



BANK OF CANADA
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Bank of Canada Monthly Research Update

February 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

Jin, Haofeng & Lu, Zhentong & Huang, Liqiang & Dou, Junsheng, “Not too much nor too little: Saliency bias in mobile plan choices”, Telecommunications Policy, Vol 45(4): 102071, May 2021

Assenza, Tiziana & Heemeijer, Peter & Hommes, Cars & Massaro, Domenico, “Managing self-organization of expectations through monetary policy: A macro experiment”, Journal of Monetary Economics, Vol 117: 170-186, January 2021

Chen, Hui & Xu, Yu & Yang, Jun, “Systematic risk, debt maturity, and the term structure of credit spreads”, Journal of Financial Economics, Vol 139(3): 770-799, March 2021

Forthcoming

Kosse, Anneke & Lu, Zhentong & Xerri Gabriel, “Predicting Payment Migration in Canada”, Journal of Financial Market Infrastructures

Ichihashi, Shota “Competing Data Intermediaries”, RAND Journal of Economics

Feunou, Bruno & Fontaine, Jean-Sebastien, “Secular Economic Changes and Bond Yields”, Review of Economics and Statistics

Gourinchas, Pierre-Olivier & Kalemli-Özcan, Şebnem & Penciakova, Veronika & Sander, Nick, “COVID-19 and SMEs: A 2021 “Time Bomb”?”, American Economic Review: Papers and Proceedings

STAFF WORKING PAPERS

Felt, Marie-Hélène & Hayashi, Fumiko & Stavins, Joanna & Welte, Angelika, “Distributional Effects of Payment Card Pricing and Merchant Cost Pass-through in Canada and the United States”, Bank of Canada Staff Working Paper 2021-8

Granja, João & Paixao, Nuno, “Market Concentration and Uniform Pricing: Evidence from Bank Mergers”, Bank of Canada Staff Working Paper 2021-9

STAFF DISCUSSION PAPERS

Fontaine, Jean-Sébastien & Garriott, Corey & Johal, Jesse & Lee, Jessica & Uthemann, Andreas, “COVID-19 Crisis: Lessons Learned for Future Policy Research”, Bank of Canada Staff Discussion Paper 2021-2

ABSTRACTS

Not too much nor too little: Salience bias in mobile plan choices

Understanding how consumers make tariff choices is a central issue in telecommunications. The object of the current paper is to investigate whether consumers use a particular heuristic thinking, i.e., salience-based decision making, in mobile plan choices. Using a unique panel data of mobile plan choices from a major telecommunication operator in China, we document evidence that consumer's mobile plan choices are overly influenced by the salience of overusing or underusing the allowance. In particular, we show that given the ex post optimality of the current plan, a consumer tend to switch to plans with larger allowances when overuse the allowance, and switch to plans with smaller allowances when underuse the allowance. We also find that salience-based decision making is a consistent behavior pattern and heterogeneous among consumers. Finally, we show that more experienced consumers are more likely to avoid the upward bias but not the downward bias. Our findings have important managerial implications for managers and policy makers who intend to aid consumers' mobile plan choices through information provision.

Managing self-organization of expectations through monetary policy: A macro experiment

The New Keynesian theory of inflation determination is tested in this paper by means of laboratory experiments. We find that the Taylor principle is a necessary condition to ensure convergence to the inflation target, but it is not sufficient. Using a behavioral model of expectation formation, we show how heterogeneous expectations tend to self-organize on different forecasting strategies depending on monetary policy. Finally, we link the central bank's ability to control inflation to the impact that monetary policy has on the type of feedback –positive or negative– between expectations and realizations of aggregate variables and in turn on the composition of subjects with respect to the type of forecasting rules they use.

Systematic risk, debt maturity, and the term structure of credit spreads

We document several facts about corporate debt maturity: (1) debt maturity is pro-cyclical, (2) higher-beta firms tend to have longer maturity, and (3) shorter maturity amplifies the sensitivity of credit

spreads to aggregate shocks. We present a dynamic capital structure model that explains these facts. In the model, leverage and maturity choices are interdependent, which reflect the tradeoffs of liquidity discounts of long-term debt, repayment risks of short-term debt, and the benefit of short-term debt as a commitment device for timely leverage adjustments. Additionally, the model helps quantify the effects of maturity dynamics on the term structure of credit spreads.

Predicting Payment Migration in Canada

Canada currently has two core payment systems for processing funds transfers between financial institutions: the Large Value Transfer System (LVTS) and the Automated Clearing Settlement System (ACSS). These systems will be replaced over the next years by three new systems: Lynx, the Settlement Optimization Engine (SOE) and the Real-Time Rail (RTR). We employ historical LVTS and ACSS data to predict the demand for the future systems. The results show that small-value LVTS payments will likely migrate to SOE. Also, in the short run, about CAD 10,000 billion of LVTS and ACSS payments (per year) is anticipated to migrate to the RTR if not subject to maximum transaction values. These migration patterns raise important policy questions, such as whether the future systems should be subject to value caps and/or higher collateral requirements.

Competing Data Intermediaries

I study a model of competition between data intermediaries, which collect personal data from consumers and sell them to downstream firms. Competition has a limited impact on benefiting consumers: If intermediaries offer high compensation for data, consumers share data with multiple intermediaries, which lowers the downstream price of data and hurts intermediaries. Anticipating this, intermediaries offer low compensation for data. Although consumers are exclusive suppliers of data, the nonrivalry of data can lead to concentration and high intermediary profits in data markets. In particular, if downstream firms use data to extract surplus from consumers, competing intermediaries sustain a monopoly outcome.

Secular Economic Changes and Bond Yields

We build a model for bond yields based on a small-scale representation of the economy with secular declines of inflation, real rate and output growth. Long-run restrictions identify nominal shocks that influence long-run inflation but do not influence the long-run real rate and output growth. These nominal shocks have loadings that can

change over time. The results show that, before the anchoring of inflation around the mid-1990s, nominal shocks lifted the output gap and inflation leading to higher yields and a steeper yield curve via higher short-rate expectations and the term premium. The short rate peaked after several quarters, only after the responses of growth and inflation started to decline. With inflation anchored, however, nominal shocks have a short-lived impact on inflation, insignificant impact on output and only a small impact on bond yields via the term premium.

COVID-19 and SMEs: A 2021 “Time Bomb”?

This paper assesses the prospects of a 2021 time bomb in SME failures triggered by the generous support policies enacted during the 2020 COVID-19 crisis. Policies implemented in 2020, on their own, do not create a 2021 “time-bomb” for SMEs. Rather, business failures and policy costs remain modest. By contrast, credit contraction poses a significant risk. Such a contraction would disproportionately impact firms that could survive COVID-19 in 2020 without any fiscal support. Even in that scenario, most business failures would not arise from excessively generous 2020 policies, but rather from the contraction of credit to the corporate sector.

Distributional Effects of Payment Card Pricing and Merchant Cost Pass-through in Canada and the United States

Using data from Canada and the United States, we quantify consumers’ net pecuniary cost of using cash, credit cards, and debit cards for purchases across income cohorts. The net cost includes fees paid to financial institutions, rewards received from credit or debit card issuers, and the merchant cost of accepting payments that is passed on to consumers as higher retail prices. Even though credit cards are more expensive for merchants to accept compared with other payment methods, merchants typically do not differentiate prices at checkout, but instead pass through their costs to all consumers. As a result, credit card transactions are cross-subsidized by cheaper debit and cash payments. Card rewards and consumer fees paid to financial institutions are additional sources of cross-subsidies. We find that consumers in the lowest-income cohort pay the highest net pecuniary cost as a percentage of transaction value, while consumers in the highest-income cohort pay the lowest. This result is robust under various scenarios and assumptions, suggesting payment card pricing and merchant cost pass-through have regressive distributional effects in Canada and the United States.

Market Concentration and Uniform Pricing: Evidence from Bank Mergers

We show that U.S. banks price deposits almost uniformly across their branches and that this pricing practice is crucial to explain the deposit rate dynamics following bank mergers. We find a strong and sharp post-merger convergence between the deposit rates of the acquired branches and the median deposit rate of the acquirer. This pattern is almost fully explained by adjustments in the deposit rates of the acquired branches, irrespective of whether their rates were above or below those practiced by the acquirer. Acquired branches lose deposits and local market share, especially when they decrease their rates due to uniform pricing. Local competitors respond to changes in deposit rates at the acquired branches by adjusting their own deposit rates in the same direction. We find that pre-merger differences in deposit rates between merged entities explain more of the post-merger evolution of deposit rates than the predicted changes in local market concentration induced by the merger. This result indicates that competition authorities would be well advised to review the potential impact of premerger pricing differences in evaluating a merger within an industry with strong uniform pricing practices.

COVID-19 Crisis: Lessons Learned for Future Policy Research

Fixed-income markets were disrupted at the beginning of the COVID-19 crisis. As whole industries temporarily shut down, businesses and households ran down their savings or needed credit to survive income losses. As volatility increased, portfolio managers sold securities to manage their leveraged exposures or meet actual and anticipated margin calls and redemption requests. In financial markets, a substantial part of the demand for money came from asset managers. When the dealer arms of commercial banks approached their internal risk limits, the demand for money outpaced their willingness to deal or lend against securities, and trading costs rose in core and peripheral funding markets. The unprecedented scale of interventions by the Bank of Canada and other central banks raises questions that we pose for future policy research. Can central banks' policies and crisis interventions in financial markets better reflect the growing role that asset managers play in the financial system? And can the structure of financial markets be made less reliant on the capacity of banks to supply money?

UPCOMING EVENTS

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

Aaron Hedlund (University of Missouri)
Organizer: FMD / FSD EFR Seminar Series
Date: 4 March 2021

John Grigsby (Northwestern)
Organizer: EFR CEA/INT Speaker Series
Date: 5 March 2021

Jens Christensen (Federal Reserve Bank of San Francisco)
Organizer: FMD / FSD EFR Seminar Series
Date: 11 March 2021

Philipp Schnabl (NYU Stern)
Organizer: FMD / FSD EFR Seminar Series
Date: 18 March 2021

Tomasz Wieladek (T. Rowe Price)
Organizer: EFR CEA/INT Speaker Series
Date: 19 March 2021

Christine Parlour (Berkeley Haas)
Organizer: EFR Core Events
Date: 23 March 2021

Greg Howard (University of Illinois, Urbana-Champaign)
Organizer: FMD / FSD EFR Seminar Series
Date: 25 March 2021

Stefan Avdjiev (BIS)
Organizer: EFR CEA/INT Speaker Series
Date: 26 March 2021

Xavier Vives (IESE Business School)
Organizer: FMD / FSD EFR Seminar Series
Date: 8 April 2021

Dmitry Mukhin (University of Wisconsin)
Organizer: EFR CEA/INT Speaker Series
Date: 9 April 2021

Garth Heutel (Georgia State University)
Organizer: FMD / FSD EFR Seminar Series
Date: 15 April 2021

Ariel Burstein (UCLA)
Organizer: EFR CEA/INT Speaker Series
Date: 16 April 2021

Michael Weber (University of Chicago)
Organizer: EFR CEA/INT Speaker Series
Date: 30 April 2021