Shouyong Shi

ADDRESS:

Department of Economics, Queen's University Kingston, Ontario, Canada, K7L 3N6 email: shi.shouyong{at}queensu{dot}ca

CITIZENSHIP: Canadian

POSITION:

Professor of Economics (David C. Smith Chair), Queen's University

EDUCATION:

Ph.D., Economics, University of Toronto, 1991

M.A., Economics, University of Toronto, 1988

B.Sc., Industrial Engineering and Management Science, Huazhong University of Science and Technology (China), 1984

RESEARCH FIELDS:

Macroeconomics; Money and Banking; Labor Economics International Economics; Public Finance; Applied Theory

EMPLOYMENT HISTORY:

Professor (David C. Smith Chair) 2022 - present: Queen's University (Canada) Professor (Liberal Arts Professor) 2014 - 2022: Pennsylvania State University Professor and Canada Research Chair (tier 1) 2002 - 2014: University of Toronto Professor 2000 - 2002: Indiana University (Bloomington) 2001 (on leave): Queen's University (Canada) Associate Professor 1997 - 2001: Queen's University Assistant Professor 1994 - 1997: Queen's University 1991 - 1993: University of Windsor (Canada) Visiting Professor: 2005:Federal Reserve Bank of Minneapolis 1998 - 1999: Federal Reserve Bank of Chicago 1994: University of Pennsylvania.

OTHER TITLES:

Research Fellow:

Bank of Canada: 2003 - 2012 Hong Kong Institute of Monetary Research: 2006 Research Associate at the Federal Reserve Bank of Cleveland: 2004 - 2007

AWARDS AND RECOGNITION:

Liberal Arts Professor (Pennsylvania State University): 2014 - 2022 Canada Research Chair (tier 1): 2002 - 2014 Bank of Canada Fellowship: 2003 - 2012 (two terms) John Weatherall Distinguished Visitor (at Queen's University): 2010, 2014 Ranked highly among economists in the world: 2003 Departmental award for excellent research (Queen's University): 2000 John Rae Prize of the Canadian Economic Association: 2000 (awarded to the best researcher in five years)

RESEARCH GRANTS:

2002 - 2014: Research Funding for Canada Research Chair (tier 1) 2008 - 2012: Bank of Canada Fellowship title: Currencies, monetary coordination and the labour market in business cycles 2003 - 2007: Bank of Canada Fellowship (one of the two inaugural recipients) title: A microfoundation of monetary exchanges and policies 2008 - 2014: Social Sciences and Humanities Research Council of Canada title: Search frictions and macroeconomic performances: currencies, monetary coordination and the labour market 2003 - 2007: Social Sciences and Humanities Research Council of Canada title: Decentralized exchanges, market efficiency and macroeconomic policies 1999 - 2002: Social Sciences and Humanities Research Council of Canada title: Equilibrium in frictional macroeconomic markets 1996 - 1999: Social Sciences and Humanities Research Council of Canada title: Model transactions cost in monetary economics 1993 - 1996: Social Sciences and Humanities Research Council of Canada title: Money, prices and economic activity: models of search and bargaining 2002 - 2004: Connaught Funds (University of Toronto) 1992: University of Windsor Research Board Grant

1988 - 1990: University of Toronto Open Scholarship.

KEYNOTE SPEECHES AND LECTURES:

"Directed Search," invited lecture at

U. of British Columbia (April 2013), U. College London (March 2013) Aarhus University (Denmark, October 2012)

Osaka School of International Public Policy (Osaka, Japan, March 2012)

Central University of Finance and Economics (CEMA, China, May 2012).

"Liquidity, Assets and Business Cycles," Bank of Canada Lecture at the Canadian Economic Association meeting, Ottawa, Ontario, 2011. "A Microfoundation of Monetary Economics," State-of-the-Art Lecture at the Canadian Economic Association meeting, Hamilton, Ontario, 2005.

COURSES TAUGHT:

Graduate courses (M.A. and Ph.D.): macroeconomics, monetary economics, mathematics for PhD students in economics Undergraduate courses: international trade, monetary economics macroeconomics (intermediate and advanced) first-year economics, mathematical economics

SUPERVISION AND WORK WITH STUDENTS:

Ph.D. Supervision:

Primary or co- supervisor of theses (starting date): initial placement (All academic placements are tenure-track assistant professors):

Name: Wei Qiao (June 2022) Murat Inan (May 2022) Ji-Woong Moon (May 2020) Gaston Chaumont (May 2019) Eunbi Ko (May 2019) Kevin Fawcett (December 2019) Christine Tewfik (August 2017) Mohammad Davoodalhosseini (August 2015)Li Li (December 2014) Elton Dusha (February 2013) Ling Sun (October 2012) Kinda Hachem (June 2011) Kunio Tsuyuhara (April 2011) Florian Hoffmann (October 2010) Moritz Ritter (December 2009) Zhe Li (June 2009) Qing Liu (August 2008) Hongfei (Amy) Sun (April 2008) Stephen Ahiabu (November 2007) Melanie O'Gorman (August 2007) Weimin Wang (June 1998)

Initial placement: Jinan University (China) J.P. Morgan Shanghai U. of Finance and Economics U. Rochester National Taiwan U. Toronto Metropolitan U. Analysis Group (Montreal) Bank of Canada Shanghai U. of Finance and Economics U. Chile Brock U. U. Chicago - Booth School of Business U. Calgary U. British Columbia Temple University Shanghai U. Finance and Economics Tsinghua U. (Beijing) Queen's U. (Canada) Ernst & Young U. Winnipeg Statistics Canada

Primary supervisor of ongoing theses (thesis titles are tentative):

Member of the supervision committee (completion date): initial placement (All academic placements are tenure-track assistant professors):

| Name: | Initial placement: |
|--------------------------|---------------------------------------|
| Gent Bajraj (2019) | Bank of Chile |
| Konstantin Egorov (2018) | New School of Economics (Moscow) |
| Hoonsik Yang (2016) | U. of Connecticut |
| Brian Tavares (2015) | Diego Portales (Chile) |
| Hui Xiong (2014) | Southwest U. of Finance and Economics |
| Min Zhang (2008) | Shanghai U. of Finance and Economics |
| Xiuhua Huangfu (2007) | U. Sydney |
| Patrick Scholten (2003) | Colgate U. |
| Patrick Osakwe (1997) | Bank of Canada |
| | |

Supervision of second-/third-year Ph.D. papers (at Toronto and PSU):

| Eunbi Ko, Brian Tavares, | Moritz Ritter, | Ji-Woong Moon, Christine Tewfik, Elton Dusha, Ling Sun, Millan Mulraine, | Gaston Chaumont, Kinda Hachem, Qing Liu, Stephen Ahiabu | |
|---|----------------|--|--|--|
| M.A. supervision: | | | | |
| Yarui Mu (2022, Penn. State)., Albert Tin (1995, Queen's) | | | | |
| Xian Yang (1994, U. Windsor), Qiming Gao (1994, U. Windsor) | | | | |
| B.A. supervision: | | | | |
| Zavaleta, Nicolas X. (2015, Penn State) | | | | |
| Wong, Tim-Wai (1998, Queen's) | | | | |
| Reader (Queen's): | | | | |
| Second-year paper of Ph.D. candidates: | | | | |
| Luke Rawling (2022) | | | | |
| M.A. thesis: | | | | |
| Antonio J. Eiró Carneiro (2023), Anastasios Adamopoulos (1997) | | | | |
| Daniela Miloucheva (1997), Ryan Davies (1997) | | | | |
| Scott Kinnear (1996), Greg Gallo (1995) | | | | |
| B.A. essay: | | | | |
| James Berry (1997). | | | | |
| Academic advisor for undergraduate students (Queen's): 1997 - 2001. | | | | |

COMMITTEES:

Ph.D. theses examinations:Ellen Katz (Toronto, Social Work, 2011): chair of oral examinationRhys Mendes (Toronto, 2008): internal examiner

Binbin Liu (Toronto, 2007): chair of oral examination Xiuhua Huangfu (Toronto, 2007): internal examiner Anastasios Adamopoulos (Toronto, 2005): internal examiner Alok Kumar (Queen's, 2003): external examiner Noritaka Kudoh (SUNY Buffalo, 2000): external examiner Marc-Andre Letendre (Queen's, 1999): internal examiner Chengjun Li (U. of Toronto, 1998): external examiner Gerard O'Rilley (Queen's, 1997): head examiner Mingwei Yuan (U. of Western Ontario, 1996): external examiner Kenneth Beirne (Queen's, 1996): head examiner Desire Vencatachellum (Queen's, 1994): internal examiner Graduate Thesis Award Committee: Queen's, 2023 Chair Advisory Committee: Toronto, 2002 - 2005, 2008 - 2011 Recruiting committees: University of Toronto: 2009 - 2010, 2011 - 2012 Indiana University: 2001, 2002 Graduate Admission Committee: Toronto, 2006 - 2009 Comprehensive examinations: Macroeconomics: Queen's: 1996, 1997, 2001, 2023; U. Toronto: 2002 - 2012. Monetary Economics: Queen's ,1994 - 2001; U. Toronto, 2002 - 2013 Macroeconomics Candidacy Exam (Penn. State): 2014 - 2022.

MEMBERSHIP:

American Economic Association; Econometric Society; Society for Economic Dynamics.

OTHER CONTRIBUTIONS TO THE UNIVERSITY AND PROFESSION:

Editorial duties: Associate Editor of Journal of Economic Theory, 2023 - present Co-editor of Annals of Economics and Finance, 2000 - 2012 Associate Editor of Journal of International Economics, 2000 - 2002.
Organized conferences and workshops: Committee member of the Econometric Society meeting (East Asia): 2013 Research on Money and Markets: 2005 - 2011 (annually) Tsinghua Summer Workshop on Macroeconomics (Beijing): 2009 - 2012 Conference on Matching: May 2004 (with A. Siow and H. Li) Canadian Macroeconomics Study Group meetings: 1996, 2003, 2008 (with others) Macroeconomic seminar/workshop: 1996 - present (with others).

Acted as a referee for the following academic journals: Econometrica, Journal of Political Economy

American Economic Review, Review of Economic Studies Journal of Economic Theory, Journal of Monetary Economics International Economic Review, Journal of International Economics Review of Economic Dynamics, Economic Theory American Economic Journal - Microeconomics, -Macroeconomics Economic Journal, European Economic Review Canadian Journal of Economics, J. of Economic Dynamics and Control J. of Labor Economics, J. of Public Economics, Economic Inquiry J. of International Money and Finance, BE Journal of Economics J. of Money, Credit and Banking, **Review of International Economics** Games and Economic Behavior, Theoretical Economics Journal of Mathematical Economics, Journal of Economic Literature Quarterly Journal of Economics, Rand Journal of Economics Acted as a discussant in the following conferences: Econometric Society meetings (summer and winter) Canadian Economic Association meetings Canadian Macroeconomic Study Group meetings Midwest International Economics meetings. Acted as a referee for the following grant applications: Social Sciences and Humanities Research Council of Canada National Science Foundation (USA) Swiss National Science Foundation

PUBLICATIONS AND PAPERS:

A. Publications in Peer-Refereed Journals:

- "Sequentially Mixed Search and Equilibrium Price Dispersion," Journal of Economic Theory 213 (2023) 105735. (https://doi.org/10.1016/j.jet.2023.105735).
 Working paper version: http://ssrn.com/abstract=3262935.
- "Endogenous Procyclical Liquidity, Capital Reallocation, and q," (with Melanie Cao), International Economic Review 64 (2023), 95-128. (doi: 10.1111/iere.12594). Working paper version: http://ssrn.com/abstract=2525544.
- 3. "Knowledge, Germs, and Output," Review of Economic Dynamics 48 (2023), 297-319. (https://doi.org/10.1016/j.red.2022.06.002).
 Working paper version: http://ssrn.com/abstract=3623169.
- "Wealth Accumulation, On-the-Job Search and Inequality," (with Gaston Chaumont), Journal of Monetary Economics 128 (2022), 51-71. (https://doi.org/10.1016/j.jmoneco.2022.03.009). Working paper version: http://ssrn.com/abstract=2893777.

- 5. "Should Buyers or Sellers Organize Trade in a Frictional Market?" (with Alain Delacroix), Quarterly Journal of Economics 133 (2018), 2171-2214.
- 6. "Emission Taxes and Standards in a General Equilibrium with Productivity Dispersion and Abatement," (with Zhe Li), *Macroeconomic Dynamics* 21 (2017), 1857-1886.
- 7. "Customer Relationship and Sales," Journal of Economic Theory 166 (2016), 483-516.
- 8. "Burdett-Mortensen Model of On-the-Job Search with Two Sectors," with Florian Hoffmann, *Review of Economic Dynamics* 19 (2016), 108-134.
- 9. "Liquidity, Assets and Business Cycles," *Journal of Monetary Economics* 70 (2015), 116-132.
- "Financial Frictions, Investment Delay and Asset Market Interventions," (with Christine Tewfik), Journal of Money, Credit and Banking 47 (2015), 155-196.
- 11. "Liquidity, Interest Rates and Output," Annals of Economics and Finance 15 (2014), 53-95.
- 12. "A Monetary Theory with Non-Degenerate Distributions," (with Guido Menzio and Hongfei Sun), Journal of Economic Theory 148 (2013), 2266-2312.
- 13. "Pricing and Signaling with Frictions," (with Alain Delacroix), Journal of Economic Theory 148 (2013), 1301-1332.
- 14. "Vehicle Currency," (with Michael B. Devereux), *International Economic Review* 54 (2013), 97-133.
- 15. "Liquidity, Innovation and Growth," (with Aleksander Berentsen and Mariana Rojas Breu), Journal of Monetary Economics 59 (2012), 721-737.
- 16. "Efficient Search on the Job and the Business Cycle," (with Guido Menzio), *Journal* of *Political Economy* 119 (2011), 468-510.
- 17. "An Equilibrium Theory of Learning, Search and Wages," (with Francisco M. Gonzalez), *Econometrica* 78 (2010), 509-537.
 "Supplement to 'An Equilibrium Theory of Learning, Search and Wages'," (with Francisco M. Gonzalez), *Econometrica Supplementary Material* 78 (2010), 1-9.
- "Block Recursive Equilibria for Stochastic Models of Search on the Job," (with Guido Menzio), Journal of Economic Theory 145 (2010), 1453-1494.
- "Directed Search on the Job, Heterogeneity, and Aggregate Fluctuations," (with Guido Menzio), American Economic Review: Papers and Proceedings 100 (2010), no.2, 327-332.
- "Currency Areas and Monetary Coordination," (with Qing Liu), International Economic Review 51 (2010), 813-836.

- 21. "Directed Search for Equilibrium Wage-Tenure Contracts," *Econometrica* 77 (2009), 561-584.
 "Supplement to 'Directed Search for Equilibrium Wage-Tenure Contracts'," *Econometrica Supplementary Material* 77 (2009), 1-11.
- 22. "Efficiency Improvement from Restricting the Liquidity of Nominal Bonds," *Journal* of Monetary Economics 55 (2008), 1025-1037.
- 23. "Friedman Meets Hosios: Efficiency in Search Models of Money," (with Aleksander Berentsen and Guillaume Rocheteau), *Economic Journal* 117 (2007), 174-195.
- 24. "Viewpoint: A Microfoundation of Monetary Economics," Canadian Journal of Economics 39 (2006), 643-688.
- 25. "The Variability of Velocity of Money in a Search Model," (with Weimin Wang), Journal of Monetary Economics 53 (2006), 537-571.
- 26. "Directed Search On the Job and the Wage Ladder," (with Alain Delacroix), International Economic Review 47 (2006), 651-699.
- 27. "Signaling in the Internet Craze of Initial Public Offerings," (with Melanie Cao), Journal of Corporate Finance 12 (2006), 818-833.
- "Wage Differentials, Discrimination and Efficiency," European Economic Review 50 (2006), 849-875.
- "Nominal Bonds and Interest Rates," International Economic Review 45 (2005), 579-612.
- 30. "Frictional Assignment, Part II: Infinite Horizon and Inequality," *Review of Economic Dynamics* 8 (2005), 106-137.
- 31. "The Extent of the Market and Optimal Specialization," *Economic Theory* 25 (2005), 333-351.
- 32. "A Model of Bureaucracy and Corruption," (with Ted Temzelides), International Economic Review 45 (2004), 873-908.
- "Money, Price Dispersion and Welfare," (with Brian Peterson), Economic Theory 24 (2004), 907-932.
- 34. "International Borrowing, Specialization, and Unemployment in a Small Open Economy," (with Patrick Osakwe), *Review of International Economics* 12 (2004), 41-59.
- 35. "A Fundamental Theory of Exchange Rates and Direct Currency Trades," (with Allen Head), Journal of Monetary Economics 50 (2003), 1555-1591.
- 36. "A Directed Search Model of Inequality with Heterogeneous Skills and Skill-Biased Technology," *Review of Economic Studies* 69 (2002), 467-491.

- 37. "Product Market and the Size-Wage Differential," *International Economic Review* 43 (2002), 21-54.
- 38. "Pricing and Matching with Frictions," (with Kenneth Burdett and Randall Wright), Journal of Political Economy 109 (2001), 1060-1085.
- 39. "Frictional Assignment, Part I: Efficiency," Journal of Economic Theory 98 (2001), 232-260.
- 40. "Screening, Bidding, and the Loan Market Tightness," (with Melanie Cao), European Finance Review 5 (2001), 21-61.
- 41. "Liquidity, Bargaining, and Multiple Equilibria in a Search Monetary Model," Annals of Economics and Finance 2 (2001), 325-351.
- 42. "Bargains, Barter, and Money," (with Merwan Engineer), *Review of Economic Dy*namics 4 (2001), 188-209.
- 43. "Coordination, Matching, and Wages," (with Melanie Cao), Canadian Journal of Economics 33 (2000), 1009-1033.
- 44. "Innovation, Imitation, and Welfare-Improving Cycles," (with Patrick Francois), Journal of Economic Theory 85 (1999), 226-257.
- 45. "Labor Market Search and the Dynamic Effects of Taxes and Subsidies," (with Quan Wen), *Journal of Monetary Economics* 43 (1999), 457-495.
- 46. "Search, Inflation, and Capital Accumulation," *Journal of Monetary Economics* 44 (1999), 81-103.
- 47. "Fashion and Wealth Accumulation," Economic Theory 14 (1999), 439-461.
- 48. "Money, Capital, and Redistributive Effects of Monetary Policies," Journal of Economic Dynamics and Control 23 (1999), 565-590.
- 49. "Search for a Monetary Propagation Mechanism," *Journal of Economic Theory* 81 (1998), 314-352.
- "Asymmetry, Imperfectly Transferable Utility, and Fiat Money in Improving the Terms of Trade," (with Merwan Engineer), Journal of Monetary Economics 41 (1998), 153-183.
- 51. "Stochastic Relation between Money and Capital in an Economy with Spatially Separated Markets," *Review of Economic Dynamics* 1 (1998), 754-780.
- 52. "Bargaining with Surplus Destruction," (with Lutz-Alexander Busch and Quan Wen), Canadian Journal of Economics 31 (1998), 915-932.

- 53. "Labor Market Search and Capital Accumulation: Some Analytical Results," (with Quan Wen), Journal of Economic Dynamics and Control 21 (1997), 1747-1776.
- 54. "Money and Specialization," Economic Theory 10 (1997), 99-113.
- 55. "A Divisible Search Model of Fiat Money," *Econometrica* 65 (1997), 75-102.
- 56. "Credit and Money in a Search Model with Divisible Commodities," *Review of Economic Studies* 63 (1996), 627-652.
- 57. "Money and Prices: A Model of Search and Bargaining," *Journal of Economic Theory* 67 (1995), 467-496.
- 58. "Asymmetric Information, Credit Rationing, and Economic Growth," Canadian Journal of Economics 29 (1996), 665-687.
- 59. "Weakly Nonseparable Preferences and Distortionary Taxes in a Small Open Economy," *International Economic Review* 35 (1994), 411-428.
- 60. "Habits and Time Preference," (with Larry G. Epstein), International Economic Review 34 (1993), 61-84.
- 61. "Capital Accumulation and the Current Account in a Two-Country Model," (with Michael B. Devereux), Journal of International Economics 30 (1991), 1-25.
- 62. "Rothschild-Stiglitz Competitive Insurance Market under Quasilinear Preferences," Economics Letters 27 (1988), 27-30.
- 63. "Rational Expectation Equilibrium under Quasilinear Preferences: A Diagrammatic Approach," *Economics Letters* 26 (1988), 107-110.

B. Book Chapters and Other Publications:

- "Liquidity Shocks and Asset Prices in the Business Cycle," 2012, in F. Allen, M. Aoki, J-P Fitoussi, N. Kiyotaki, R. Gordon and J.E. Stiglitz eds. *The Global Macro Economy* and Finance, pp. 118-130, Palgrave Macmillan, New York.
- "Commentary on 'Inflation and Welfare in Models with Trading Frictions'," 2009, in David E. Altig and Ed Nosal eds. *Monetary Policy in Low-Inflation Economies*, pp. 121-126, Cambridge University Press, New York.
- "Search Theory (New Perspectives)," 2008, in Steven N. Durlauf and Lawrence E. Blume eds. *The New Palgrave Dictionary of Economics*, second edition, Palgrave Macmillan. (DOI:10.1057/9780230226203.1499).
- "Monetary Theory and Policy," 2002, in Guoqiang Tian ed. Xian Dai Jing Ji Xue Yu Jin Rong Xue Qian Yan Fa Zhan (translation: The Frontiers and Recent Developments in Economics and Finance), pp. 131-209, Shang Wu Press, Beijing.

- "Tariffs, Unemployment, and the Current Account: An Intertemporal Equilibrium Model," 2001, in Guillermo Calvo, Rudiger Dornbusch and Maurice Obstfeld eds. Money, Factor Mobility and Trade: Essays in Honor of Robert A. Mundell, pp. 467-504, MIT press, Cambridge, Massachusetts.
- 6. "The Research Agenda: Search Theory beyond the Matching Function," 2000, Newsletter 1 (issue 2), Society for Economic Dynamics.
- "Discussion on 'Credit Crunch, Bank Lending, and Monetary Policy: A Model of Financial Intermediation with Heterogeneous Projects'," 1999, in Kevin Clinton and Walter Engert eds. *Money, Monetary Policy, and Transmission Mechanisms*, pp. 341-345, Bank of Canada, Ottawa.

C. Papers under Review in Peer-Refereed Journals:

(PDF at https://sites.google.com/site/shouyongsite/)

- "Post-Match Investment and Dynamic Sorting between Capital and Labor," 2020. (http://ssrn.com/abstract=3240652)
- "Efficient Investments, Job Dynamics and Frictional Dispersion," 2018, (http://ssrn.com/abstract=3172147).
- "Learning, On-the-Job Search and Wage-Tenure Contracts," with Kevin Fawcett, 2018, (http://ssrn.com/abstract=3132164).
- "Long-Run Sectoral Reallocation, Job to Job Transitions, and Earnings Inequality: An Empirical Investigation," with Florian Hoffmann and Anton Laptiev, 2016, (http://ssrn.com/abstract=2820610), revise and resubmit at the International Economic Review.

D. Working Papers / Ongoing Research:

- "Sequentially Mixed Search Equilibrium with Many-to-Many Meetings," 2018.
- "Sectoral Shift, Job Mobility and Wage Inequality," with Florian Hoffmann (U. of British Columbia), 2009.
- "Housing and Mortage Search," with Jason Allen (Bank of Canada) and Lu Han (U. Wisconsin), 2022.

E. Some Presentations at Workshops and Conferences:

 "Knowledge, Germs, and Output," presented at Queen's U. (September 2020), Covid-19 Search and Matching workshop (organized by Simon Mongey at U. Chicago, June 2020), Peking U. (June 2020), Shanghai U. of Finance and Economics (June 2020), and Penn State U. (June 2020).

- 2. "Sequentially Mixed Search and Equilibrium Price Dispersion," presented at Queen's U. (December 2021), Search and Matching in Money and Finance (February 2021), Search and Matching Congress (May 2020), Ryerson U. (March 2020), the Society for Economic Dynamics (St. Louis, June 2019), and the theoretical advances in search and matching (organized by NBER and Princeton, March 2019).
- "Post-Match Investment and Dynamic Sorting between Capital and Labor," presented at Search and Matching in Money and Finance (October 2020), Rutgers U. (October 2019), U. Virginia (September 2019), the Federal Reserve Bank of Philadelphia (August 2019), Peking University (June 2019) and Queen's University (May 2019).
- 4. "Learning, On-the-Job Search and Wage-Tenure Contracts," (with Kevin Fawcett), presented at Western U. (March 2023), Cornell (March 2023), and the NBER summer institute (Cambridge, USA, June 2018).
- 5. "Wealth Accumulation, On the Job Search and Inequality," (with Gaston Chaumont), presented at the Society for Economic Dynamics Meeting (Edinburgh, June 2017) and Shanghai Macro Workshop (SHUFE, June 2017). Presentations by the co-author: the Econometric Society European meeting (Lisbon, August 2017), 7th meeting of the Society for the Study of Economic Inequality (New York, July 2017), the Econometric Society Summer meeting (St Louis, June 2017), 7th Workshop of the European Search and Matching Network (Barcelnona, May 2017), 1st Workshop on Advanced Economics at Universidad Nacional de Cuyo (Mendoza, Argentina, May 2017), 6th Alumni Conference Universidad de San Andres (Buenos Aires Province, Argentina, December 2016), Midwest Macro meeting (Kansas City, November 2016), 11th Annual Economics Graduate Student Conference at Washington University in St. Louis (St. Louis, October 2016), Cornell-PSU (October 2016).
- 6. "Efficient Investments, Job Dynamics and Frictional Dispersion," presented at the Canadian macro study group meeting (November 2018), and Tsinghua University (June 2018). An old version: "Efficient Job Upgrading, Search on the Job and Output Dispersion," presented at the Econometric Society Winter meeting (Philadel-phia, January 2018), University of Calgary (September 2017), Cornell-PSU macro conference (September 2017), Royal Holloway University (October 2016), the Federal Reserve Bank of Philadelphia (September 2016), the NBER summer institute (July 2016), the Society for Economic Dynamics (Toulouse, June 2016), the Shanghai Macro Workshop (SUFE, June 2016), Kyoto University (June 2016) and Carnegie Mellon University (May 2016).
- 7. "Should Buyers or Sellers Organize Trade in a Frictional Market?" (with Alain Delacroix), presented at the Society for Economic Dynamics (Mexico City, June 2018), Shanghai Macro Workshop (June 2018), the Federal Reserve Bank of Chicago (August 2016) and the Search and Matching workshop at University of Pennsylvania (April 2016).
- 8. "Endogenously Procyclical Liquidity, Capital Reallocation, and q," (with Melanie Cao), presented at University of Wisconsin Madison conference on money and bank-

ing (September 2017), Shanghai Forum (Fudan U., May 2017), University of Chile (November 2016), University College London (October 2016), Michigan State University (September 2016), the Canon Institute conference on recent advance in macroeconomics (Tokyo, June 2016), the St. Louis Fed and Tsinghua University conference (Beijing, May 2016), Federal Reserve Board of Governors (December, 2015), the Canadian Macro Study Group meeting (Montreal, November 2015), Vanderbilt U. (October 2015), Cornell-PSU macro conference (September 2015), Federal Reserve Bank of St. Louis conference on money and banking (August 2015), the Society for Economic Dynamics meeting (Warsaw, June 2015), and Shanghai Macro Workshop (SUFE, June 2015).

- 9. "Financial Frictions, Investment Delay and Asset Market Interventions," (with Christine Tewfik), presented at the Canadian Macro Study Group meeting (Hamilton, November 2014), Federal Reserve Bank of Richmond (October 2014), Cornell-PSU macro conference (September 2014), University of Chile (May 2014), Bank of Chile (May 2014), Queen's University (April 2014), the University of Waterloo (March 2014), the University of Bern the Swiss National Bank JMCB conference (Gerzensee, Switzerland, October 2013) and the Chicago Federal Reserve Bank of conference on money, banking, payments and finance (August 2013).
- 10. "Liquidity, Assets and Business Cycles," presented at the Cireq-Ensai macro conference (Rennes, France, June 2013), University of Southampton (March 2013), University of Waterloo (February 2013), the Canadian Macro Study Group meeting (Montreal, November 2012), the Fall Conference at the St. Louis Federal Reserve Bank (St. Louis, October 2012), the Econometric Society Summer meeting (Evanston, June 2012), Zhejiang University (China, June 2012), Fudan University (Shanghai, June 2012), the Federal Reserve Bank of Chicago Workshop on Money, Banking, and Payments (Chicago, August 2011), the Asian Econometric Society meeting (Seoul, August 2011), the Canon Institute for Global Studies (Tokyo, August 2011), the International Economic Association meeting (Beijing, July 2011), and the Canadian Economic Association meeting (as the Bank of Canada Lecture, Ottawa, May 2011).
- 11. "Customer Relationship and Sales," presented at presented at New York University Search Theory conference (April 2015), the Federal Reserve Bank of Philadelphia (September 2014), U. Washington (Seattle, May 2014), Pennsylvania State U. (October 2013), the conference on Quantitative Marketing and Economics at the Booth School of Business (U. Chicago, September 2013), the Chicago Federal Reserve Bank of conference on money, banking, payments and finance (August 2013), the Society for Economic Dynamics meeting (Seoul, June 2013), Shanghai Macro Workshop (June 2013), the NBER Summer Institute (Cambridge, July 2012), Boston University (April 2012), the Tokyo Conference of the OEIO (March 2012) and the Econometric Society Winter meeting (Chicago, January 2012).
- 12. "Sectoral Shift, Job Mobility and Wage Inequality," (with Florian Hoffmann), presented at the NBER Summer Institute (July 2014), the Society for Economic Dynamics

(Toronto, June 2014), the Econometric Society meeting (Philadelphia, January 2014), the Canadian Macro Study Group meeting (Toronto, 2013), University College London (March 2013), Edinburgh (March 2013), the Conference on Cycles, Adjustment and Policy (Sandbjerg, Denmark, October 2012), Shanghai Macroeconomic Workshop (June 2012), Yale (March 2012), Osaka (March 2012), Yonsei University (Seoul, August 2011), the Society for the Advancement of Economic Theory (Portugal, June 2011).

- 13. "A Monetary Theory with Non-Degenerate Distributions," (with Guido Menzio and Amy Hongfei Sun), presented at Sixty Years Since Baumol-Tobin (New York U., September 2012), the Canadian Macro Study Group meeting (Vancouver, November 2011), the Society for Economic Dynamics (Montreal, 2010), Tsinghua Macro Workshop (Beijing, 2010), Singapore Management U. (2010), National Taiwan U. (2010), Texas Monetary Conference (Austin, 2009), Chicago FED Conference on Money, Banking, Payments and Finance (Chicago, 2009), the Society for Economic Dynamics (Istanbul, 2009), and the Society for the Advancement of Economic Theory (Ischia, Italy, 2009).
- 14. "Efficient Search on the Job and the Business Cycle," (with Guido Menzio), presented at Queen's U. (2010), China Economics and Management Academy (CUFE, China, 2010), National U. of Singapore (2010), National Taiwan U. (2010), Canadian Macro Study Group meeting (Queen's, Ontario, 2009), the 40th Constanz Seminar (Germany, 2009), UBC/Bank of Canada conference on macro (Vancouver, 2009), Princeton (2008), Vienna Macro Conference (2008), Boston University (2008), Research on Money and Markets (Toronto, 2008), NBER Summer Institute (Cambridge, 2008), the Society for Economic Dynamics meeting (Cambridge, 2008), Econometric Summer meeting (Pittsburgh, 2008), and the Bank of Canada (2008).
- 15. "Emission Tax or Standard? The Roles of Productivity Dispersion and Abatement" (with Zhe Li), presented at Shanghai Macro Workshop (2010).
- 16. "An Equilibrium Theory of Learning, Search and Wages," (an earlier version had the title: "Learning from Unemployment") (with Francisco M. Gonzalez), presented at Econometric Society Winter meeting (Atlanta, 2010), NBER Conference on Macro Perspectives of the Labor Market (FED Minneapolis, 2009), Wisconsin-Madison (2009), Illinois-Urbana/Champaign (2009), Society for Economic Dynamics meeting (Istanbul, Turkey, 2009), Pennsylvania (2008), NBER Summer Institute (Cambridge 2005), and Canadian Macro Study Group meeting (Vancouver, 2005).
- 17. "Block Recursive Equilibria for Stochastic Models of Search on the Job," (with Guido Menzio), presented at the Yale Symposium on Search (2009), and the Society for the Advancement of Economic Theory (Ischia, Italy, 2009).
- "Liquidity, Innovation and Growth," (with Aleksander Berentsen and Mariana Rojas Breu), presented at Liquidity and the Financial Systems workshop (Bank of Canada, 2009).

- 19. "Directed Search for Equilibrium Wage-Tenure Contracts," presented at Yale University (2006), University of Pennsylvania (2006), Rochester (2006), U. British Columbia (2007), Calgary (2007), Pittsburgh (2008), Microfoundations of Markets with Frictions at UQAM (2007), Research on Money and Markets (Toronto, 2007), NBER Summer Institute (Cambridge, 2007), Canadian Macro Study Group Meeting (Ottawa, 2007), Cornell-Pennsylvania State Macro Conference (2008), and American Economic Association Winter Meeting (New Orleans, 2008).
- 20. "Welfare Improvement from Restricting the Liquidity of Nominal Bonds," presented at University of Quebec at Montreal (2006), Hong Kong University (2006), University of Basel (2006), the Society for Economic Dynamics Meeting (Vancouver, 2006), the Federal Reserve Bank of Cleveland (2006), the Bank of Canada (2006), and the Federal Reserve of New York (2007).
- 21. "Currency Areas and Monetary Coordination," (with Qing Liu), presented at Cleveland FED conference on money, banking and payments (2005), Research on Money and Markets (Toronto, 2005), Bank of Canada (2005), Federal Reserve Bank of Minneapolis (2005), Hong Kong Institute of Monetary Research (2006), Hong Kong University of Science and Technology (2006), University of Lausanne (2006), and the Far Eastern Econometric Society Meeting (Beijing, 2006).
- 22. "Matching, Pricing and Quality Investment," presented at the Society for Economic Dynamics (Prague, 2007).
- 23. "An Introduction to Recent Development in Monetary Theory," People's Bank of China (2006).
- 24. "Vehicle Currency," (with Michael B. Devereux), presented at the Monetary Economics Conference in London (Ontario, 2005), NBER Summer Institute (Cambridge, 2005), Minnesota summer workshop on macroeconomic theory (Minneapolis, 2005), Canadian Macro Study Group meeting (Vancouver, 2005), and Conference on Monetary Economics organized by University of Basel and Swiss National Bank (Monte Verita, Switzerland, 2007).
- 25. "A Microfoundation of Monetary Economics," State-of-the-Art Lecture at the Canadian Economic Association meeting, Hamilton, Ontario, 2005.
- 26. "Liquidity, Interest Rates and Output," presented at Michigan State University (2004), Bank of Canada (2004), Federal Reserve Bank of Cleveland (2004), Federal Reserve Bank of Atlanta (2004), the Monetary Economics Conference in London (Ontario, 2005), and SAET conference (Vigo, Spain, 2005).
- 27. "Nominal Bonds and Interest Rates," presented at the joint conference of the Swiss National Bank and the Federal Reserve Bank of Cleveland (Zurich, 2002), the Society for Economic Dynamics meeting (Paris, 2003), and the conference on "Models of Monetary Economies II: The Next Generation" (Minneapolis, 2004).

- 28. "Wage Differential, Discrimination and Efficiency," presented at the conference on Labor Market and Matching (Denmark, 2004), and at University of British Columbia (2004).
- 29. "The Variability of Velocity of Money in a Search Model," (with Weimin Wang), presented at the Federal Reserve Bank of Cleveland (2004) and the Conference on Monetary Economics at the University of Notre Dame (2004).
- 30. Discussion on "Some Benefits of Cyclical Monetary Policy," (authors: Ricardo Cavalcanti and Ed Nosal), Conference on Dynamic Models and Monetary Policymaking, Federal Reserve Bank of Cleveland (2004).
- Discussant on "Inflation and Welfare in Models with Trading Frictions" (G. Rocheteau and R. Wright), Conference on Low Inflation, Federal Reserve Bank of Cleveland (2003).
- 32. "Nominal Bonds and Interest Rates: Liquidity and Welfare," presented at the Society for Advancement of Economic Theory (Rhodes, Greece, 2003) and Federal Reserve Bank of Cleveland (2003).
- 33. "Directed Search On the Job and the Wage Ladder," (with Alain Delacroix), presented at Northwestern U. (2002), Minnesota Summer Workshop on Macroeconomic Theory (Minneapolis, 2002), the Canadian Theory Meeting (Toronto, 2002), and Midwest Macro Meeting (Chicago, 2003).
- 34. "Money, Price Dispersion and Welfare," (with Brian Peterson), presented at Purdue Conference on Monetary Theory (West Lafayette, 2003) and Midwest Macro Meeting (Chicago, 2003).
- 35. "Frictional Assignment, Part II: Infinite Horizon and Inequality," presented at Hong Kong University (Hong Kong, 2001), the Society for Economic Dynamics (New York, 2002) and University of Waterloo (2002).
- 36. "Friedman Meets Hosios: Efficiency in Search Models of Money," (with A. Berentsen and G. Rocheteau), presented at Canadian Macro Study Group meeting (Vancouver, 2001) and the Econometric Society Winter Meeting (Washington DC, 2003).