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Bank of Canada Monthly Research Update

October 2021

This monthly newsletter features the latest research publications by Bank of Canada economists. The report includes papers appearing in external publications and staff working papers published on the Bank of Canada's website.

PUBLISHED PAPERS

In-Press

Wee, Shu Lin & Pilossoph, Laura, "Household Search and the Marital Wage Premium", American Economic Journal: Macroeconomics, Vol 13(4): 55-109, October 2021

Hommes, Cars & Bao, Te & Pei, Jiaoying, "Expectation formation in finance and macroeconomics: A review of new experimental evidence", Journal of Behavioral and Experimental Finance, Vol 32: 100591, December 2021

Forthcoming

Shcherbakov, Oleksandr, "Firm-level investment under imperfect capital markets in Ukraine", Journal of Economics & Management Strategy

Halaj, Grzegorz & Battiston, Stefano & D'Errico, Marco & Kok, Christoffer & Roncoroni, Alan, "Interconnected banks and systemically important exposures", Journal of Economic Dynamics and Control

Harding, Martin & Linde, Jesper & Trabandt, Mathias, "Resolving the missing deflation puzzle", Journal of Monetary Economics

Ozhan, Galip Kemal, "News-driven international credit cycles", Journal of Macroeconomics

STAFF WORKING PAPERS

Jo, Soojin & Karnizova, Lilia, "Energy Efficiency and Fluctuations in CO2 Emissions", Bank of Canada Staff Working Paper 2021-47

Krohn, Ingomar & Mueller, Philippe & Whelan, Paul, "Foreign Exchange Fixings and Returns Around the Clock", Bank of Canada Staff Working Paper 2021-48

Birinci, Serdar & See, Kurt & Wee, Shu Lin, "Job Applications and Labour Market Flows", Bank of Canada Staff Working Paper 2021-49

Raykov, Radoslav, "Systemic Risk and Portfolio Diversification: Evidence from the Futures Market", Bank of Canada Staff Working Paper 2021-50

Woodford, Michael & Xie, Yinxi, "Fiscal and Monetary Stabilization Policy at the Zero Lower Bound: Consequences of Limited Foresight", Bank of Canada Staff Working Paper 2021-51

Cavallo, Alberto & Kryvtsov, Oleksiy, “What Can Stockouts Tell Us About Inflation? Evidence from Online Micro Data”, Bank of Canada Staff Working Paper 2021-52

Salle, Isabelle, “What to Target? Insights from a Lab Experiment”, Bank of Canada Staff Working Paper 2021-53

Brandon, Rajna Gibson & Odabasioglu, Alper, “Banks' Lobbying Determinants: Insights from the GFC and the Trump Presidency”, European Corporate Governance Institute – Finance Working Paper No. 784/2021

STAFF DISCUSSION PAPERS

Ens, Eric & Savoie-Chabot, Laurence & See, Kurt & Wee, Shu Lin, ”Assessing Labour Market Slack for Monetary Policy”, Bank of Canada Staff Discussion Paper 2021-15

ABSTRACTS

Household Search and the Marital Wage Premium

We develop a model where selection into marriage and household search generate a marital wage premium. Beyond selection, married individuals earn higher wages for two reasons. First, income pooling within a joint household raises risk-averse individuals' reservation wages. Second, married individuals climb the job ladder faster, as they internalize that higher wages increase their partner's selectivity over offers. Specialization according to comparative advantage in search generates a premium that increases in spousal education, as in the data. Quantitatively, household search explains 10–33 percent and 20–58 percent of the premium for males and females, respectively, and accounts for its increase with spousal education.

Expectation formation in finance and macroeconomics: A review of new experimental evidence

This paper reviews the recent development and new findings of the literature on learning-to-forecast experiments (LtFEs). In general, the stylized finding in the typical LtFEs, namely the rapid convergence to the rational expectations equilibrium in negative feedback markets and persistent bubbles and crashes in positive feedback markets, is a robust result against several deviations from the baseline design (e.g., number of subjects in each market, price prediction versus quantity decision, short term versus long term predictions, predicting price or returns). Recent studies also find a high level of consistency between findings from forecasting data from the laboratory and the field, and forecasting accuracy crucially depends on the complexity of the task.

Firm-level investment under imperfect capital markets in Ukraine

This paper develops and estimates a model of firm-level fixed capital investment where firms may be unable to invest optimally due to liquidity and borrowing constraints. Firms rationally anticipate these constraints and make dynamically optimal investment decisions. Structural parameters are estimated using data from the Ukrainian manufacturing sector for the period 1993–1998. The estimation results suggest significant heterogeneity across industries, with 8%–29% of firms facing binding constraints on investment. These constraints are persistent over time. To make optimal investments,

24%–64% of firms must borrow to complement their own resources. The characteristics of constrained firms and the relationship between industry institutions and the level of financial constraints are discussed.

Interconnected banks and systemically important exposures

We study the impact of the interplay between the structure of the financial network and market conditions on financial stability in the European banking system. We capture two channels of financial contagion. The first channel concerns direct interconnectedness, via a network of interbank loans, banks' loans to other corporate and retail clients, and securities holdings. The second channel concerns indirect interconnectedness, via overlapping exposures to common asset classes. To assess the impact of contagion, we apply the structural valuation model NEVA, in which common shocks to banks' external assets are reflected in a consistent way in the market value of banks' mutual liabilities through the network of obligations. Applying the model to a unique supervisory data set collected by the European Central Bank that covers 26 large banks in the euro area we identify a strongly non-linear relationship between diversification of exposures, shock size, and losses due to interbank contagion. We also demonstrate the potential for contagion effects to amplify first-round stress test results due to interconnectedness. Finally, we provide insights into the potential impact of more diversified versus more domestic portfolio allocation strategies on the propagation of contagion, which are relevant to policy discussions about international risk sharing, for instance, in the context of the EU Capital Market Union.

Resolving the missing deflation puzzle

A resolution of the missing deflation puzzle is proposed. Our resolution stresses the importance of nonlinearities in price- and wage-setting when the economy is exposed to large shocks. We show that a nonlinear macroeconomic model with real rigidities resolves the missing deflation puzzle, while a linearized version of the same underlying nonlinear model fails to do so. In addition, our nonlinear model reproduces the skewness of inflation and other macroeconomic variables observed in post-war U.S. data. All told, our results caution against the common practice of using linearized models to study inflation and output dynamics.

News-driven international credit cycles

How does news about future economic fundamentals affect within-country and cross-country credit allocation? How effective is unconventional policy when financial crises are driven by unfulfilled favorable news? I study these questions by employing a two-sector, two-country macroeconomic model with a banking sector in which financial crises are associated with occasionally binding leverage constraints. In response to positive news on the valuation of non-traded sector capital which turns out to be incorrect at a later date, the model captures the patterns of financial flows and current account dynamics in Spain between 2000–2010, including the changes in the sectoral allocation of bank credit and movements in cross-country borrowing during the boom and the bust. When there are unconventional policies by a common authority in response to unfulfilled favorable news, liquidity injections perform better in ameliorating the downturn than direct assets purchases from the non-traded sector.

Energy Efficiency and Fluctuations in CO2 Emissions

CO2 emissions are commonly perceived to rise and fall with aggregate output. Yet many factors, including energy-efficiency improvements, emissions coefficient variations and shifts to cleaner energy, can break the positive emissions-output relationship. To evaluate the importance of such factors, we uncover shocks that by construction reduce emissions without lowering output. These novel shocks explain a substantial fraction of emissions fluctuations. After extensively examining their impacts on macroeconomic and environmental indicators, we interpret these shocks as changes in the energy efficiency of consumer products. Our results imply that models omitting energy efficiency likely overestimate the trade-off between environmental protection and economic performance.

Foreign Exchange Fixings and Returns Around the Clock

We document that intraday currency returns display systematic reversals around the major benchmark fixings, characterized by an appreciation of the U.S. dollar pre-fix and a depreciation post-fix. We propose an explanation based on constrained intermediation by foreign exchange dealers. Exploiting data from a major inter-dealer platform, we present evidence of an unconditional demand for U.S. dollars at currency fixings. Dealers hedge this demand pre-fix, driving intraday reversals in both over-the-counter and exchange-traded markets. Furthermore, order imbalances in futures markets are not related to intraday reversal patterns, suggesting that the marginal investors in foreign exchange markets are intermediaries.

Job Applications and Labour Market Flows

Job applications have risen over time, yet job-finding rates have remained unchanged. Meanwhile, job separations have declined. We argue that an increase in the number of applications raises the probability of finding a good match rather than the probability of finding a job. Using a search model with multiple applications and costly information, we show that when applications increase, firms invest in identifying good matches, thereby reducing separations. Concurrently, increased congestion and selectivity over which offer to accept temper increases in job-finding rates. Our framework contains testable implications for changes in offers, acceptances, reservation wages, applicants per vacancy, and tenure, factors that enable us to generate the trends in unemployment flows.

Systemic Risk and Portfolio Diversification: Evidence from the Futures Market

This paper explores the extent to which correlated investments in the futures market concentrated systemic risk on large Canadian banks around the 2008 crisis. We find that core banks took positions against the periphery, increasing their systemic risk as a group. On the portfolio level, position similarity was the main systemic risk driver for core banks, while crossprice correlations drove the systemic risk of noncore banks. Core banks were more diversified, but their portfolios also overlapped more. By contrast, non-core banks were less diversified, but also overlapped less. This significantly nuances the debate on concentration versus diversification as systemic risk sources.

Fiscal and Monetary Stabilization Policy at the Zero Lower Bound: Consequences of Limited Foresight

This paper reconsiders the degree to which macroeconomic stabilization is possible when the zero lower bound is a relevant constraint on the effectiveness of conventional monetary policy, under an assumption of bounded rationality. In particular, we reconsider the potential role of countercyclical fiscal transfers as a tool of stabilization policy. Because Ricardian equivalence no longer holds when planning horizons are finite (even when relatively long), we find that fiscal transfers can be a powerful tool to reduce the contractionary impact of an increased financial wedge during a crisis and can even make possible complete stabilization of both aggregate output and inflation under certain circumstances, despite the binding lower bound on interest rates. However, the power of such policies depends on the degree of monetary policy accommodation. We also show that a higher level of welfare is generally possible if both monetary and fiscal authorities commit themselves to history-dependent policies in the period after the financial disturbance that causes the lower bound to bind has dissipated.

What Can Stockouts Tell Us About Inflation? Evidence from Online Micro Data

We use a detailed micro dataset on product availability to construct a direct high frequency measure of consumer product shortages during the 2020–21 pandemic. We document a widespread multi-fold rise in shortages in nearly all sectors early in the pandemic. Over time, the composition of shortages evolved from many temporary stockouts to mostly discontinued products, concentrated in fewer sectors. We show that product shortages have significant but transitory inflationary effects and that these effects can be associated with elevated costs of replenishing inventories.

What to Target? Insights from a Lab Experiment

This paper compares alternative monetary policy regimes within a controlled lab environment, where groups of participants are tasked with repeatedly forecasting inflation in a simple macroeconomic model featuring only the dynamics of interest rates, inflation and inflation expectations. Average-inflation targeting can approximate the price path observed under price-level targeting in the presence of disinflationary shocks and enable subjects to coordinate on simple heuristics that reflect the concern of the central bank for past inflation gaps. However, this depends on the exact specification of the policy rule. In particular, if the central bank considers more than two lags, subjects fail to form expectations that are consistent with the monetary policy rule, which results in greater inflation volatility. Reinforcing communication around the target helps somewhat anchor longrun inflation expectations.

Banks' Lobbying Determinants: Insights from the GFC and the Trump Presidency

This study examines the relationship between banks' main financial and business characteristics and their lobbying intensity during the last two decades. A novel feature of our analysis is that we adopt a network perspective to measure banks' lobbying intensity. We find that banks are more likely to lobby when they are larger, less creditworthy, venture into non-traditional businesses and face higher agency conflicts. Next, we observe that subsequent to the GFC and with the announcement of the Dodd-Frank bill, there was a significant increase in lobbying undertaken by banks with higher revenues stemming from trading and securitization. Finally, during the Trump Presidency, banks with higher trading revenues lobbied significantly more.

Assessing Labour Market Slack for Monetary Policy

The large and uneven impact of COVID-19 has emphasized the complexity and diversity of the labour market. This complexity implies that traditional headline measures may be inadequate at providing a comprehensive picture of labour market health. We address this concern in two ways. First, we construct a summary indicator of the labour market and use it to evaluate the level of disagreement between various labour market measures. Our exercise reveals that the COVID-19 shock has heightened the degree of disagreement between different indicators. The unprecedented level of disagreement across individual measures implies that a single measure cannot fully account for differences in labour market slack across various groups, or for the quality of job gains. Second, we propose a comprehensive framework to assess the labour market recovery along three dimensions, all of which capture different elements of slack: overall labour market conditions, labour market inclusiveness and job characteristics. As an example of how to apply this approach, we identify areas of concern in the ongoing recovery of the Canadian labour market.

UPCOMING EVENTS

*** All onsite conferences and events are suspended until further notice. All events listed below will take place virtually.**

Ozge Akinci (Federal Reserve Bank of New York)
Organizer: EFR CEA/INT Seminar Series
Date: 5 November 2021

Tomas Williams (George Washington University)
Organizer: EFR CEA/INT Seminar Series
Date: 12 November 2021

Michael Gelman (The Robert Day School of Economics)
Organizer: FMD / FSD EFR Seminar Series
Date: 18 November 2021

Jesse Schreger (Columbia Business School)
Organizer: EFR CEA/INT Seminar Series
Date: 19 November 2021

Michael D. Bauer (Universität Hamburg)
Organizer: EFR CEA/INT Seminar Series
Date: 25 November 2021

Jing Cynthia Wu (University of Notre Dame, NBER)
Organizer: FMD FSD/EFR Seminar Series
Date: 2 December 2021

Daniel Greenwald (MIT)
Organizer: EFR CEA/INT Seminar Series
Date: 3 December 2021

Erica Jiang (USC Marshall School of Business)
Organizer: FMD FSD/EFR Seminar Series
Date: 9 December 2021

Roméo Tédongap (ESSEC Business School)
Organizer: FMD FSD/EFR Seminar Series
Date: 16 December 2021