BANK OF CANADA
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Bank of Canada Monthly Research Update

October 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

Forthcoming

De Haan, Leo & Van Oordt, Maarten R.C. "Timing of Banks' Loan Loss Provisioning During the Crisis", Journal of Banking & Finance

Radoslav Raykov, "Risk Mutualization and Financial Stability: Recovering and Resolving a CCP", Journal of Financial Market Infrastructures

Van Oordt, Maarten R.C. & Zhou, Chen "Estimating Systematic Risk under Extremely Adverse Market Conditions", Journal of Financial Econometrics

STAFF WORKING PAPERS

Bussière, Matthieu & Gaulier, Guillaume & Steingress, Walter "Global Trade Flows: Revisiting the Exchange Rate Elasticities", Bank of Canada Staff Working Paper 2017-41

Chen, Heng & Dunbar, Geoffrey R. & Shen, Rallye "The Mode is the Message: Using Predata as Exclusion Restrictions to Evaluate Survey Design", Bank of Canada Staff Working Paper 2017-43

Dunbar, Geoffrey R. & Lewbel, Arthur & Pendakur, Krishna "Identification of Random Resource Shares in Collective Households Without Preference Similarity Restrictions", Bank of Canada Staff Working Paper 2017-45

Fontaine, Jean-Sébastien & Nolin, Guillaume "Measuring Limits of Arbitrage in Fixed-Income Markets", Bank of Canada Staff Working Paper 2017-44

Gurnain Pasricha "Policy Rules for Capital Controls", Bank of Canada Staff Working Paper 2017-42

Miyamoto, Wataru & Nguyen, Thuy Lan & Sergeyev, Dmitriy "Government Spending Multipliers Under the Zero Lower Bound: Evidence from Japan", Bank of Canada Staff Working Paper 2017-40

ABSTRACTS

Timing of Banks' Loan Loss Provisioning During the Crisis

We estimate a panel error correction model for loan loss provisions, using unique supervisory data on flow of funds into and out of the allowance for loan losses of 25 Dutch banks in the post-2008 crisis period. We find that these banks aim for an allowance of 49% of impaired loans. In the short run, however, the adjustment of the allowance is only 29% of the change in impaired loans. The deviation from the target is made up by (a) larger additions to allowances in subsequent quarters and (b) smaller reversals of allowances when loan losses do not materialize. After one quarter, the adjustment toward the target level is 32%, and after four quarters it is 79%. For individual banks, there are substantial differences in timing of provisioning for bad loan losses.

Risk Mutualization and Financial Stability: Recovering and Resolving a CCP

Risk mutualization is essential for a central counterparty's ability to survive defaults. This paper investigates how financial market participants respond to risk mutualization implemented by a CCP using assessments after a large credit loss. The model compares two clearing regimes -- with and without an outside clearing option, and investigates two response channels to an assessment: reduced contract size and increased default risk. The analysis shows that (1) Defaults to assessments are more likely when there is an outside option; (2) The strategic default risk channel dominates, while the optimal contract size is unaffected; (3) The likelihood of strategic default increases with the likelihood of an assessment at a rate of at least 1:1; (4) CCPs clearing larger contracts could face greater challenges stabilizing with cash calls. The analysis provides rationale for the existence of CCP resolution regimes and outlines the boundary between recovery and resolution.

Estimating Systematic Risk under Extremely Adverse Market Conditions

This paper considers the problem of estimating a linear model between two heavy-tailed variables if the explanatory variable has an extremely low (or high) value. We propose an estimator for the model coefficient by exploiting the tail dependence between the two variables and prove its asymptotic properties. Simulations show that our estimation method yields a lower mean-squared error than regressions conditional on tail observations. In an empirical

application, we illustrate the better performance of our approach relative to the conditional regression approach in projecting the losses of industry-specific stock portfolios in the event of a market crash.

Global Trade Flows: Revisiting the Exchange Rate Elasticities

This paper contributes to the debate on the magnitude of exchange rate elasticities by providing a set of price and quantity elasticities for 51 advanced and emerging-market economies. Specifically, for each of these countries we report the elasticity of trade prices and trade quantities on both the export and on the import sides, as well as the reaction of the trade balance. To that end, we use a large unified database of highly disaggregated bilateral trade flows, covering 5,000 products and more than 160 trading partners. We present a range of estimates using not only standard regression techniques but also generated regressors that aim to address key omitted variable biases, particularly relating to unobserved marginal costs and competitor prices in the importing market. Our results show that quantity elasticities are significantly below one, pass-through is incomplete and export prices react significantly to exchange rate changes. Despite low quantity elasticities, the trade balance reacts positively to a depreciation in all countries because export and import prices adjust. Overall, our findings suggest that changes in the exchange rate can play an important role in addressing global trade imbalances.

The Mode is the Message: Using Predata as Exclusion Restrictions to Evaluate Survey Design

Changes in survey mode (e.g., online, offline) may influence the values of survey responses, and may be particularly problematic when comparing repeated cross-sectional surveys. This paper identifies mode effects by correcting for both unit non-response and sampling selection using the sample profile data (predata) — the individual’s number of previous survey invitations, the number of completed past surveys, and the reward points balance. The findings show that there is statistically significant evidence of mode effects in recall and subjective questions, but not for factual ones.

Identification of Random Resource Shares in Collective Households Without Preference Similarity Restrictions

Resource shares, defined as the fraction of total household spending going to each person in a household, are important for assessing individual material well-being, inequality and poverty. They are difficult to identify because consumption is measured typically at the household level, and many goods are jointly consumed, so that individual-level consumption in multi-person households is not directly observed. We consider random resource shares, which vary across observationally identical households. We provide theorems that identify the distribution of random resource shares across households, including children's shares. We also provide a new method of identifying the level of fixed or random resource shares that does not require previously needed preference similarity restrictions or marriage market assumptions. Our results can be applied to data with or without price variation. We apply our results to households in Malawi, estimating the distributions of child and female poverty across households.

Measuring Limits of Arbitrage in Fixed-Income Markets

We use relative value to measure limits to arbitrage in fixed-income markets. Relative value captures apparent deviations from no-arbitrage relationships. It is simple, intuitive and can be computed model-free for any bond. A pseudo-trading strategy based on relative value generates higher returns than one based on the well-known noise measure. The relative value is therefore a better proxy for limits to arbitrage. We construct relative value indices for the US, UK, Japan, Germany, Italy, France, Switzerland and Canada. Limits to arbitrage increase with the scarcity of capital: we find that each index is correlated with local volatility and funding costs. Limits to arbitrage also exhibit strong commonality across countries, consistent with the international mobility of capital. The relative value indices are updated regularly and available publicly.

Policy Rules for Capital Controls

This paper attempts to borrow the tradition of estimating policy reaction functions in monetary policy literature and apply it to capital controls policy literature. Using a novel weekly dataset on capital controls policy actions in 21 emerging economies over the period 1 January 2001 to 31 December 2015, I examine the mercantilist and macroprudential motivations for capital control policies. I introduce a new proxy for mercantilist motivations: the weighted appreciation of an emerging-market currency against its top five trade competitors. There is clear evidence that past emerging-market policy systematically responds to both mercantilist and macroprudential motivations. The choice of instruments is also systematic: policy-makers respond to mercantilist concerns by using both instruments — inflow tightening and outflow easing. They use only inflow tightening in response to macroprudential concerns. I also find that policy is acyclical to foreign debt but is countercyclical to domestic bank credit to the private non-financial sector. The adoption of explicit financial stability mandates by central banks or the creation of inter-agency financial stability councils increased the weight of macroprudential factors in the use of capital controls policies. Countries with higher exchange rate pass-through to export prices are more responsive to mercantilist concerns.

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.

UPCOMING EVENTS

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

Dalibor Stevanovic (UQAM), "Macroeconomic forecast accuracy in a data-rich environment", 03 November 2017
Organizer: Tony Chernis (CEA)

Omar Rachedi (Banco de España), 24 November 2017
Organizer : José Dorich (CEA)

Bart Hobijn (Arizona State University), 15 December 2017
Organizer: Julien Champagne (CEA)

Todd Walker (Indiana University Bloomington), 23 March 2018
Organizer: Wataru Miyamoto (CEA)

Giorgio Primiceri (Northwestern University), 20 April 2018
Organizer: Joel Wagner (CEA)

Regis Barnichon (Federal Reserve Bank of San Francisco), 18 May 2018
Organizer: Julien Champagne (CEA)

Fernanda Nechio (Federal Reserve Bank of San Francisco), 25 May 2018
Organizer: Anthony Landry (CEA)