

2022 EFR Retrospective

Volume 1 / Issue 1 January 2023

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MESSAGE FROM THE MANAGING DIRECTOR

This year in EFR we are starting a new tradition with the January newsletter. While our newsletters provide a timely update on our newly published working papers and journal publications, it is easy to lose track of the volume of research and activities over the year. Starting this year, we will be using the January issue of our newsletter to look back at our research activities over the past year and to celebrate the achievements of our colleagues.

While 2022 did not see the end of COVID that we all hoped for, it did see the beginning of our transition towards our new normal. At the Bank, this saw us begin our experiment with hybrid work. During the fall of 2022, EFR sought to coordinate researchers' in-person

days in the Bank on Tuesdays and Fridays. As part of this plan for hybrid work, we agreed that Tuesdays and Fridays would be the normal days for in-person seminars at the Bank. This effort to coordinate on site time together reflects our belief that a productive and collaborative research environment requires regular opportunities for impromptu in-person conversations.

Our return to the Bank allowed us to return to in-person conferences. Although the timing of the re-opening of the Bank to visitors meant that our first in-person conference – a condensed Fellowship Learning Exchange -- took place at the Marriot, the remainder of our research conferences were held in the friendly confines of our Conference Facility. While we plan to build to continue to offer a virtual participation option, we have returned to primarily in-person conferences. Although being able to participate remotely in discussion during presentations makes our conferences accessible to a wider audience, the most productive discussions at conferences often happen between sessions. This is also why we welcomed the return of business travel in early 2022, which allowed our colleagues to participate in external in-person conferences and seminars.

Researchers across the Bank have successfully managed the challenges of remote work since early 2020. The restrictions on in-person interactions due to limits on travel as well as social distancing have made starting new research projects more challenging. At the same time, the demand for research expertise to help inform many pressing policy questions has remained higher than normal. Despite these pressures, researchers at the Bank have remained extremely productive. Our 2022 Staff Working Paper series – which consists of papers intended for submission to leading journals – saw 53 new entries this year, similar to the pre-COVID level. While our 58 newly accepted papers in journals was down slightly from its 2021 high of 65, we saw a high of 34 articles in Tier 1 and 2 journals. (Our complete list of publications for 2022 is reported below).

The expertise of EFR researchers also played a significant role in impacting policy at the Bank. The range of impacts on policy reflected the breadth and scope of research roles across the Bank. Some examples included contributions to speeches by Governing Council members, contributions to the development of our suite of policy models, insights into our regular Fixed Announcement Dates (FAD) policy cycles as well as numerous background notes. EFR researchers also gave three Thematic Reviews and contributed to a number of Monetary Policy Review Committee (MPRC) and Leadership Forum presentations. This work helped inform discussions on a range of questions, including topics such as how inflation has been impacted by the pandemic, the impact of major storms on trade flows, bank regulation and financial stability, the appropriate scope of Bank of Canada liquidity facilities as well as the potential impact of a CBDC.

Finally, 2022 saw another year of growth and maturation in the organization of EFR. Since being created in 2015, EFR has evolved to play a more active role in developing and supporting a productive research environment across the Bank. This has seen EFR grow beyond its early championing of the importance of research and research career paths to taking a more proactive role in researcher career development, encouraging rotations between Director and Research Advisor roles, experimenting with new ways of research collaboration with the HetLab as well as a more proactive role in the “back-office” of tracking research activities (notably the ongoing development of Elements) and supporting research activities such as conferences. In 2022, EFR added a full-time Deputy Managing Director (DMD) position to help lead our efforts to be more proactive in supporting research, with Sermin Gungor agreeing to serve as our first DMD (thanks Sermin!). The plan is for the DMD position to rotate roughly every two years, which will see EFR colleagues rotating into the EFR leadership team. In addition, we began a search for an additional Senior Research Officer (SRO) to join our leadership team.

As we enter into 2023, we look forward to another dynamic year for the research community at the Bank of Canada. Reflecting the maturation of EFR, we are planning to undertake a review of our research late in 2023. This will help us take stock of both the progress that we have made with EFR since 2015 as well as looking for how we can better support high quality research and the utilization of research expertise to shape policy at the Bank. This will also give us an opportunity to evaluate our experiment with hybrid working and to systematically build on the lessons we are learning about how to make hybrid work. Most importantly, we are looking forward to seeing familiar faces, and making new connections, at conferences and seminars as we engage in another productive year of research.

Best wishes for a productive and happy 2023!

Jim

OUR VISION

Economic and Financial Research staff shape Bank policy by conducting research, publishing in leading scientific journals, and developing researchers into the next generation of Bank leaders.

Le personnel de la Recherche économique et financière oriente les politiques de la Banque en menant des recherches, en publiant des articles dans des revues scientifiques de renom et en préparant les chercheurs qui feront partie de la prochaine génération de leaders de la Banque.

2022 RESEARCH OVERVIEW

RESEARCH CONFERENCES

With the (re)-opening of the Bank to visitors in summer 2022, EFR researchers returned to in-person conferences. In addition to our usual “core” conferences such as the Fellowship Learning Exchange, the Annual FSRC Macro-Finance Conference and the Annual Economic Conference, the Bank hosted several other high quality and interactive research conferences (see below). Building on the lessons of the past two years, our in-person conferences now typically include a hybrid option so as to make our conference sessions accessible to a broader cross section of colleagues.

2022 Bank Hosted Research Conferences

Fellowship Learning Exchange	June 2
International Journal of Central Banking Conference	August 10 & 11
Workshop on Macroeconomic Implications of Migration	August 29 & 30
4th Bank of Canada FSRC Macro-Finance Conference	September 1 & 2
2 nd Workshop on Monetary Policy Research	September 21 & 22
Graduate Student Paper Award	September 23
Economics of Payments XI	October 12, 13 & 14
Annual Economic Conference	November 2, 3 & 4
Conference on Diversity, Equity and Inclusion in Economics, Finance and Central Banking	November 14 & 15

* For more information, please visit our [Bank of Canada conferences and workshops webpage](#).

Welcoming New Friends:

2022 Governor’s Award Recipients



Claire Célérier
*Assistant Professor of Finance, Rotman
School of Management, University of Toronto*

Absent: Patrick Augustin, Associate Professor of Finance, Desautels Faculty of Management, McGill University

2022 Fellowship Award Recipient



Robert Clark
*Professor of Economics and Associate Head,
Department of Economics, Queen's University*

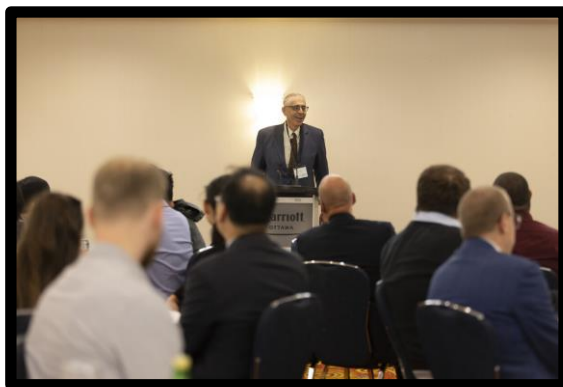
Renewing Old Connections:



Michelle Alexopoulos
*Professor, Department of
Economics, University of Toronto*



Tim Lane
*Deputy Governor (now former),
Bank of Canada*



Larry Schembri
*Deputy Governor (now former),
Bank of Canada*

We are looking forward to another year of dynamic research conferences in 2023. Keep an eye out for the conference invitations (some tentative dates are listed below) as we are looking forward to another year of interesting conversations in our Conference Centre.

2023 Bank-Hosted Research Conferences

The Return of High Inflation Workshop	April 27-28, 2023
Fellowship Learning Exchange	May 2 & 3
8th Conference of Fixed Income Markets	May 25-26, 2023
Economics of Network in Payments Workshop	June 14-15, 2023
FSRC Macro Finance Conference	June 22-24, 2023
Granular Data: New Horizons & Challenges for Central Banks	July 15, 2023
NY Fed-ECB-BoC Annual Conference on Expectations	October 12-13, 2023
BIS-CCA Conference	October 26-27, 2023
Graduate Student Paper Award (GSPA)	November 6, 2023
Annual Economic Conference	November 7 & 8, 2023

RESEARCH PUBLICATIONS

The total publication numbers for 2022 (see *Research Summary Table*) reflect another year of sustained research success at the Bank of Canada. Our Bank colleagues published their research in leading journals, including the *Journal of Finance*, the *Journal of Political Economy*, the *Journal of Monetary Economics*, *AEJ: Macroeconomics* and the *Journal of Econometrics*.

Research Summary Table

Key Success Indicator	Average of Past 3 Years (2019-2021)	2022 Outcome
Number of papers accepted at refereed journals	62	58
Number of papers accepted at Tier 1 journals	3	4
Number of papers accepted at Tier 2 journals	21	30
Number of staff working papers	59	53
Number of staff discussion papers	15	23

JOURNAL PUBLICATIONS IN 2022 BY TIER¹

Tier 1

1. Mario Cipriani & Antonio Guarino & **Andreas Uthemann**, "[Financial transaction taxes and the informational efficiency of financial markets: A structural estimation](#)", *Journal of Financial Economics*, Vol. 146(3): 1044-1072, December 2022
2. **Jonathan Chiu & Mohammad Davoodalhosseini & Janet (Hua) Jiang & Yu Zhu**, "[Bank Market Power and Central Bank Digital Currency: Theory and Quantitative Assessment](#)", *Journal of Political Economy*, forthcoming

¹ The list of 2022 publications includes papers that were reported as published or accepted in 2022. Papers that were accepted in 2021 but published in 2022 are not included here, as they were included in the 2021 publication list. Our flow of publications is reported in our monthly newsletter (for example, see the [December 2022 newsletter](#)). The names of Bank colleagues are in bold font.

3. Alexandre Corhay & Thilo Kind & Howard Kung & **Gonzalo Morales**, [“Discount Rates, Debt Maturity, and the Fiscal Theory”](#), *Journal of Finance*, forthcoming
4. **Ingomar Krohn** & Philippe Mueller & Paul Whelan, [“Foreign Exchange Fixings and Returns Around the Clock”](#), *Journal of Finance*, forthcoming

Tier 2

5. **Sushant Acharya** & **Julien Bengui** & Keshav Dogra & **Shu Lin Wee**, [“Slow Recoveries and Unemployment Traps: Monetary Policy in a Time of Hysteresis”](#), *The Economic Journal*, Vol. 132(646): 2007-2047, August 2022
6. **Toni Ahnert** & Kartik Anand & Philipp Johann Koenig, [“Real Interest Rates, Bank Borrowing, and Fragility”](#), *Journal of Money, Credit and Banking*, forthcoming
7. **Toni Ahnert** & Christoph Bertsch, [“A Wake-Up Call Theory of Contagion”](#), *Review of Finance*, Vol. 26(4): 829-854, July 2022
8. Jasmina Arifovic & **Cars Hommes** & Anita Kopányi-Peuker & Isabelle Salle, [“Ten Isn’t Large! Group Size and Coordination in a Large-Scale Experiment”](#), *American Economic Journal: Microeconomics*, forthcoming
9. **Paul Beaudry** & Tim Willems, [“On the Macroeconomic Consequences of Over-Optimism”](#), *American Economic Journal: Macroeconomics*, Vol. 14(1): 38-59, January 2022
10. **Julien Bengui** & Javier Bianchi, [“Macroprudential policy with leakages”](#), *Journal of International Economics*, Vol. 139, November 2022
11. Huixin Bi & Yongquan Cao & **Wei Dong**, [“Credit Guarantee and Fiscal Costs”](#), *Journal of Money, Credit and Banking*, forthcoming
12. Serdar Birinci & **Kurt See**, [“Labor Market Responses to Unemployment Insurance: The Role of Heterogeneity”](#), *American Economic Journal: Macroeconomics*, forthcoming
13. Marco Bonomo & Carlos Carvalho & **Oleksiy Kryvtsov** & Sigal Ribon & Rodolfo Rigato, [“Multiproduct Pricing: Theory and Evidence from Large Retailers”](#), *The Economic Journal*, forthcoming
14. Audra Bowlus & Émilien Gouin-Bonenfant & Huju Liu & Lance Lochner & **Youngmin Park**, [“Four decades of Canadian earnings inequality and dynamics across workers and firms”](#), *Quantitative Economics*, Vol 13(4): 1447-1491, November 2022
15. **Matteo Cacciatore** & Nora Traum, [“Trade Flows and Fiscal Multipliers”](#), *Review of Economics and Statistics*, Vol. 104(6): 1206-1223, November 2022
16. Antoine Camous & **Dmitry Matveev**, [“The Central Bank Strikes Back! Credibility of Monetary Policy under Fiscal Influence”](#), *The Economic Journal*, Vol 133(649): 1-29, January 2023
17. **Tony Chernis** & Patrick J. Coe & Shaun P. Vahey, [“Reassessing the dependence between economic growth and financial conditions since 1973”](#), *Journal of Applied Econometrics*, forthcoming

18. George W. Evans & **Cars Hommes** & Bruce McGough & Isabelle Salle, "[Are long-horizon expectations \(de-\)stabilizing? Theory and experiments](#)", *Journal of Monetary Economics*, Vol. 132: 44-63, November 2022
19. Amit Gandhi & **Zhentong Lu** & Xiaoxia Shi, "[Estimating Demand for Differentiated Products with Zeroes in Market Share Data](#)", *Quantitative Economics*, forthcoming
20. Serafin Grundl & **Yu Zhu**, "[Robust inference in first-price auctions: Overbidding as an identifying restriction](#)", *Journal of Econometrics*, forthcoming
21. **Xing Guo** & Pablo Ottonello & Diego J. Perez, "[Monetary Policy and Redistribution in Open Economies](#)", *Journal of Political Economy Macroeconomics*, forthcoming
22. **Daniela Hauser** & Martin Seneca, "[Labor mobility in a monetary union](#)", *Journal of International Economics*, Vol. 137, July 2022
23. Myrna Hennequin & **Cars Hommes**, "[Managing bubbles in experimental asset markets with monetary policy](#)", *Journal of Money, Credit and Banking*, forthcoming
24. **Shota Ichihashi**, "[Dynamic Privacy Choices](#)", *American Economic Journal: Microeconomics*, forthcoming
25. **Shota Ichihashi** & Byung-Cheol Kim, "[Addictive Platforms](#)", *Management Science*, forthcoming
26. **Yuko Imura**, "[Reassessing trade barriers with global production networks](#)", *Review of Economic Dynamics*, forthcoming
27. DongIk Kang & **Andrew Usher**, "[Does product revenue matter for price setting and monetary policy transmission?](#)", *Review of Economic Dynamics*, Vol 47: 297-345, January 2023
28. **Katya Kartashova** & Xiaoqing Zhou, "[How Do Mortgage Rate Resets Affect Consumer Spending and Debt Repayments? Evidence from Canadian Consumers](#)", *Journal of Money, Credit and Banking*, forthcoming
29. **Jiaqi Li**, "[Predicting the demand for central bank digital currency: A structural analysis with survey data](#)", *Journal of Monetary Economics*, forthcoming
30. Shanjun Li & **Youming Liu** & Chao Wei, "[The Cost of Greening Stimulus: A Dynamic Discrete Choice Analysis of Vehicle Scrappage Programs](#)", *International Economic Review*, Vol. 63(4): 1561-1594, November 2022
31. **Zhentong Lu** & Xiaoxia Shi & Jing Tao, "[Semi-nonparametric estimation of random coefficient logit model for aggregate demand](#)", *Journal of Econometrics*, forthcoming
32. Jacek Rothert & **Jacob Short**, "[Non-traded goods, factor markets frictions, and international capital flows](#)", *Review of Economic Dynamics*, forthcoming
33. Julia Schmidt & **Walter Steingress**, "[No double standards: Quantifying the impact of standard harmonization on trade](#)", *Journal of International Economics*, Vol. 137, July 2022
34. **Kerem Tuzcuoglu**, "[Composite Likelihood Estimation of an Autoregressive Panel Ordered Probit Model with Random Effects](#)", *Journal of Business & Economic Statistics*, forthcoming

Other

35. Gökçe Akın-Olçum & **Madanmohan Ghosh** & Elisabeth Gilmore & Peter Johnston & Mohammad M. Khabbazan & Ruben Lubowski & Margaret McCallister & Nick Macaluso & Sonja Peterson & Malte Winkler & Maosheng Duan & Mengyu Li & Ramiro Parrado & Sebastian Rausch, [“A model intercomparison of the welfare effects of regional coalitions for ambitious climate mitigation targets”](#), *Climate Change Economics*, forthcoming
36. Neville Arjani & Fuchun Li & **Zhentong Lu**, [“Quantifying the economic benefits of payments modernization: the case of the large-value payment system”](#), *Journal of Financial Market Infrastructures*, forthcoming
37. Collin Brown & **Jonathan Chiu** & Thorsten V. Koepl, [“What drives Bitcoin fees? Using SegWit to assess Bitcoin’s long-run sustainability”](#), *Journal of Financial Market Infrastructures*, Vol. 9(4): 1-25, January 2022
38. Joel Bruneau & **Madanmohan Ghosh** & Deming Luo & Yunfa Zhu, [“Income and investment, not energy policy, are driving GHG emission intensities”](#), *Economic Systems Research*, forthcoming
39. **James Chapman**, [“Discussion of “The macroeconomics of central bank digital currencies”](#)”, *Journal of Economic Dynamics and Control*, Vol. 142, September 2022
40. **Alex W. Chernoff** & Casey Warman, [“COVID-19 and Implications for Automation”](#), *Applied Economics*, forthcoming
41. **Jonathan Chiu**, [“Book Review of ‘Blockchain Technologies, Applications and Cryptocurrencies: Current Practice and Future Trends’”](#), *Journal of Economic Literature*, Vol. 60(1): 279-284, March 2022
42. **Jonathan Chiu** & Charles M. Kahn & Thorsten V. Koepl, [“Grasping decentralized finance through the lens of economic theory”](#), *Canadian Journal of Economics*, Vol 55(4): 1702-1728, November 2022
43. **Jonathan Chiu** & Todd Keister, [“The economics of digital currencies: Progress and open questions”](#), *Journal of Economic Dynamics and Control*, Vol. 142, September 2022
44. **Jonathan Chiu** & Thorsten V. Koepl, [“The economics of cryptocurrencies: Bitcoin and beyond”](#), *Canadian Journal of Economics*, Vol 55(4): 1762-1798, November 2022
45. Adam Daigneault & Justin S. Baker & Jinggang Guo & Pekka Lauri & Alice Favero & Nicklas Forsell & **Craig Johnston** & Sara B. Ohrel & Brent Sohngen, [“How the future of the global forest sink depends on timber demand, forest management, and carbon policies”](#), *Global Environmental Change*, Vol. 76, September 2022
46. **Mohammad Davoodalhosseini**, [“Optimal taxation in asset markets with adverse selection”](#), *European Economic Review*, Vol. 147, August 2022
47. **Edouard Djeutem** & **Geoffrey R. Dunbar**, [“Uncovered return parity: Equity returns and currency returns”](#), *Journal of International Money and Finance*, Vol. 128, November 2022
48. **Reinhard Ellwanger** & Stephen Snudden, [“Futures prices are useful predictors of the spot price of crude oil”](#), *The Energy Journal*, forthcoming

49. Gavin Goy & **Cars Hommes** & Kostas Mavromatis, "[Forward guidance and the role of central bank credibility under heterogeneous beliefs](#)", *Journal of Economic Behavior and Organization*, Vol. 200: 1240-1274, August 2022
50. Bulent Guler & Yasin Kürşat Önder & **Temel Taskin**, "[Hidden Debt](#)", *AEA Papers and Proceedings*, Vol. 112(1): 536-540, May 2022
51. **Cars Hommes** & Kai Li & Florian Wagener, "[Production delays and price dynamics](#)", *Journal of Economic Behavior & Organization*, Vol. 194: 341-362, February 2022
52. Maarten Janssen & **Edona Reshidi**, "[Regulating recommended retail prices](#)", *International Journal of Industrial Organization*, Vol. 85, December 2022
53. Maarten Janssen & **Edona Reshidi**, "[Discriminatory Trade Promotions in Consumer Search Markets](#)", *Marketing Science*, forthcoming
54. **Janet (Hua) Jiang** & Daniela Puzello & Cathy Zhang, "[Inflation, Output and Welfare in the Laboratory](#)", *European Economic Review*, forthcoming
55. **Serdar Kabaca** & Renske Maas & Kostas Mavromatis & Romanos Priftis, "[Optimal quantitative easing in a monetary union](#)", *European Economic Review*, Vol. 152, February 2023
56. Sebastian Poledna & Michael Gregor Miess & **Cars Hommes** & Katrin Rabitsch, "[Economic forecasting with an agent-based model](#)", *European Economic Review*, Vol. 151, January 2023
57. Daniel E. Rigobon & **Thibaut Duprey** & Artur Kotlicki & Phillip Schnattinger & **Soheil Baharian** & Thomas R. Hurd, "[Business Closures and \(Re\)Openings in Real-Time Using Google Places: Proof of Concept](#)", *Journal of Risk and Financial Management*, Vol. 15(4), April 2022
58. **Francisco Rivadeneyra** & **Nellie Zhang**, "[Payment Coordination and Liquidity Efficiency in the New Canadian Wholesale Payments System](#)", *Journal of Financial Market Infrastructures*, forthcoming

BOOK CHAPTERS in 2022

1. **Walter Engert** & **Kim P. Huynh**, "[Cash, COVID-19 and the Prospects for a Canadian Digital Dollar.](#)" In *The Euro at 20: The Future of Our Money*, edited by Johannes Beermann. Munich: Penguin Verlag, 2022

STAFF WORKING PAPERS in 2022

1. **Thibaut Duprey** & Daniel E. Rigobon & Philip Schnattinger & Artur Kotlicki & **Soheil Baharian** & T. R. Hurd, "[Business Closures and \(Re\)Openings in Real Time Using Google Places](#)", Bank of Canada Staff Working Paper 2022-1
2. Colin Brown & **Jonathan Chiu** & Thorsten Koepl, "[What Drives Bitcoin Fees? Using Segwit to Assess Bitcoin's Long-Run Sustainability](#)", Bank of Canada Staff Working Paper 2022-2
3. **Wenting Song** & Samuel Stern, "[Firm Inattention and the Efficacy of Monetary Policy: A Text-Based Approach](#)", Bank of Canada Staff Working Paper 2022-3
4. **Sushant Acharya** & Keshav Dogra & Sanjay Singh, "[The Financial Origins of Non-fundamental Risk](#)", Bank of Canada Staff Working Paper 2022-4

5. Shang-Jin Wei & **Yinxi Xie**, ["On the Wedge Between the PPI and CPI Inflation Indicators"](#), Bank of Canada Staff Working Paper 2022-5
6. **Xing Guo** & Pablo Ottonello & Diego Perez, ["Monetary Policy and Redistribution in Open Economies"](#), Bank of Canada Staff Working Paper 2022-6
7. **Christian Friedrich** & **Peter Selcuk**, ["The Impact of Globalization and Digitalization on the Phillips Curve"](#), Bank of Canada Staff Working Paper 2022-7
8. **Shota Ichihashi**, ["Dynamic Privacy Choices"](#), Bank of Canada Staff Working Paper 2022-8
9. **David Cimon** & **Adrian Walton**, ["Central Bank Liquidity Facilities and Market Making"](#), Bank of Canada Staff Working Paper 2022-9
10. **James Chapman** & **Ajit Desai**, ["Macroeconomic Predictions Using Payments Data and Machine Learning"](#), Bank of Canada Staff Working Paper 2022-10
11. Antoine Camous & **Dmitry Matveev**, ["The Central Bank Strikes Back! Credibility of Monetary Policy under Fiscal Influence"](#), Bank of Canada Staff Working Paper 2022-11
12. **Edouard Djeteur** & **Mario He** & **Abeer Reza** & **Yang Zhang**, ["Household Heterogeneity and the Performance of Monetary Policy Frameworks"](#), Bank of Canada Staff Working Paper 2022-12
13. **Edona Reshidi**, ["Vertical Bargaining and Obfuscation"](#), Bank of Canada Staff Working Paper 2022-13
14. **Felipe Alves**, ["Job Ladder and Business Cycles"](#), Bank of Canada Staff Working Paper 2022-14
15. **Kim Huynh** & **Gradon Nicholls** & **Oleksandr Shcherbakov**, ["Equilibrium in Two-Sided Markets for Payments: Consumer Awareness and the Welfare Cost of the Interchange Fee"](#), Bank of Canada Staff Working Paper 2022-15
16. **Shota Ichihashi** & Byung-Cheol Kim, ["Addictive Platforms"](#), Bank of Canada Staff Working Paper 2022-16
17. Alejandra Bellatin & **Gabriela Galassi**, ["What COVID-19 May Leave Behind: Technology-Related Job Postings in Canada"](#), Bank of Canada Staff Working Paper 2022-17
18. **Patrick Alexander** & **Abeer Reza**, ["Exports and the Exchange Rate: A General Equilibrium Perspective"](#), Bank of Canada Staff Working Paper 2022-18
19. **Radoslav Raykov** & Consuelo Silva-Buston, ["Asymmetric Systemic Risk"](#), Bank of Canada Staff Working Paper 2022-19
20. Michelle Alexopoulos & **Xinfen Han** & **Oleksiy Kryvtsov** & **Xu Zhang**, ["More Than Words: Fed Chairs' Communication During Congressional Testimonies"](#), Bank of Canada Staff Working Paper 2022-20
21. Ming Zeng & **Guihai Zhao**, ["Expectation-Driven Term Structure of Equity and Bond Yields"](#), Bank of Canada Staff Working Paper 2022-21

22. **Erhao Xie**, [“Nonparametric Identification of Incomplete Information Discrete Games with Non-equilibrium Behaviors”](#), Bank of Canada Staff Working Paper 2022-22
23. **Anneke Kosse & Zhentong Lu**, [“Transmission of Cyber Risk Through the Canadian Wholesale Payment System”](#), Bank of Canada Staff Working Paper 2022-23
24. Pablo Ottonello & **Wenting Song**, [“Financial Intermediaries and the Macroeconomy: Evidence from a High-Frequency Identification”](#), Bank of Canada Staff Working Paper 2022-24
25. **Patrick Alexander** & Sami Alpanda & **Serdar Kabaca**, [“Foreign Exchange Interventions: The Long and the Short of It”](#), Bank of Canada Staff Working Paper 2022-25
26. Daniela Balutel & **Christopher Henry** & **Kim Huynh** & Marcel Voia, [“Cash in the Pocket, Cash in the Cloud: Cash Holdings of Bitcoin Owners”](#), Bank of Canada Staff Working Paper 2022-26
27. Wei Cui & Randall Wright & **Yu Zhu**, [“Endogenous Liquidity and Capital Reallocation”](#), Bank of Canada Staff Working Paper 2022-27
28. **Ugochi Emenogu** & **Brian Peterson**, [“Unregulated Lending, Mortgage Regulations and Monetary Policy”](#), Bank of Canada Staff Working Paper 2022-28
29. **Vladimir Skavysh** & **Sofia Priazhkina** & Diego Guala & Thomas Bromley, [“Quantum Monte Carlo for Economics: Stress Testing and Macroeconomic Deep Learning”](#), Bank of Canada Staff Working Paper 2022-29
30. **Serdar Kabaca** & **Kerem Tuzcuoglu**, [“International Transmission of Quantitative Easing Policies: Evidence from Canada”](#), Bank of Canada Staff Working Paper 2022-30
31. **Xiangjin Shen** & **Iskander Karibzhanov** & Hiroki Tsurumi & Shiliang Li, [“Comparison of Bayesian and Sample Theory Parametric and Semiparametric Binary Response Models”](#), Bank of Canada Staff Working Paper 2022-31
32. **Toni Ahnert** & Michael Brolley & **David Cimon** & Ryan Riordan, [“Cyber Security and Ransomware in Financial Markets”](#), Bank of Canada Staff Working Paper 2022-32
33. **Olena Kostyshyna** & **Luba Petersen** & **Jing Yang**, [“A Horse Race of Monetary Policy Regimes: An Experimental Investigation”](#), Bank of Canada Staff Working Paper 2022-33
34. **Monica Jain** & **Olena Kostyshyna** & **Xu Zhang**, [“How Do People View Price and Wage Inflation?”](#), Bank of Canada Staff Working Paper 2022-34
35. **Jonathan Chiu** & **Thorsten Koepl**, [“PayTech and the D\(ata\) N\(etwork\) A\(ctivities\) of BigTech Platforms”](#), Bank of Canada Staff Working Paper 2022-35
36. **Johan Brannlund** & **Geoffrey R. Dunbar** & **Reinhard Ellwanger** & **Matthew Krutkiewicz**, [“Weather the Storms? Hurricanes, Technology and Oil Production”](#), Bank of Canada Staff Working Paper 2022-36
37. **Martin Harding** & Rafael Wouters, [“Risk and State-Dependent Financial Frictions”](#), Bank of Canada Staff Working Paper 2022-37

38. Efrem Castelnuovo & **Kerem Tuzcuoglu** & **Luis Uzeda**, [“Sectoral Uncertainty”](#), Bank of Canada Staff Working Paper 2022-38
39. Denis Gorea & **Oleksiy Kryvtsov** & Marianna Kudlyak, [“House Price Responses to Monetary Policy Surprises: Evidence from the U.S. Listings Data”](#), Bank of Canada Staff Working Paper 2022-39
40. **Michael Boutros**, [“Windfall Income Shocks with Finite Planning Horizons”](#), Bank of Canada Staff Working Paper 2022-40
41. **Paul Beaudry** & **Thomas J. Carter** & Amartya Lahiri, [“Looking Through Supply Shocks versus Controlling Inflation Expectations: Understanding the Central Bank Dilemma”](#), Bank of Canada Staff Working Paper 2022-41
42. **Cars Hommes** & Kostas Mavromatis & **Tolga Özden** & Mei Zhu, [“Behavioral Learning Equilibria in New Keynesian Models”](#), Bank of Canada Staff Working Paper 2022-42
43. **Jonathan Chiu** & Charles M. Kahn & Thorsten Koepl, [“Grasping De\(centralized\) Fi\(nance\) Through the Lens of Economic Theory”](#), Bank of Canada Staff Working Paper 2022-43
44. Daniela Balutel & **Walter Engert** & **Christopher Henry** & **Kim Huynh** & Marcel Voia, [“Private Digital Cryptoassets as Investment? Bitcoin Ownership and Use in Canada, 2016-2021”](#), Bank of Canada Staff Working Paper 2022-44
45. Pierre-Olivier Gourinchas & Şebnem Kalemli-Özcan & Veronika Penciakova & **Nicholas Sander**, [“Fiscal Policy in the Age of COVID-19: Does It ‘Get in All of the Cracks’?”](#), Bank of Canada Staff Working Paper 2022-45
46. **Julien Bengui** & Louphou Coulibaly, [“Stagflation and Topsy-Turvy Capital Flows”](#), Bank of Canada Staff Working Paper 2022-46
47. **Lin Shao** & Faisal Sohail & Emircan Yurdagul, [“Are Working Hours Complements in Production?”](#), Bank of Canada Staff Working Paper 2022-47
48. Rodney J. Garratt & **Sofia Priazhkina**, [“Regulatory Requirements of Banks and Arbitrage in the Post-Crisis Federal Funds Market”](#), Bank of Canada Staff Working Paper 2022-48
49. **Julien Champagne** & Émilien Gouin-Bonenfant, [“Monetary Policy, Credit Constraints and SME Employment”](#), Bank of Canada Staff Working Paper 2022-49
50. **Martin Harding** & Jesper Lindé & Mathias Trabandt, [“Understanding Post-COVID Inflation Dynamics”](#), Bank of Canada Staff Working Paper 2022-50
51. **Cars Hommes** & **Mario He** & Sebastian Poledna & Melissa Siqueira & **Yang Zhang**, [“CANVAS: A Canadian Behavioral Agent-Based Model”](#), Bank of Canada Staff Working Paper 2022-51
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