BANK OF CANADA
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Bank of Canada Monthly Research Update

September 2017

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

Cao, Shutao & Seki, Mai & Salameh, Mohanad & St-Amant, Pierre "Trend in Firm Entry and New Entrepreneurship in Canada", Canadian Public Policy, September 2017, Volume 43, no. 3

Champagne, Julien & Kurmann, Andre & Stewart, Jay "Reconciling the Divergence in Aggregate U.S. Wage Series.", Labour Economics, December 2017, Volume 47, pages 27-41

Forthcoming

Li, Fuchun & Perez Saiz, Hector, "Measure systemic risk across financial market infrastructure", Journal of Financial Stability

Wataru, Miyamoto & Thuy Lan, Nguyen & Dmitriy, Sergeyev, "Government Spending Multipliers under the Zero Lower Bound: Evidence from Japan", American Economic Journal: Macroeconomics

STAFF WORKING PAPERS

Baumeister, Christiane & Ellwanger, Reinhard & Kilian, Lutz "Did the Renewable Fuel Standard Shift Market Expectations of the Price of Ethanol", Bank of Canada Staff Working Paper 2017-35

Champagne, Julien & Sekkel, Rodrigo "Changes in Monetary Regimes and the Identification of Monetary Policy Shocks: Narrative Evidence from Canada", Bank of Canada Staff Working Paper 2017-39

Desgagnés, Hélène "The Rise of Non-Regulated Financial Intermediaries in the Housing Sector and its Macroeconomic Implications", Bank of Canada Staff Working Paper 2017-36

Ellwanger, Reinhard & Baumeister, Christiane & Kilian, Lutz "Did the Renewable Fuel Standard Shift Market Expectations of the Price of Ethanol?", NBER Working Paper Series No. 23752

Roberts, Tom "A Counterfactual Valuation of the Stock Index as a Predictor of Crashes", Bank of Canada Staff Working Paper 2017-38

Shao, Lin "Aggregate Fluctuations and the Role of Trade Credit", Bank of Canada Staff Working Paper 2017-37

Ellwanger, Reinhard & Baumeister, Christiane & Kilian, Lutz "Did the Renewable Fuel Standard Shift Market Expectations of the Price of Ethanol?", NBER Working Paper Series No. 23752

STAFF DISCUSSION PAPERS

Miller, Sarah & Amirault, David & Martin, Laurent "What's Up with Unit Non-Response in the Bank of Canada's Business Outlook Survey? The Effect of Staff Tenure", Bank of Canada Staff Discussion Paper 2017-11

ABSTRACTS

Trend in Firm Entry and New Entrepreneurship in Canada

Since the early 1980s, the firm entry rate and the rate of new entrepreneurship have trended downward in Canada. This article documents these trends and discusses potential explanations. A shift-share analysis suggests that industrial and demographic structure changes cannot explain these long-term trends, although population aging accounts for part of the decline in new entrepreneurship since around 2000. The article discusses other factors that could contribute to the downward trends: increased industrial concentration, changing labour market conditions, increased college wage premium, higher student debt, and government regulation. Some of these may be important, but more research is needed before firm conclusions can be reached.

Reconciling the Divergence in Aggregate U.S. Wage Series

Average hourly wages from the Labor Productivity and Costs (LPC) program, the Current Population Survey (CPS) and the Current Employment Statistics (CES) have diverged, both in trend and volatility. Supplements and irregular earnings of high-income workers, included in the LPC but not in the two other datasets, have grown more rapidly and have become more volatile, accounting for most of the divergence between LPC and CPS earnings. The more restrictive worker coverage in the CES explains a large part of the divergence between CPS and CES earnings. The results have important implications for the choice of wage series in macroeconomic analysis.

Did the Renewable Fuel Standard Shift Market Expectations of the Price of Ethanol?

It is commonly believed that the response of the price of corn ethanol (and hence of the price of corn) to shifts in biofuel policies operates in part through market expectations and shifts in storage demand, yet to date it has proved difficult to measure these expectations and to empirically evaluate this view. We utilize a recently proposed methodology to estimate the market's expectations of the prices of ethanol, unfinished motor gasoline and crude oil at horizons from three months to one year. We quantify the extent to which price changes were anticipated by the market, the extent to which they were unanticipated, and how the risk premium in these markets has evolved. We show that the Renewable Fuel Standard (RFS) is likely to have increased ethanol price expectations by as much as $1.50 in the year before and in the year after the implementation of the RFS had started. Our analysis of the term structure of expectations supports the view that a shift in ethanol storage demand starting in 2005 caused an increase in the price of ethanol. There is no conclusive evidence that the tightening of the RFS in 2008 shifted market expectations, but our analysis suggests that policy uncertainty about how to deal with the blend wall raised the risk premium in the ethanol futures market in mid-2013 by as much as 50 cents at longer horizons. Finally, we present evidence against a tight link from ethanol price expectations to corn price expectations and hence to storage demand for corn in 2005-06.

Measure systemic risk across financial market infrastructure

We measure systemic risk in the network of financial market infrastructures (FMIs) as the probability that two or more FMIs have a large credit risk exposure to the same FMI participant. We construct indicators of credit risk exposures in three main Canadian FMIs during the period 2007–11 and use extreme value methods to estimate this probability. We find large differences in the contribution to systemic risk across participants. We also find that when participants are in financial distress, they tend to create large credit exposures in two or more FMIs. Our results suggest that an appropriate oversight of FMIs may benefit from an in-depth system-wide analysis, which may have useful implications for the macroprudential regulation of the financial system.

Government Spending Multipliers under the Zero Lower Bound: Evidence from Japan

Using a rich data set on government spending forecasts in Japan, we provide new evidence on the effects of unexpected changes in government spending when the nominal interest rate is near the zero lower bound (ZLB). The on-impact output multiplier is 1.5 in the ZLB period, and 0.6 outside of it. We estimate that government spending shocks increase both private consumption and investment during the ZLB period but crowd them out in the normal period. There is evidence that expected inflation increases by more in the ZLB period than in the normal period.

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Changes in Monetary Regimes and the Identification of Monetary Policy Shocks: Narrative Evidence from Canada

We use narrative evidence along with a novel database of real-time data and forecasts from the Bank of Canada's staff economic projections from 1974 to 2015 to construct a new measure of monetary policy shocks and estimate the effects of monetary policy in Canada. We show that it is crucial to take into account the break in the conduct of monetary policy caused by the announcement of inflation targeting in 1991 when estimating the effects of monetary policy. For instance, we find that a 100-basis-point increase in our new shock series leads to a 1.0 per cent decrease in real GDP and a 0.4 per cent fall in the price level, while not accounting for the break leads to a permanent decrease in real GDP and a price puzzle. Finally, we compare our results with updated narrative evidence for the U.S. and the U.K. and argue that taking into account changes in the conduct of monetary policy in these countries also yields significantly different effects of monetary policy.

The Rise of Non-Regulated Financial Intermediaries in the Housing Sector and its Macroeconomic Implications

I examine the impact of non-regulated lenders in the mortgage market using a dynamic stochastic general equilibrium (DSGE) model. My model features two types of financial intermediaries that differ in three ways: (i) only regulated intermediaries face a capital requirement, (ii) non-regulated intermediaries finance themselves by selling securities and cannot accept deposits, and (iii) non-regulated intermediaries face a more elastic demand. This last assumption is based on empirical evidence for Canada revealing that non-regulated intermediaries issue loans at a lower interest rate. My results suggest that the non-regulated sector contributes to stabilize the economy by providing an alternative source of capital when the regulated sector in unable to fulfill the demand for credit. As a result, an economy with a large non-regulated sector experiences a smaller downturn after an adverse financial shock.

Counterfactual Valuation of the Stock Index as a Predictor of Crashes

Stock market fundamentals would not seem to meaningfully predict returns over a shorter-term horizon—instead, I shift focus to severe downside risk (i.e., crashes). I use the cointegrating relationship between the log S&P Composite Index and log earnings over 1871 to 2015, combined with smoothed earnings, to first construct a counterfactual valuation benchmark. The price-versus-benchmark residual shows an improved, and economically meaningful, logit estimation of the likelihood of a crash over alternatives such as the dividend yield and price momentum. Rolling out-of-sample estimates highlight the challenges in this task. Nevertheless, the overall results support the common popular belief that a higher stock market valuation in relation to fundamentals entails a higher risk of a crash.

Aggregate Fluctuations and the Role of Trade Credit

In an economy where production takes place in multiple stages and is subject to financial frictions, how firms finance intermediate inputs matters for aggregate outcomes. This paper focuses on trade credit—

the lending and borrowing of input goods between firms—and quantifies its aggregate impacts during the Great Recession. Motivated by empirical evidence, our model shows how trade credit alleviates financial frictions through a process of credit redistribution and creation, thus leading to a higher output level in the steady state. However, in the face of financial market distress, suppliers cut back trade credit lending, further tightening their customers' borrowing constraint. The decline in economic activities following financial shocks is in turn amplified by disruptions in trade credit. Our model simulation suggests that the drop in trade credit during the Great Recession can account for almost one-fourth of the observed decline in output.

What's Up with Unit Non-Response in the Bank of Canada's Business Outlook Survey? The Effect of Staff Tenure

Since 1997, the Bank of Canada's regional offices have been conducting the Business Outlook Survey (BOS), a quarterly survey of business conditions. Survey responses are gathered through face-to-face, confidential consultations with a sample of private sector firms representative of the various sectors, firm sizes and regions across Canada. Participation is voluntary and although efforts are made to encourage participation, some firms either do not respond to the Bank's contact attempts or refuse to or cannot participate for various reasons, resulting in unit non-response. Using data for all firms contacted between 2009 and 2016, this paper analyzes the determinants of unit non-response including the impact of the tenure of the Bank's survey booking teams. Difference-in-differences estimates suggest that new survey booking teams increase the probability of unit non-response. Building on previous findings, regression results also provide further support that some firm characteristics are associated with non-response, including firm size, ownership status, sector and participation history. There is little evidence to conclude that the effect linked to new booking teams differs significantly for new versus repeat firms. Finally, we find no statistically significant relationship between firms' credit scores and unit non-response, and no obvious upward trend in the BOS non-response rate once other relevant factors have been taken into account.

UPCOMING EVENTS

Jorge Chan-Lau (IMF), "Financial Networks and Interconnectedness in an Advanced Emerging Market Economy", October 12th 2017
Organizer: Jean-Sebastien Fontaine

Bo Sun (FRB), "Contracting with Feedback", October 12th 2017
Organizer: FMD

Ben Moll (Princeton) "When Inequality Matters for Macro and Macro Matters for Inequality", Oct 13th, 2017. Organizer: Tom Carter

"Bank of Canada Annual Conference", November 16th/ 17th 2017
Organizer: FSD

Omar Rachedi (Banco de España), "TBD", November 24, 2017

Bart Hobijn (Arizona State University), "TBD", December 15, 2017.