University</i>	2011
China National Scholarship	2010
Leo KoGuan Scholarship	2010
Shenzhen Development Bank Scholarship	2009
Youth Scholarship, <i>Peking University</i>	2007

## Personal

Programming: Stata, R, MATLAB

Languages: English (fluent), Chinese (native)

Certification: Passed all three levels of the Chartered Financial Analyst (CFA) Program

Interests: Piano, Chinese folk dance

## References

**Eric Verhoogen (Primary)**  
 Professor  
 Department of Economics  
 Columbia University  
 (212) 854-4428  
 eric.verhoogen@columbia.edu

**Jack Willis**  
 Assistant Professor  
 Department of Economics  
 Columbia University  
 (857)-928-1494  
 jw3634@columbia.edu

**Michael Best**  
 Assistant Professor  
 Department of Economics  
 Columbia University  
 (212) 851-9485  
 mcb2270@columbia.edu

# Anurag Singh

Department of Economics  
Columbia University  
New York, NY 10027

(206)-747-8476  
[anurag.singh@columbia.edu](mailto:anurag.singh@columbia.edu)  
<https://s-anurag.github.io/>

Placement Chairs: Martín Uribe, [mu2166@columbia.edu](mailto:mu2166@columbia.edu)

Placement Assistant: Amy Devine, (212) 854-6881, [aed2152@columbia.edu](mailto:aed2152@columbia.edu)

## Education:

2019 (expected)	Ph.D. Economics	Columbia University
2012	M.A. Economics	Delhi School of Economics
2008	B.Tech. Mechanical Eng.	Indian Institute of Technology (IIT), Bombay

## Fields of Specialization:

Macroeconomics, International Macroeconomics, International Finance

## Job Market Paper:

### *Clustered Sovereign Defaults*

Abstract: Clustered sovereign defaults are a recurring phenomenon. In order to understand the nature of shocks and the mechanism through which these shocks lead countries to clustered defaults, the paper starts with a joint estimation of the structural parameters driving the output process of 24 defaulting countries and a process for the world interest rate. The postulated output process includes transitory and permanent global components as well as transitory and permanent country-specific components. The paper then builds a sovereign default model augmented with financial frictions at the firm level. In spite of the fact that the shocks are estimated independently of the model or of default data, once fed into the model, they reproduce the clustered default of 1982, providing a joint validation of the model and the estimated driving forces. The model predicts that it is the global shocks to the transitory component of output that are most important in leading countries to default in clusters. Contrary to what is commonly believed, the Volcker interest-rate hike was not a determinant factor of the 1982 developing country debt crisis.

## Working Papers:

*Credit Constrained Households in Emerging Markets and their Effect on Consumption Volatility*

*Creditor Rights During a Financial Crisis*, (with Sudip Gupta and Krishnamurthy Subramanian)

## Work in Progress:

*Global Shocks, Rollover Crises, and Spillover Effects of Foreign Reserves*, (with Seunghoon Na)



**Honors and Awards:**

2018-2019	Dissertation Fellowship, Department of Economics, Columbia University
2013-2018	Dean's Fellowship, Department of Economics, Columbia University
2011-2012	National CAS Scholarship, Delhi School of Economics, University of Delhi

**Research and Work Experience:****Research Assistant**

2012-2013	Krishnamurthy Subramanian, Indian School of Business (ISB)
-----------	--

**Work Experience**

2010	Economist, Nathan Economic Consulting
2008-2010	Business Analyst, Standard Chartered Bank

**Teaching Experience:****Instructor**

Summer 2016	International Trade (Undergraduate)
-------------	-------------------------------------

**Teaching Assistant**

Spring 2018	The Global Economy (Undergraduate), Ronald Miller
Fall 2017, Fall 2015	Intermediate Macroeconomics (Undergraduate), Irasema Alonso
Spring 2017	Macroeconomic Analysis II (Masters), Irasema Alonso
Fall 2016	Economics of Money and Banking (Undergraduate), Perry Mehrling
Summer 2016	Advance Macroeconomics (Masters), Irasema Alonso
Spring 2016	Intermediate Macroeconomics (Undergraduate), Martin Uribe
Spring 2015, Fall 2014	Principles of Economics (Undergraduate), Sunil Gulati

**Personal:**

Citizenship: Indian

Languages: Hindi (Native), English (Fluent)

**References:**

Martín Uribe (Primary) Department of Economics Columbia University (212)-851-4008 <a href="mailto:mu2166@columbia.edu">mu2166@columbia.edu</a>	Stephanie Schmitt-Grohé Department of Economics Columbia University (212)-851-4010 <a href="mailto:ss3501@columbia.edu">ss3501@columbia.edu</a>	Andres Drenik Department of Economics Columbia University (650)-888-8349 <a href="mailto:ad3376@columbia.edu">ad3376@columbia.edu</a>
--	---	---

# Danyan Zha

September, 2018

Department of Economics  
Columbia University  
New York, NY, 10027

(301)364-7981  
dz2266@columbia.edu  
<http://www.columbia.edu/~dz2266>

## Placement Committee:

Martin Uribe (Chair)	mu2166@columbia.edu	212-851-4008
Yeon-Koo Che (spring)	yc2271@columbia.edu	212-854-8276
Gregory Cox	gfc2106@columbia.edu	212-854-5489
Francois Gerard	fg2328@columbia.edu	212-851-4478
Tobias Salz (fall)	ts3035@columbia.edu	212-854-8985

## Coordinator of the Graduate Program

Amy Devine	aed2152@columbia.edu	212-854-6881
------------	----------------------	--------------

## Education

2019 (expected)	Ph.D. Economics	Columbia University
2013	M.A. Economics	University of Maryland at College Park
2011	B.A. Economics and Finance	Tsinghua University, China
2011	B.S. Pure and Applied Mathematics	Tsinghua University, China
2010 spring	Exchange Program	University of California, Berkeley

## Fields of Specialization:

*Primary Fields:* Applied Microeconomics, Development Economics, Family Economics

*Secondary Fields:* Matching theories, Gender Economics

## Working papers

### Schooling Expansion and Marriage Market: Evidence from Indonesia

*Abstract:* This paper analyzes how education distribution shock affects marriage market exploiting a massive schooling expansion policy in Indonesia. In the late 1970s, Indonesia has constructed 61,807 primary schools across the country. Using both variation across regions in the number of schools constructed and variation across birth cohorts, we find that (1) in sparsely populated areas, primary school construction increased primary school attainment rate and didn't affect secondary school attainment rate; (2) in densely populated areas, primary school attainment rate was not affected but secondary school attainment rate decreased due to secondary school quality deterioration. Since females marry at a younger age than males, the program affected females would be first observed in marriage market. This creates a transitory period of marriage markets where female education changes but not males. In this transition

period, we find that females' age of marriage didn't change in sparsely populated areas but decreased in densely populated areas. This finding can be rationalized by an OLG matching model with complementarity between husbands' and wives' education, and complementarity between a secondary school degree of the husband and a younger age of the wife.

### **Multidimensional Matching: Hukou Status in the Marriage Market**

winner of the Vickrey Prize for best third year paper

*Abstract:* I develop a two-dimensional matching model on marriage market in China, where individuals are characterized by a continuous trait (e.g. socioeconomic status) and a discrete attribute (hukou status). Surplus gain from marriage depends on the discrete characteristics with the rationale that (1) a urban *hukou* is much more valuable than a rural *hukou* and (2) it's harder for a husband to move to wife's place and (3) a limited quota of *hukou* change is available upon marriage. I show that a stable match always exists but may fail to be pure, and derive some properties. I then further specify the model by assuming a quadratic surplus function. In that case, closed form stable matching can be fully characterized. Using China 1990 1% sample census, and proxying socioeconomic status by educational attainment, model predictions are validated. There are fewer across-*hukou* type marriages and even fewer rural husband-urban wife match. Matching is assortative on education within each marriage type. Urban husbands with rural wives have on average fewer schooling years than those with urban wives.

### **Work in Progress**

#### **Gender Norm, Labor Supply and Marriage Market**

*Abstract:* Previous studies have found a sharp mass decline to the right of  $\frac{1}{2}$  in the probability density function of wife income share within household. Incorporating this "gender norm" into a household model, I found a testable prediction on labor supply: male labor supply is decreasing with wife's wage when her potential wage is lower than his, however, it's going to increase with wife's wage when her potential wage is higher than his. With this micro-founded marital surplus, I then introduce a matching model on potential wages, which still predicts positive assortative matching on wages.

#### **What I Missed: Marriage Outcomes of Sent-Down Youth in China, with Lu Liu**

*Abstract:* During 1966 and 1978 in China, 17 million youth were sent down to countryside. Using a dataset on monozygotic twins in China, we analyzed the impact of this experience on their future marriage outcomes. We found an insignificant impact on females but for males: three years' sent-down experience increased first marriage age by 0.384 years and decreased spousal consumption share by 30%.

#### **The Hong Kong Marriage Market in the Past Three Decades, with [So Yoon Ahn](#) and [Edoardo Ciscato](#)**

## Awards

Columbia Economics Wueller Pre-Dissertation Award (runner-up), 2017  
Columbia Economics Best third year paper Vickery prize, 2016  
Kathryn and Shelby Davis International Fellowship, 2017-2018  
Chi-Ming Hou Memorial Fellowship, 2016-2017  
Academic Excellence Award, Tsinghua University, 2008, 2009, and 2010  
First prize in Jiangxi Province in the *National Mathematics Olympic Competition* at high school in 2006

## Research Experience

2017 Summer Visiting scholar to Peking University HSBC Business School, China  
2016 Research Assistant to Yeon-Koo Che  
2015 Research Assistant to Jonas Hjort  
2014-2015 Research Assistant to Michael Woodford  
2012-2013 Research Assistant to Erkut Ozbay and Emel Filiz Ozbay

## Teaching Experience

2015-2018 Teaching Assistant, Department of Economics, Columbia University  
Intermediate Microeconomics (Spring 2018) - Instructor: Anna Musatti  
Economics of Information (Fall 2017) - Instructor: Pierre-André Chiappori  
Market design (Spring 2017) - Instructor: Guillaume G. Haeringer  
Market design (Spring 2016) - Instructor: Yeon-Koo Che  
Microeconomics Analysis I (PhD) (Fall 2015)  
- Instructors: Pierre-André Chiappori and Pietro Ortoleva  
2013 Instructor, Department of Economics, University of Maryland at College Park  
Economic Statistics (Summer 2013)

## Professional Services

Referee for Journal of Human Resources

## Conference Presentations

North American Summer Meeting of the Econometric Society, UC Davis, June 2018  
European Meeting of the Econometric Society, Cologne, Germany, August 2018  
Southern Economic Association Conference (Scheduled November 2018)

## Other

Software skills: Stata, R, Matlab, QGIS  
Language: Chinese (Native), English (Fluent), French (Intermediate)

## References

Professor Pierre-André Chiappori  
Columbia University  
212-854-6369  
pc2167@columbia.edu

Professor Bernard Salanié  
Columbia University  
212-854-0472  
bs2237@columbia.edu

Professor Cristian Kiki Pop-Eleches  
Columbia University  
(212) 854-4476  
cp2124@columbia.edu

# Qing Zhang

Department of Economics  
Columbia University  
New York, NY 10027

(917) 515-7280  
[qz2208@columbia.edu](mailto:qz2208@columbia.edu)

Placement Chair: Martin Uribe, [mu2166@columbia.edu](mailto:mu2166@columbia.edu)

Placement Assistant: Amy Devine, (212) 854-6881, [aed2152@columbia.edu](mailto:aed2152@columbia.edu)

## Education

Ph.D. in Economics, Columbia University, 2019 (Expected)

M.Phil. in Economics, Columbia University, 2016

B.S. in Information Systems and Management Science, Tsinghua University, 2013

## Honors and Awards

Dissertation Fellowship, Columbia University, 2018-2019

Ralph Erdman Holben Fellowship, Columbia University, 2016-2017

Sage Best Paper Award Honorable Mention, American Political Science Association, 2017

Dean's Fellowship and Faculty Fellowship, Columbia University, 2013-2018

Hang Seng Scholarship, Tsinghua University, 2011

Bibliophilia Scholarship, Tsinghua University, 2010

## Fields of Specialization

Development Economics, Urban Economics, Political Economy

## Job Market Paper

### **Sunlight, Development Restrictions, and Urban Density**

*Understanding the effects of housing development restrictions faces two challenges: that zoning restrictions are varied and hard to measure, and that restrictions are endogenous to local conditions. In this paper I exploit plausibly exogenous variation across China induced by the requirement that every residential building has to receive two hours of sunshine a day in winter to study the effect of development restrictions on urban density. I present evidence of a robust first stage - that the policy is followed quite well in practice with notable heterogeneity in compliance. I find that lifting development restrictions leads to higher densities of residents and business establishments and higher land prices. Lifting the restrictions is especially beneficial when complemented with a high-density local road network and mixed land use.*

## Working Papers

### **From Internet to Social Safety Net: The Policy Consequences of Online Participation in China**

Under review, with Junyan Jiang and Tianguang Meng

*In recent years, Internet-based platforms are increasingly being adopted by governments around the world to facilitate public engagement with citizens. However, it remains an open question whether participation through these platforms can actually enable citizens to influence policies. We address this question by studying the patterns and consequences of online participation at a major electronic petition platform in China, a country with the world's largest Internet-using population. Content analysis of over 900,000 petitions reveals that a substantial share of them concern lower-class issues and are originated from less developed rural and suburban areas. Linking variations in petition volumes to an original dataset of government policy priorities, we further show that online participation led governments to place greater emphasis on social welfare policies and to increase the coverage of a key low-income assistance program. These results suggest that online participation has the potential to improve the quality of governance even in an authoritarian regime.*

### **Do Legal Rules Explain China's Economic Growth?**

with Amit Khandelwal, Suresh Naidu and Heiwai Tang

*We apply natural language processing methods to analyze a comprehensive corpus of 1.4 million legal documents issued by the Chinese government at central and local levels since 1949, and measure their market orientation in a data-driven fashion. We document an active introduction of market-oriented legal infrastructure from the mid-1980s to around 2000, which slowed down in the last fifteen years. These dynamics are present within fine-grained policy domains. We find that the market orientation of policies explains just an extra 2% of provincial variation in GDP per capita growth beyond province and time fixed effects. Variable selection based on richer representations of the text exhibits similarly limited predictive power for provincial growth. Taken together, these findings suggest the importance of studying the informal arrangements between market participants and government officials.*

## Conference/Invited Talks

China Economics Summer Institute, Chinese University of Hong Kong, 2018

Young Economists Symposium, Yale University, 2017

Quantitative China Studies Seminar, New York University, 2017

## Grants

Law and Public Policy Research Grant (\$14,500), Richard Paul Richman Center, Columbia University, 2018

GSAS and Department of Economics Travel Grants, Columbia University, 2018

## Research Assistantships

Research Assistant for W. Bentley MacLeod, 2017

Research Assistant for Suresh Naidu, 2014-2015

Research Assistant for Chenggang Xu (CKGSB), 2012

## Other Relevant Experience

University of Chicago Price Theory Summer Camp, 2017

Consultant, Asian Development Bank Mongolia Resident Mission, Ulaanbaatar, Summer 2015

Board Member, Association of Graduate Economic Students, Columbia University, 2014-2016

## Teaching Experience

### Teaching Fellow at Columbia University

Perspectives on Economic Studies (PhD course) with Joseph Stiglitz, Spring 2017 & 2018

International Trade with Réka Juhász, Fall 2016

Introduction to Econometrics with Seyhan Erden, Summer 2016

Cognitive Mechanisms and Economic Behavior with Michael Woodford, Spring 2015 & 2016

Political Economy with Alessandra Casella, Fall 2015

Intermediate Macroeconomics with Xavier Sala-i-Martin, Fall 2014

### Section Leader at Tsinghua University

Principles of Economics, Spring 2013

## Programming

Skills: Python, R, Julia, Matlab,  $\text{\LaTeX}$ , C, Java, Stata

## Personal

Languages: English (fluent), Mandarin (native)

## References

W. Bentley MacLeod  
Sami Mnaymneh Professor of Economics  
Columbia University  
310-571-5083  
bentley.macleod@columbia.edu

Suresh Naidu  
Associate Professor of Economics and Public Affairs  
Columbia University  
212-854-0027  
sn2430@columbia.edu

Amit Khandelwal  
Jerome A. Chazen Professor of Global Business  
Columbia Business School  
212-854-7506  
ak2796@columbia.edu



# WEIJIE ZHONG

Last updated: October 17, 2018

Department of Economics  
Columbia University  
New York, NY, 10027

[www.columbia.edu/~wz2269](http://www.columbia.edu/~wz2269)  
[wz2269@columbia.edu](mailto:wz2269@columbia.edu)  
(917) 929-6137

Placement Chair:  
Placement Assistant:

Martin Uribe	(212) 851-4008	<a href="mailto:mu2166@columbia.edu">mu2166@columbia.edu</a>
Amy Devine	(212) 854-6881	<a href="mailto:aed2152@columbia.edu">aed2152@columbia.edu</a>

## Education

---

### Columbia University

Ph.D. Candidate in Economics (2013-present)  
Expected Completion Date: June 2019  
Research Fields: Microeconomic Theory

#### References:

*Professor Yeon-Koo Che*  
Columbia University  
(212) 854-8276  
[yc2271@columbia.edu](mailto:yc2271@columbia.edu)

*Professor Navin Kartik*  
Columbia University  
(212) 854-3926  
[nk2339@columbia.edu](mailto:nk2339@columbia.edu)

*Professor Qingmin Liu*  
Columbia University  
(212) 854-2512  
[qingmin.liu@columbia.edu](mailto:qingmin.liu@columbia.edu)

### Tsinghua University

BSc. in Mathematics and Physics (2013)  
BA in Economics (2013)

## Job Market Paper

---

*“Optimal Dynamic Information Acquisition.”*

*Abstract:* I study a dynamic model in which a decision maker (DM) acquires information about the payoffs of different alternatives prior to making her decision. The key feature of the model is the flexibility of information: the DM can choose any dynamic signal process as an information source, subject to a flow cost that depends on the informativeness of signal. Under the optimal policy, the DM looks for a signal that arrives according to a *Poisson process*. The optimal Poisson signal confirms the DM’s prior belief and is so accurate as to warrant an immediate action from the DM. Over time, absent arrival of a Poisson signal, the DM continues seeking a Poisson signal that is increasingly more precise but arrives less frequently.

*Latest Version:* <https://goo.gl/xCg6R1>, *Supplemental Material:* <https://goo.gl/hzrzac>

## Research Papers

---

### Published Papers

*“Auctions with Limited Commitment.”* with Qingmin Liu, Konrad Mierendorff and Xianwen Shi.  
*American Economic Review*, Forthcoming.

### Working Papers and Work in Progress

*“Time preference and information acquisition.”*

*Abstract:* I consider the sequential implementation of a target information structure. I characterize the set of decision time distributions induced by all signal processes that satisfies a per-period learning capacity constraint. I find that all decision time distributions have the same expectation, and the maximal and minimal elements by mean-preserving spread order are deterministic distribution and exponential distribution. The result implies that when time preference is risk loving (e.g. standard or hyperbolic discounting), Poisson signal is optimal since it induces the most risky exponential decision time distribution. When time preference is risk neutral (e.g. constant delay cost), all signal processes are equally optimal.

*Latest Version:* <https://goo.gl/9aV6BD>, *ArXiv:* 1809.05120

*“Indirect information measure and dynamic learning.”*

*Abstract:* I study the robust predictions of optimal learning dynamics in information acquisition problems where the measure of signal informativeness is an indirect measure from sequential cost minimization. I first show that an indirect information measure is supported by sequential cost minimization *iff* it satisfies: 1) monotonicity in Blackwell order, 2) sub-additivity in compound experiments and 3) linearity in mixing with no information. In a dynamic learning problem, if the cost of information depend on an indirect information measure and delay cost is fixed, then the optimal solution involves direct Poisson signals: arrival of signals directly suggest the optimal actions, and non-arrival of signal provides no information.

*Latest Version:* <https://goo.gl/ZCGBDt>, *ArXiv:* 1809.00697

*“Lemonade from Lemons: Information Design and Adverse Selection.”* with Navin Kartik

*Abstract:* We consider a canonical bargaining problem: a buyer makes a take-it-or-leave-it offer to a seller for a single object. The two parties’ values for the object are interdependent. We study the set of payoff vectors that can be implemented using joint information design. We establish that the set is all payoffs satisfying simple feasibility and individual-rationality constraints. We also investigate what is implementable only using information structures in which the seller is more informed than the buyer, or more generally, under a “no signaling” equilibrium restriction. We show that there is then no loss in providing the buyer with no information and only varying the seller’s information; i.e., familiar adverse-selection structures emerge. However, except in some notable special cases, these information structures do not implement all payoff vectors—in particular, they do not maximize the seller’s payoff or minimize the buyer’s payoff. Our model encompasses monopoly pricing, for which our results augment those of Bergemann, Brooks, and Morris (2015) and Roesler and Szentes (2017).

*“Ratings-Guided Markets.”* with Yeon-Koo Che and Teddy Kim

*Abstract:* We consider a decentralized market where buyers search to trade with sellers of unknown quality. Each buyer targets sellers based on their ratings — a coarse summary (e.g. average) of the seller’s quality collected from previous transactions involving these sellers. We study the implication of a novel informational externality in the rating-guided market: the informational content of the sellers’ ratings is endogenous, depending on the frequency of their trading, but buyers make trading decisions not taking into account their informational effects. First, we show that an improvement in the ratings technology may exacerbate the informational externality, and hence can be welfare-worsening. Second, we extend the baseline model to allow for two ex ante identical demographic groups, and show that the informational externality endogenously generates statistical discrimination. In a stable equilibrium, highly-rated sellers (or workers) in the advantaged group receive more attention than highly-rated sellers (or workers) in the disadvantaged group, leading to discrimination against the latter group in a self-fulfilling fashion. Our analysis implies that an affirmative action policy restores equality, but only in the short run, as the non-discriminative equilibrium is unstable.

*“Selling information.”*

*Abstract:* I consider the monopolistic pricing of informational good. A buyer’s willingness to pay for information is from inferring the unknown payoffs of actions in decision making. A monopolistic seller and the buyer each observes a private signal about the payoffs. The seller’s signal is binary and she can commit to sell any statistical experiment of her signal to the buyer. Assuming that buyer’s decision problem involves rich actions, I characterize the seller’s revenue maximizing menu. The optimal menu involves a continuum of experiments, each containing different amount of information. I also find a complementarity between buyer’s private information and information provision: when buyer’s private signal is more informative, the optimal menu contains more informative experiments.

*Latest Version:* <https://goo.gl/6aRjZY>, *ArXiv:* 1809.06770

## Professional Activities

---

### Referee

*Econometrica*, *Journal of Economic Theory*, *European Journal of Operational Research*

### Conference & Workshop Presentations

- 2017: *Warwick Economics PhD Conference (Warwick)*, *The Econometric Society Summer Meetings (Asian: CUHK; China: Wuhan; North American: WUSTL)*, *Midwest Economic Theory Conference (Kentucky)*, *SAET (Portugal)*, *Young Economists Symposium (Yale)*, *International Conference on Game Theory (Stony Brook)*
- 2018: *SITE Workshop in Dynamic Games (Stanford)*, *The Econometric Society Summer Meetings (China: Fudan; North American: UC Davis)*, *BEAT (Tsinghua)*, *International Conference on Game Theory (Stony Brook)*

## Research Experiences

---

### Research Assistantships

- 2014: Sylvain Chassang (Princeton University)
- 2015: Qingmin Liu (Columbia University), Navin Kartik (Columbia University)  
Marina Halac and Andrea Prat (Columbia Business School)
- 2016: Marina Halac and Pierre Yared (Columbia Business School)  
Yeon-Koo Che (Columbia University)
- 2017: Navin Kartik (Columbia University), Yeon-Koo Che (Columbia University)  
Marina Halac and Pierre Yared (Columbia Business School)
- 2018: Yeon-Koo Che (Columbia University)

## Teaching Experiences

---

### Graduate TA

- 2015: G5211 *Microeconomic Analysis I*, Pietro Ortoleva
- 2016: G6212 *Microeconomic Analysis II*, Patrick Bolton and Navin Kartik  
G6410 *Math Methods for Economists*
- 2018: G6600 *Market Design*, Yeon-Koo Che

### Undergraduate TA

- 2014: W3211 *Intermediate Micro*, Jonathan Vogel
- 2015: W3211 *Intermediate Micro*, Pietro Ortoleva

## Honors and Awards

---

- 2018: Dissertation Fellowship, Columbia University (-2019)
- 2016: Wueller Award for Best Thesis Proposal, Columbia University
- 2013: Dean's Fellowship, Columbia University (-2018)
- 2013: Graduate of Distinction (1%), Tsinghua University

# Oskar Zorrilla

October 3, 2018

Department of Economics  
Columbia University  
New York, NY 10027

(+1) 303-548-8388  
o.zorrilla@columbia.edu

Placement Chairs: Martin Uribe, [mu2166@columbia.edu](mailto:mu2166@columbia.edu)

Placement Assistant: Amy Devine, (212) 854-6881, [aed2152@columbia.edu](mailto:aed2152@columbia.edu)

## Education

2019 (expected)	Ph.D.	Economics	Columbia University
2013	M.Phil.	Economics	University of Oxford
2010	B.A.	Economics	Columbia University

## Honors and Awards

2015-2016, Dissertation Fellowship, Department of Economics, Columbia University  
2013-2018, Dean's Fellowship, Columbia University  
2011-2013, Clarendon Scholarship, University of Oxford  
2006-2010, Kluge Scholarship, Columbia University

## Fields of Specialization

Macroeconomics, Behavioral Macro

## Job Market Paper

### *Deeper Habits*

Inertia in consumption is a well-established fact both at the aggregate and at the individual goods level. Whether inertia results from habits or costs, however, remains an open question. We use an experimental approach to distinguish between the two. In an experiment that replicates the consumption/savings problem we find that our subjects exhibit inertia even when their objective is time-separable and there are no external switching costs. We argue that consumers condition on past actions as a way of economizing on cognitive resources. We develop a model of “rationally inattentive reconsideration” and estimate the costs of inertia in our set-up to be around one percent of consumption.

## Research Experience

2016 – 2017 Research Assistant for Michael Woodford  
2014 – 2015 Research Assistant for Emi Nakamura, Jon Steinsson and Enrichetta Ravina  
2011 Research Associate, Federal Reserve Bank of San Francisco

## Teaching Experience

### *Instructor*

Summer 2016, Uncertainty and Information

### *Teaching Assistant*

Fall 2017, Cognitive Mechanisms and Economic Behavior: Prof. Michael Woodford  
Spring 2016, Intermediate Macroeconomics: Prof. Martin Uribe  
Fall 2015, Macroeconomics I for MA: Ron Miller  
Fall 2014, Intermediate Macroeconomics: Prof. Ricardo Reis

## Personal

Citizenship: US  
Languages: English, Spanish

## References

Michael Woodford (advisor)  
John Bates Clark Professor of Political Economy  
Columbia University  
(+1) 212-854-1094  
michael.woodford@columbia.edu

Mark Dean  
Associate Professor of Economics  
Columbia University  
(+1) 212-854-3669  
mark.dean@columbia.edu

Hassan Afrouzi  
Assistant Professor of Economics  
Columbia University  
(+1) 212-854-4459  
hassan.afrouzi@columbia.edu