



BANK OF CANADA
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Bank of Canada Monthly Research Update

October 2018

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

Jiang, Janet (Hua) & Zhang, Cathy, “Competing currencies in the laboratory”, *Journal of Economic Behaviour & Organization*, Volume 154, 253-280

STAFF WORKING PAPERS

Bi, Huixin & Cao, Yongquan & Dong, Wei, “Non-Performing Loans, Fiscal Costs and Credit Expansion in China”, Bank of Canada Staff Working Paper 2018-53

Champagne, Julien & Poulin-Bellisle, Guillaume & Sekkel, Rodrigo, “Evaluating the Bank of Canada Staff Economic Projections Using a New Database of Real-Time Data and Forecasts”, Bank of Canada Staff Working Paper 2018-52

Raykov, Radoslav & Silva-Buston, Consuelo, “Multibank Holding Companies and Bank Stability”, Bank of Canada Staff Working Paper 2018-51

STAFF DISCUSSION PAPERS

Dahlhaus, Tatjana & Lam, Alexander, “Assessing Vulnerabilities in Emerging-Market Economies” Bank of Canada Staff Discussion Paper 2018-13

Engert, Walter & S. C. Fung, Ben & Hendry, Scott, “Is a Cashless Society Problematic?” Bank of Canada Staff Discussion Paper 2018-12

Cunningham, Rose & Hatzvi, Eden & Mo, Kun, “The Size and Destination of China’s Portfolio Outflows” Bank of Canada Staff Discussion Paper 2018-11

ABSTRACTS

Competing currencies in the laboratory

We investigate competition between two currencies as a result of decentralized interactions between human subjects. We design a

laboratory experiment based on a simple two-country, two-currency search model to study factors that affect circulation patterns and equilibrium selection. Experimental results indicate foreign currency acceptance rates decrease with relative country size but are not significantly affected by the degree of integration. Subjects tend to always accept both currencies even though rejecting either currency is consistent with equilibrium. Introducing government transaction policies biased towards domestic currency significantly reduces the acceptability of foreign currency. These findings suggest government policies can serve as a coordination device when multiple currencies are available.

Non-Performing Loans, Fiscal Costs and Credit Expansion in China

This paper studies how the credit expansion policy pursued by the Chinese government in an effort to stimulate its economy in the post-crisis period affects bank–firm loan contracts and the macroeconomy. We build a structural model with financial frictions in which the optimal loan contract reflects the trade-off between leverage and the probability of default. Credit expansion is introduced in the form of the government's partial guarantee on bank loans to (i) general production firms or (ii) infrastructure producers. We show that in the case of general credit expansion, more persistent credit shocks lead to higher credit multipliers at all horizons, as the benefits of persistently alleviating firms' borrowing constraint outweigh the costs associated with higher non-performing loans. We also show that a more persistent targeted credit expansion raises the production of infrastructure goods. However, higher infrastructure production not only boosts the public capital stock and generates positive externalities, it also crowds out private investment and consumption. With a short-lived targeted credit easing, the expansionary channel of public capital dominates, boosting output. As the credit expansion becomes more persistent, the contractionary channel of lower private investment starts to outweigh the expansionary channel in the medium term.

Evaluating the Bank of Canada Staff Economic Projections Using a New Database of Real-Time Data and Forecasts

We present a novel database of real-time data and forecasts from the Bank of Canada's staff economic projections. We then provide a forecast evaluation for GDP growth and CPI inflation since 1982: we compare the staff forecasts with those from commonly used time-

series models estimated with real-time data and with forecasts from other professional forecasters and provide standard bias tests. Finally, we study changes in the predictability of the Canadian economy following the announcement of the inflation-targeting regime in 1991. Our database is unprecedented outside the United States, and our evidence is particularly interesting, as it includes over 30 years of staff forecasts, two severe recessions and different monetary policy regimes. The database will be made available publicly and updated annually.

Multibank Holding Companies and Bank Stability

This paper studies the relationship between bank holding company affiliation and the individual and systemic risk of banks. Using the 2005 hurricane season in the US as an exogenous shock to bank balance sheets, we show that banks that are part of a holding parent company are more resilient than independent banks. Examining the impact of the liquidity of the holding on resiliency shows that banks are more fragile when the liquidity of the holding is lower, consistent with internal capital markets playing a role in stabilizing banks. We also show that banks whose holdings display low liquidity levels rebalance their portfolios towards riskier activities, such as non-traditional banking activities.

Assessing Vulnerabilities in Emerging-Market Economies

This paper introduces a new tool to monitor economic and financial vulnerabilities in emerging-market economies. We obtain vulnerability indexes for several early warning indicators covering 26 emerging markets from 1990 to 2017 and use them to monitor the evolution of vulnerabilities before, during and after an economic or financial crisis. We find that different historical episodes of crises reflect different vulnerabilities in terms of their composition, buildup and responses. Nevertheless, most currency crises are generally preceded by a buildup of imbalances in the external sector followed by an increase in sovereign debt imbalances. Finally, we assess current EME vulnerabilities in our country sample and visualize them using a heat map.

Is a Cashless Society Problematic?

The use of bank notes in Canada for payments has declined consistently for some time, and similar trends are evident in other countries. This has led some observers to predict a cashless society in the future. This paper considers the implications of the

abandonment of the use of cash in the future. More specifically, we look at a variety of ways in which the emergence of a cashless society could affect key concerns of a central bank, including seigniorage, monetary policy, payments and financial stability considerations. We find that a cashless society would not generally cause material, system-wide problems. There are a few areas, however, where concerns could emerge: the maintenance of both operational reliability and contestability in retail payments, and the provision of a safe store of value in an (extreme) financial crisis. We note policy options to address these potential concerns.

The Size and Destination of China's Portfolio Outflows

The size of China's financial system raises the possibility that the liberalization of its capital account could have a large effect on the global financial system. This paper provides a counterfactual scenario analysis that estimates what the size and direction of China's overseas portfolio investments would have been in 2015 if China had had no restrictions on these outflows. In such a scenario, China's holdings of overseas portfolio assets would have been between US\$1.5 trillion and US\$3.2 trillion (13 to 29 per cent of Chinese GDP), or 5 to 12 times its actual holdings of US\$281 billion. Our model estimates that these additional holdings would have been predominantly directed to the world's deepest financial markets, especially the United States, while emerging-market economies would have received little additional portfolio investment. These results suggest that the liberalization of Chinese portfolio outflows may not prove disruptive to the global financial system, although it could have important implications for China.

UPCOMING EVENTS

2018 Bank of Canada Annual Conference, Inflation Targeting: Revisit!
Revise it?, 1-2 November 2018
Organizer: Oleksiy Kryvtsov (INT)

Bob de Young (Kansas University), 5-6 November 2018
Organizer: Toni Ahnert (FSD)

Joseph Vavra (Chicago Booth), 8 November 2018
Organizer: Xiaqing Zhuo (FSD)

Bank of Canada Conference on Capital Flows in Advanced
Economies: Implications for Financial Stability, 13 November 2018
Organizer: Gabriel Bruneau (FMD), Guillaume Nolin (INT), Gurnain
Pasricha (INT), Barbara Sadaba (INT)

Karlye Dilts Stedman (University of North Carolina at Chapel Hill), 14
November 2018
Organizer: Gabriel Bruneau (FMD)

Mark Spiegel (Federal Reserve Bank of San Francisco), 14
November 2018
Organizer: Gurnain Pasricha (INT)

Albert Queralto (Federal Reserve Board), 16 November 2018
Organizer: Martin Kuncl (CEA)

Jonathan Parker (Massachusetts Institute of Technology), 29
November 2018
Organizer: Miguel Molico (FSD)

Todd Keister (Rutgers University), 3 December 2018
Organizer: Jonathan Chiu (FBD)

Decio Coviello (HEC Montreal), 7 December 2018
Organizer: Youngmin Park (CEA)

Fernanda Nechio (Federal Reserve of San Francisco), 14 December
2018
Organizer: Anthony Landry (CEA)

Alexander Bick (Arizona State University), 1 May 2019
Organizer: Natalia Kyui (CEA)