NBER Digitization Tutorial 2019 Application

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Part 1: Description of Study

My name is Zheng Gong and I am currently a 3rd year PhD student at Rotman School of Management, University of Toronto. I am in the Economic Analysis and Policy group. Prior to attending Rotman, I graduated from CEMFI Master in Economics and Finance program with distinction and I hold Astronomy and Economics bachelor degrees from Peking University.

During my PhD studies, I have taken all PhD sequence courses (Micro, Macro and Econometrics) from Econ department in University of Toronto. I got all A+ except A for Macro 2 in these six courses and I passed the comprehensive exam in Econ department. Besides, I have taken a variety of courses in both Rotman School and Econ department: Industrial Organization 1 and 2, Advanced Topics in Industrial Economics Theory, Topics in Microeconomics Theory, Empirical Applications of Economic Theory, Strategy and Economics. I got at least A in all these selective courses. I also sit in a lot of courses during my PhD study, including Current topics in Marketing Strategy, Empirical Methods of Marketing, Topics in Innovation and Technology, Urban Economics, etc.

Besides taking courses, I am also active in attending seminar talks in both Rotman School and Econ department. I do not restrict myself just in theory or IO talks. I also sit in applied microeconomics talks (urban, trade, labor, etc) and many seminars in other groups in Rotman, like marketing, strategy or operation. I started to organize an applied theory reading group among PhD students in Rotman and Econ starting from my first year and I have successfully run this reading group for 4 semesters.

My major focus of study is Economics, more specifically, applied microeconomic theory and industrial organization. I am also interested in topics of marketing strategy, innovation and urban economics.

Part 2: Description of Research

My general research interests are in applied microeconomic theory and industrial organization. My current committee members are: Heski Bar-Isaac (Co-Supervisor), Matthew Mitchell (Co-Supervisor) and Ignatius Horstmann. I am expected to graduate in the summer of 2021. My current research projects can be divided into two branches: Applied industrial organization theory and microeconomic theory. Below I will briefly describe my current projects and one of my relatively older work.

On the IO side of my work, I have a current working paper with Jin Huang and Yuxin

Chen (both in NYUSH marketing group), titled “What the Past Tells about the Future: Historical Price in the Durable Goods Market”. In this paper, we observe that consumers in the market are typically unaware of the price history of a certain good. The digitization era brings some tools for consumers to track the historical prices, which we call “price trackers”. We aim to understand how the rising of these tools change the behavior of consumers and the pricing scheme of the firm in equilibrium, as well as the changes in welfares of all parties. Up to our knowledge, we mainly contribute to the literature in the following two senses. First, this is the first paper that studies the dynamic pricing problem with strategic consumers who lack information of price trajectories. Second, we are the first paper that tries to understand the economic role of price trackers. Beside this paper, we are also having a recent preliminary project trying to understand the economic role of price alerts, which also emerge recently on some e-commerce platforms. It allows consumers to subscribe email alert for price cuts of an item. We want to investigate how the ability of providing price alerts to consumers may affect competition between firms.

On the economic theory side of my work, I have a current working paper with Qianjun Lyu (HKU Econ), titled “Optimal Experimentation Design with Secrete Repetitions”. This paper has been accepted for presentation in Econometric Society European Winter Meeting on December. This paper revisits the Bayesian Persuasion problem of Kamenica and Gentzkow (2011) and asks the following question: what if the sender can commit to a signal structure design, but he is able to secretly repeat the signal generating process and selectively disclose signal outcomes to the receiver? A real-life example would be students can take many times of standardized test and select a good grade to report to grad schools, or a firm can ask many certification agencies to grade their product, and selectively report the ratings from certification agencies. Our result analytically show that in equilibrium, the sender will actually design an informative enough experiment, such that he will be having totally no incentive to repeat the experiment, even if the first trial is not ideal to the sender. This will lead to a lower payoff to the sender compare to the full commitment classical solution in Kamenica and Gentzkow (2011).

Prior to attending Rotman for my PhD, I also have an urban economics work as my master thesis in CEMFI, titled “Traffic Air Pollution – Regulation and Impact in Barcelona”. I have presented this paper in ITEA Annual Conference 2017, and it is featured in Spanish Economics blog “Nada es Gratis”. In this paper, I aim to evaluate the environmental effect of a traffic regulation policy, “Zone 80”, in Barcelona. The idea for this policy is to set the upper limit of car speed to 80 km/h in the metropolitan area in Barcelona, starting from 2008. The main challenge of estimation is that there are only a few air quality stations in Barcelona, which distributes very sparsely. And there is high variation of within-city air pollution level due to changes in traffic flows. My approach and my potential contribution to the literature is that I use wind data to identify the source of traffic-oriented air pollution in the hour-station level. My estimation shows that this policy reduces 7.6-10.3% of total NO2 air pollution in Barcelona metropolitan area.

For reference, I also attach my CV below. Thanks in advance for your consideration.

Zheng Gong

October 2018

CONTACT INFORMATION

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Personal Website

DOCTORAL STUDIES

PhD in Economic Analysis and Policy — 2016 - PRESENT
Rotman School of Management, University of Toronto

PRIOR EDUCATIONS

Master in Economics and Finance (with Distinction), CEMFI — 2014-2016
BSc in Astronomy, School of Physics, Peking University — 2010-2014
BA in Economics, National School of Development, Peking University — 2010-2014

RSEARCH INTERESTS

Primary: Industrial Organization, Applied Microeconomic Theory
Secondary: Urban Economics

WORKING PAPERS

Traffic Air Pollution: Regulation and Impact in Barcelona
Featured in Economics Blog Nada Es Gratis (In Spanish)

In January 2008, the maximum speed on motorways in the metropolitan area of Barcelona was limited to 80 km/h from previously 100 - 120 km/h to reduce air pollution. This paper aims to evaluate the effect of this zone 80 policy. A difference-in-differences estimation shows zone 80 policy significantly reduces NO_2 concentration within zone 80 area. Using wind direction to identify traffic pollution source, we find a U-shape emission-speed curve and velocity gradient positively affect vehicle emission. We also provide evidence that zone 80 policy significantly reduce vehicle velocity on motorways to more efficient speed, while only slightly affect the velocity gradient and car intensity. This effect explains the reduction of NO_2 concentration by zone 80 policy.

WORK IN PROGRESS

What the Past Tells about the Future: Historical Price in the Durable Good Market (with Jin Huang and Yuxin Chen)
Optimal Experimentation Design with Secret Repetitions (with Qianjun Lyu)

PRESENTATIONS

(* for presented by coauthor)
2018: Toronto (Econ), Toronto Rotman (Marketing), NYU Shanghai*, University of Hong Kong* Econometric Society European Winter Meeting*
2017: ITEA Annual Conference

TEACHING EXPERIENCE

Teaching Assistant: (* for MBA courses) Foundation of Integrative Thinking, Model Based Decision Making*, Managerial Economics* × 2, Game Theory for Business Strategy, Game Theory and Application for Management*, Strategic Management

PROFESSIONAL EXPERIENCE

Organizer, Applied Theory Reading Group, University of Toronto — 2017-PRESENT
Research Assistant for Heski Bar-Isaac, Rotman — 2018
Research Assistant for Ignatius Horstmann and Bernardo Blum, Rotman — AUG-SEP 2017
Research Assistant for Diego Puga and Gerard Llobet, CEMFI — JUL-SEP 2015
Research Assistant for Fan Zhang and Miaojie Yu, PKU — JUL-SEP 2014
Research Assistant for Fan Zhang, PKU — 2013-2014

Grants, Honors and Scholarships

CRESSE Fellowship	2018
SGS Conference Grant, University of Toronto	2017
Doctoral Fellowship, University of Toronto	2016-PRESENT
Director's Fellowship, University of Toronto	2016-PRESENT
Master Full Scholarship, CEMFI	2014-2016
National Astronomical Observatories Scholarship	2014
Guanghua Scholarship, PKU	2013
Tian Mingren Scholarship, PKU	2013
Freshman Scholarship, PKU	2010
Gold Medal at 12th International Astronomy Olympiad (IAO 2007)	2007

Personal

Language: Chinese (native), English (fluent), Spanish (beginner)
Computer skills: Python, Matlab, Stata, R, C++, LaTeX
Coach of Chinese debate team, University of Toronto
Associate captain of debate team, Peking University
Chinese national second-level athlete, amateur 5 dan in Go