

Proposal for NBER Household Finance Research Grant 2016

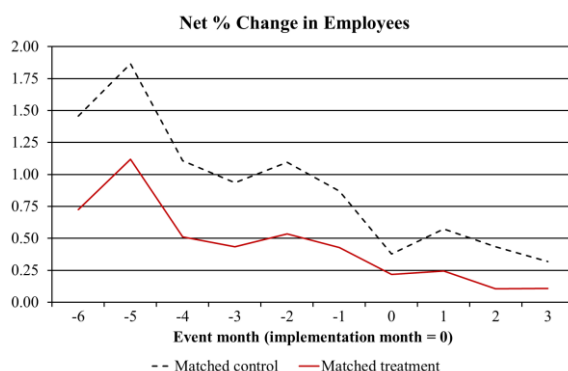
Topic: Household Labor Supply Response to Minimum Wage Increase

PI: Wenlan Qian, National University of Singapore

The impact of minimum wage is heavily debated both in academia and among policy makers. The proponents of minimum wage argue for a positive effect on labor supply, as reflected both by a more active job search and a boosted work morale (of current employees). The opponents of such a policy focus on the displacement effect—profit-maximizing firms will respond by hiring fewer people. Existing empirical evidence is limited with mixed findings, partly due to the lack of high quality micro-level data.

This project plans to study this question by studying the complete sample of more than 120,000 firms in a major (first-tier) city in China, for which we have data on the employment and salary history for each employee in every registered firm in the 2006-2014 period. During this period, the city has implemented multiple minimum wage increases with the magnitude of each minimum wage increase to be on average 10-15%. To achieve identification, we use firms exposed to the wage increase (i.e., firms with employees paid at a wage below the minimum wage before the policy change) as the treatment, and firms not exposed to the wage increase (i.e., those with all employee wage above the minimum wage before the policy change) as the control firms. Even though one cannot rule out the concern that the policy change is purely exogenous to all firms (e.g., some firms may have the incentive and capacity to influence policy making), firms in our sample, especially treatment firms, are economically too small to make a difference in policy making. There are 2000+ treated firms and 89,000+ control firms. The average treatment firm hires 33 employees and the average control firm has 40 employees in our sample. To further addressing the endogeneity concern, the main analysis will be performed on a subsample of treatment and control firms, matched on pre-policy firm size and average income. In addition, we will explicitly test the parallel pre-trends between the treatment and the control firms.

The first question is to study the effect of the minimum wage increase on firm-level employment dynamics. The preliminary analysis suggests that during the three-month period after the minimum wage increase, the matched treatment firms experienced an increase in employment relative to the matched control firms (see the figure below).



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One potential reason for the net employment growth after the minimum wage increases stems from an increase in labor market participation. To understand the source of the net employment growth in the treated firms after the minimum wage increase, we plan to exploit the micro employee level data. Specifically, we know detailed demographic information for each employee in the dataset, such as gender, date of birth, city of origin, in addition to income and employer. Given that we obtain the information from an administrative data set, measurement error is minimal. We will ask the following questions: 1) what are the demographics of the newly hired employees in the treatment and control firms? 2) what are the demographics of the recently left employees? 3) are there any differences in the demographic composition of the newly hired or recently left employees across firms, for example by industry and by firm size?

In addition to using the employee-level dataset, we plan to study the “labor-supply-response” hypothesis by using supplementary datasets of online job search and proxies of labor productivity. Specifically, we will acquire data from popular job search websites in China to investigate any changes in job search activity around the minimum wage increase. Furthermore, we plan to exploit novel measures of labor productivity using lighting intensity (from satellite data) and cell phone usage during work hours. Both measures arguably offer a good proxy for labor input, which is highly correlated with labor productivity and economic growth. Specifically, we will use the satellite data to measure lighting intensity by firm location (especially during the late afternoon or early morning hours) to detect variation in labor input. A greater lighting intensity in the late afternoon hours (e.g., 5-7pm) is plausibly correlated with a higher labor input (and less shirking). To further identify voluntary labor supply decision, we are looking into acquiring a cell phone data usage dataset, from a proprietary data vendor, to measure the amount of network data usage on non-work-related APPs during work hours by firm location. More (less) time spent on leisure mobile APPS during work hours (e.g., shopping or game APPs) is indicative of a low (high) voluntary labor input.

Lastly, another interesting question, which has been anecdotally documented but untested, is the possible channels through which firms sidestep the minimum wage rules. Typically employers (in the U.S. and other developed countries) adopt implicit methods (for example through some form of kickback payment from minimum wage employees, or via reduced benefits), which makes it very difficult for econometricians or policymakers to detect. In China, due to its weaker law and enforcement, employers can possibly get away from not implementing minimum wages for (selected groups) of workers. We will use the deviation of the actual paid salary from the minimum wage level to detect such non-compliance behavior. Moreover, we will investigate the type of employers that are less likely to comply and the characteristics of workers who are most likely discriminated against. This will inform the policy makers on how to better enforce the minimum wage law.

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Itemized Budget Proposal

Data: \$5000

Justification: data acquisition costs for the job search/satellite data that are needed for measuring labor market participation

Travel: \$10000

Justification: the proposed travel budget covers about 3 trips (as the applicants are located outside the US.) to attend conferences, seminars and workshops in the US.

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CV

Wenlan Qian (钱文澜)

<https://sites.google.com/site/wenlanqian/>

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NUS Business School
15 Kent Ridge Drive, #07-67
Singapore 119245

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Email: wenlan.qian@nus.edu.sg

ACADEMIC APPOINTMENT

Assistant Professor of Finance, NUS Business School, National University of Singapore, 2008-

EDUCATION

Ph.D., Business Administration (Finance and Real Estate), Haas School of Business, University of California at Berkeley, 2008
B.A., Economics (with honors), Shanghai International Studies University, 1998

HONORS & AWARDS (POST-GRADUATION)

- 2016 Fellow, Homer Hoyt Weimer School of Advanced Studies in Real Estate and Land Economics
- 2015 Young Researcher Award, NUS Business School
- 2015 Fellow Candidate, Homer Hoyt Weimer School of Advanced Studies in Real Estate and Land Economics
- 2014 Award for Best Paper in Asset Pricing, Society of Financial Studies Cavalcade conference
- 2014 Blackrock Research Award for the Best Paper in Capital Market/Funds Management/Mutual Funds, Australasian Banking and Finance Conference
- 2014 CAMRI Applied Finance Research Grant, S\$15,000
- 2013 NBER Household Finance Group/Sloan Foundation Research Grant, NBER, US\$16,000
- 2012 Best Paper Award (first prize), Global Chinese Real Estate Congress (GCREC) annual conference
- 2012 Real Estate Research Institute Research Grant, US\$ 10,000
- 2011 IMAS-CAMRI Applied Finance Research Grant, S\$15,000
- 2009 Best Paper Award, joint American Real Estate and Urban Economics Association (AREUEA) and Asian Real Estate Society (AsRES) Conference

RESEARCH INTERESTS

Household finance; Real estate; Investments; Financial intermediaries

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PUBLICATIONS

1. Agarwal, Sumit and Wenlan Qian, 2016, "Access to home equity and consumption: evidence from a policy experiment", *Review of Economics and Statistics*, forthcoming
2. Agarwal, Sumit, Wenlan Qian, David Reeb, and Tien Foo Sing, 2016, "Playing the boys game: Golf buddies and board diversity", *American Economic Review (Paper and Proceedings)*, forthcoming
3. Fu, Yuming, Wenlan Qian, and Bernard Yeung, 2015, "Speculative investors and transaction tax: Evidence from the housing market", *Management Science*, forthcoming
Best paper award, first prize, Global Chinese Real Estate Congress, 2012
IMAS-CAMRI Applied Finance Research Grant, 2011
4. Agarwal, Sumit, Yongheng Deng, Chenxi Luo, and Wenlan Qian, 2015, "The hidden peril: the role of the condominium loan market in the recent financial crisis", *Review of Finance*, forthcoming
5. Massa, Massimo, Wenlan Qian, Weibiao Xu, and Hong Zhang, 2015, "Competition of the informed: Does the presence of short sellers affect insider selling?", *Journal of Financial Economics*, 118(2), 268-288
6. Agarwal, Sumit, Jessica Pan, and Wenlan Qian, 2015, "The composition effect of consumption around retirement: Evidence from Singapore", *American Economic Review (Papers and Proceedings)*, 105(5), 426-431
7. Agarwal, Sumit and Wenlan Qian, 2014, "Consumption and debt response to unanticipated income shocks: evidence from a natural experiment in Singapore", *American Economic Review*, 104(12), 4205-4230
Grant award from NBER Household Finance Group/Sloan Foundation, 2013
8. Fu, Yuming and Wenlan Qian, 2014, "Short-term speculators and price overreaction in the housing market", *Real Estate Economics*, 42(4), 977-1007
9. Edelstein, Robert and Wenlan Qian, 2014, "Short term buyers and housing market dynamics", *Journal of Real Estate Finance and Economics*, 49(4), 654-689
Best Paper Award, AREUEA/AsRES Conference, 2009
10. Qian, Wenlan, 2013, "Why do sellers hold out in the down market? An option-based explanation", *Real Estate Economics*, 41(2), 384-417
11. Edelstein, Robert, Wenlan Qian, and Desmond Tsang, 2011, "How do institutional factors influence international real estate returns?", *Journal of Real Estate Finance and Economics*, 43(1): 130-151.

WORKING PAPERS

12. How constraining are limits-to-arbitrage? (with Alexander Ljungqvist), January 2016, NBER Working Paper Series No. 19834, 2nd round
Award for Best Paper in Asset Pricing, SFS Cavalcade, 2014

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Blackrock Research Award for the Best Paper in Capital Market, ABFC, 2014
CAMRI Applied Finance Research Grant, 2014

13. Regulatory blind spots: Deceptive trade practices in financial intermediaries (with Jiang Cheng and David Reeb), February 2016
14. Quality of earnings and PEAD: Evidence from disaggregated consumer spending data (with Sumit Agarwal and Xin Zou), December 2015
15. Thy neighbor's misfortune: peer effects on consumption (with Sumit Agarwal and Xin Zou), October 2015
16. Consumption response to temporary price shocks: Evidence from Singapore's annual sale events (with Sumit Agarwal and Kang Mo Koo), October 2015
17. Disguised corruption: Evidence from consumer credit in China (with Sumit Agarwal, Amit Seru, and Jian Zhang), under revision
18. The age of decision: Pension savings withdrawal and consumption and debt responses (with Sumit Agarwal and Jessica Pan), under revision
19. Cross-border shopping: do consumers respond to taxes or prices? (with Sumit Agarwal, Souphala Chomsisengphet, and Weibiao Xu), under revision

INVITED CONFERENCE PRESENTATIONS

(Including scheduled, * co-author presentation)

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| 2016 | AEA, San Francisco*; Weimer School of Advanced Studies in Real Estate and Land Economics; ABFER |
| <u>Discussion:</u> | ASSA/IBEF, FIRS |
| 2015 | AEA, AEA/AFE, Boston; NBER/EASE, San Francisco; Fourth Symposium on Emerging Financial Markets: China and Beyond, NYC; Society of Economic Dynamics, Warsaw*; CEIBS Finance conference, Shanghai; ABFER, Singapore; CICF, Shenzhen; Frontier of Behavioral Economics, Singapore; WU Gutmann Center Symposium, Vienna |
| <u>Discussion:</u> | ABFER, CICF, Annual Risk Management Conference, Singapore Scholars Symposium |
| 2014 | AEA, Philadelphia; AFA, Philadelphia; NBER/Behavioral, Chicago*; CEPR European Summer Symposium in Financial Markets*; SFS Cavalcade, Georgetown; EFA, Lugano; FIRS, Quebec City (accepted); ABFER, Singapore; CICF (x2), Chengdu; AFBC, Sydney; Singapore Scholar Symposium*; AsFA, Bali* |
| <u>Discussion:</u> | EFA; WFA; CICF (x2); AREUEA-ASSA; ABFER; CAF-ISB Summer Research Conference; RFS Symposium on Emerging Financial Markets; AFBC |
| 2013 | European Conference on Household Finance, Rome; NBER/EASE, Wellington; Asian Bureau of Financial and Economic Research (ABFER, x2), Singapore; IRES symposium, Singapore; CICF, Shanghai; 7 th Singapore International Conference on Finance (SICF); Econometric Society Asian |

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- Meeting, Singapore; International AREUEA/AsRES conference, Kyoto*, Hong Kong institute of monetary research (HKIMR) Summer Workshop
Discussion: Singapore Scholar Symposium; CICF; HKIMR Summer Workshop; SMU-SUFE Summer Research Conference; NBER EASE; ABFER; AREUEA-ASSA
- 2012 AREUEA-ASSA, Chicago (x2); CICF (x2); Global Chinese Real Estate Congress, Macau; IRES symposium on Asia Growth and Urban Economy, Singapore; 6th Singapore International Finance Conference JFW; Finance Down Under conference, Melbourne; RERI, Chicago*; ARES, Florida*; IRES
Discussion: CICF; AREUEA-ASSA; FSU-UF Critical Issues Symposium; IRES symposium
- 2011 CICF, Wuhan; IRES Real Estate Symposium, Singapore; International AREUEA/AsRES conference, Jeju*, Asian Pacific Real Estate Real Estate Symposium, Adelaide; Maastricht-NUS-MIT symposium, Maastricht
Discussion: CICF; International AREUEA; APRER Real Estate Symposium
- 2010 AREUEA-ASSA, Atlanta*; Pre-WFA Summer Real Estate Symposium, Victoria; AsFA, HK; AFBC; 4th Singapore International Finance Conference JFW; FMA, NYC
Discussion: FMA; AsFA; IRES symposium
- 2009 AREUEA-ASSA, San Francisco; International AREUEA/AsRES Conference, Los Angeles; Global Chinese Real Estate Congress, Beijing
Discussion: Third Singapore International Finance Conference; APRER Real Estate Symposium; MIT Maastricht NUS Real Estate Symposium
- 2008 AsRES, Shanghai; DePaul University Symposium;
Discussion: APRER Real Estate Symposium, Annual Risk Management Conference

INVITED SEMINAR PRESENTATIONS

(Including scheduled)

- 2016 UNSW, Australia
University of Technology Sydney
NYU Stern
- 2015 CKGSB, Beijing
Australian National University
Guanghua School of Management, Peking University
Chinese University of Hong Kong
Southwestern University of Finance and Economics, Chengdu
- 2014 Hong Kong Polytechnic University
Federal Reserve Bank of San Francisco
Federal Reserve Bank of Chicago
Shanghai Advanced Institute of Finance (SAIF)
Hong Kong University of Science and Technology
Hong Kong University
City University of Hong Kong
Singapore Management University
- 2013 Nanyang Technological University

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2012 University of Florida
University of Cincinnati

2008 Rice University
Concordia University
National University of Singapore
Moody's KMV
BGI

SCHOOL RESEARCH GRANTS

2015-2018 FRC Tier 1 Research Grant, Ministry of Education, Singapore, "Study of Consumer Credit in China", S\$47,687

2012-2015 FRC Tier 1 Research Grant, Ministry of Education, Singapore, "The impact of fiscal policy, housing wealth, liquidity constraints and consumer sentiment on consumption in Singapore", S\$86,100

2010-2013 FRC Tier 1 Research Grant, Ministry of Education, Singapore, "Investor sophistication and market efficiency", S\$44,400

2008-2011 Start-up Research Fund, NUS Business School, S\$40,000

TEACHING EXPERIENCE

Instructor, FIN 3102, Undergraduate Investment Analysis and Portfolio Management, NUS Business School, National University of Singapore, 2009-2014

Instructor, BFA 6002, PhD Finance Theory, NUS Business School, National University of Singapore, 2011-2013

PROFESSIONAL SERVICE & AFFILIATION

Editorial Board

Associate Editor, *Real Estate Economics*, 2015 -

Ad Hoc Referee

Journal of Finance; Review of Financial Studies; Management Science; Journal of Financial and Quantitative Analysis; Review of Asset Pricing Studies; Journal of Money, Credit and Banking; Journal of Urban Economics; Journal of Economic Behavior and Organization; Real Estate Economics; Journal of Housing Economics; Journal of Real Estate Finance and Economics; Journal of Pension Economics and Finance; Journal of Banking and Finance; Journal of Business Finance and Accounting; Pacific-Basin Finance Journal; International Review of Finance, Journal of Financial Services Research; Financial Review

Conference Organizing Committee

2015-2016 ABFER (Investment track)

2015 AEA session organizer for "Retirement Savings and Household Decisions"

2014 AEA session organizer for "Consumption and Debt Response to Income Shocks"

2014 China International Conference in Finance (CICF)

2011 NUS IRES Real Estate Symposium, 2011

2009 International Real Estate Conference of AREUEA/AsRES

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Conference Review Committee

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| 2016 | FMA Asian Conference |
| 2016 | Finance Down Under conference, University of Melbourne |
| 2015-2016 | European Finance Association conference |
| 2014-2015 | International Banking, Economics and Finance Association (IBEFA) meeting |
| 2010-2015 | Asian Finance Association (AsFA) Annual Meeting |
| 2010-2011 | 4 th and 5 th Singapore International Finance Conference |
| 2011 | SFS Cavalcade conference |
| 2010, 2012-2014 | NUS Risk Management Conference |

Grant Reviewer

2010 Risk Management Institute Research Grant, NUS
2010 Hong Kong Research Grants Council

Affiliation

Member of AEA, AFA, WFA, AREUEA
Affiliated Researcher, Institute of Real Estate Studies, Risk Management Institute, NUS, 2008-

UNIVERSITY SERVICE

Committee & Other Service

2014-2016 Department seminar coordinator
2014-2015 Department recruiting committee
2013-2014 Department PhD program committee
2012-2013 Department financial database committee
2011-2012 Department PhD program committee
2010-2011 Department financial database committee
2009-2010 Department recruiting committee
2009-2015 Undergraduate honors thesis examiner
2008-2014 APEX-EMBA thesis examiner

PhD Dissertation Committee

Weibiao Xu (finance; first placement – Nankai University)
Yingshi Jin (finance)
Dulani Jayasuriya Daluwathumullagamage (finance)
Jian Zhang (finance)
Yuping Shao (finance)
Xin Zou (finance)
Chenxi Luo (real estate)
Kang Mo Koo (real estate)

Undergraduate Honors Thesis Advising

Yanan Liu, Wen Yen Choo, Ang Li, Wieta Anton Honoris, Bai Zhiyong

Master Thesis

Nicole Hagen (thesis examiner)

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MEDIA COVERAGE

Forbes, "Backdoor Bribes? Banks Offer Special Credit Lines to Chinese Bureaucrats",
January 2016

Straits Times (op-ed), "Pick a card, any card: Cloaked corruption in China", January 2016

Harvard Law School Forum on Corporate Governance and Financial Regulation, "Does the presence of short sellers affect insider selling?", December 2015

Straits Times (op-ed), "CPF reforms: To be or not to be (more flexible, that is)", February 2015

Straits Times (op-ed), "Singaporeans' puzzling behavior at age 55", September 2014

Barron's, "Hedge-fund research: Transparently short", March 2014

Bloomberg, "New investing strategy: Talk your book", March 2014

VoxEU, "Speculative investors and transaction tax in the housing market", November 2013

Straits Time, "Govt rebates: Spend or save?", June 2013

The Malaysian Insider, "Does 'Free Money' really boost spending?", June 2013