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Monthly Research Update

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

PUBLISHED PAPERS

Forthcoming

Allen, Jason, Evren Damar, and David Martinez-Miera, "Consumer bankruptcy, bank mergers, and soft information", Review of Finance

Bailliu, Jeannine, Cesaire Meh, and Yang Zhang, "Macroprudential Rules and Monetary Policy when Financial Frictions Matter", Economic Modelling

Buyuksahin, Bahattin, Celso Brunetti, and Jeffrey H. Harris, "Speculators, Prices and Market Volatility", Journal of Financial and Quantitative Analysis

Ehrmann, Michael, "Targeting Inflation from Below - How do Inflation Expectations Behave?", International Journal of Central Banking

Ehrmann, Michael, and David-Jan Jansen, "It Hurts (Stock Prices) When Your Team is About to Lose a Soccer Match", Review of Finance

Rempel, Mark, "Improving Overnight Loan Identification in Payment Systems", Journal of Money, Credit, and Banking

Wong, Russell (Tsz-Nga), "A Tractable Monetary Model Under General Preferences", Review of Economic Studies

WORKING PAPERS

Cunado, Juncal, Soojin Jo, and Fernando Perez de Gracia, "Revisiting the Macroeconomic Impact of Oil Shocks in Asian Economies", Bank of Canada Working Paper 2015-23

Dunbar, Geoffrey R., and Chunling Fu, "Sheltered Income: Estimating Income Under-Reporting in Canada, 1998 and 2004", Bank of Canada Working Paper 2015-22

Guérin, Pierre, and Danilo Leiva-Leon, "Model Averaging in Markov-Switching Models: Predicting National Recessions with Regional Data", Bank of Canada Working Paper 2015-24

Imura, Yuko, and Julia Thomas, "International Transmission of Credit Shocks in an Equilibrium Model with Production Heterogeneity", Bank of Canada Working Paper 2015-19

Kozicki, Sharon, Eric Santor, and Lena Suchanek, "Large-Scale Asset Purchases: Impact on Commodity Prices and International Spillover Effects", Bank of Canada Working Paper 2015-21

Li, Fuchun, "Testing for the Diffusion Matrix in a Continuous-Time Markov Process Model with Applications to the Term Structure of Interest Rates", Bank of Canada Working Paper 2015-17

Weber, Warren E., "Government and Private E-Money-Like Systems: Federal Reserve Notes and National Bank Notes", Bank of Canada Working Paper 2015-18

Zhang, Nellie, "Changes in Payment Timing in Canada's Large Value Transfer System", Bank of Canada Working Paper 2015-20

ABSTRACTS

Consumer bankruptcy, bank mergers, and soft information

This paper analyzes the relationship between consumer bankruptcy patterns and the destruction of soft information caused by mergers. Using a major Canadian bank merger as a source of exogenous variation in local banking conditions, we show that local markets affected by the merger exhibit an increase in consumer bankruptcy rates post-merger. The evidence is consistent with the most plausible mechanism being the disruption of consumer-bank relationships. Markets affected by the merger show a decrease in the merging institutions' branch presence and market share, including those stemming from higher switching rates. We rule out alternative mechanisms such as changes in quantity of credit, loan rates, or observable borrower characteristics.

Macroprudential Rules and Monetary Policy when Financial Frictions Matter

This paper examines the interaction between monetary policy and macroprudential rules and whether policy makers should respond to financial imbalances. To address this issue, we build a dynamic general equilibrium model that features financial market frictions and financial shocks as well as standard macroeconomic shocks. We estimate the model using Canadian data. Based on these estimates, we show that it is beneficial to react to financial imbalances. The size of these benefits depends on the nature of the shock where the benefits are larger in the presence of financial shocks that have broader effects on the macroeconomy.

Speculators, Prices and Market Volatility

We employ data over 2005–2009 which uniquely identify categories of traders to test how speculators like hedge funds and swap dealers relate to volatility and price changes. Examining various sub-periods where price trends are strong, we find little evidence that speculators destabilize financial markets. To the contrary, hedge fund position changes are negatively related to volatility in corn, crude oil and natural gas futures markets. Additionally, swap dealer activity is largely unrelated to contemporaneous volatility. Our evidence is consistent with the hypothesis that hedge funds provide valuable liquidity and largely serve to stabilize futures markets.

Targeting Inflation from Below - How do Inflation Expectations Behave?

Inflation targeting (IT) had originally been introduced as a device to bring inflation down and stabilize it at low levels. Given the current environment of persistently weak inflation in many advanced economies, IT central banks must now bring inflation up to target. This paper tests to what extent inflation expectations are anchored in such circumstances, by comparing across periods when inflation is around target, (persistently) high, or (persistently) weak. It finds that under persistently low inflation, inflation expectations are not as well anchored than when inflation is around target: inflation expectations are more dependent on lagged inflation; forecasters tend to disagree more; and inflation expectations get revised down in response to lower-than-expected inflation, but do not respond to higher-than-expected inflation. This suggests that central banks should expect inflation expectations to behave differently than was the case previously, when inflation was often remarkably close to target in many advanced economies.

It Hurts (Stock Prices) When Your Team is About to Lose a Soccer Match

The end result of major sporting events has been shown to affect next-day stock returns through shifts in investor mood. By studying intraday data during the soccer matches that led to the elimination of France and Italy from the 2010 FIFAWorld Cup, we test whether mood-related pricing effects already materialize as events unfold. We use data for a cross-listed firm, which allows for a straightforward identification of underpricing. During the matches, the firm's stock is underpriced by up to 7 basis points in the country that eventually loses. The probability of underpricing increases as elimination becomes more likely.

Improving Overnight Loan Identification in Payment Systems

Within the Canadian context, I assess the quality of information available to central banks on the interbank overnight market without the reliance of surveys (and other related sources). I propose methods involving machine-learning which reduces the margin of error of this alternative data source to a level that may render the data useful for both historical analysis and policy-making.

A Tractable Monetary Model Under General Preferences

The end result of major sporting events has been shown to affect This paper studies an economy with both centralised and decentralised monetary exchanges under search frictions. A degenerate asset distribution is featured under a broad class of preferences including, for example, constant return to scale, constant elasticity of substitution, CARA and others from a range of macroeconomic literatures. Some novel applications impossible under quasi-linear preferences, for example endogenous growth, are illustrated under this class of preferences. This paper finds that the welfare cost and growth loss of inflation can be much higher in these applications than previous estimates.

Revisiting the Macroeconomic Impact of Oil Shocks in Asian Economies

This paper analyzes the macroeconomic impact of oil shocks in four of the largest oil-consuming Asian economies, using a structural vector autoregressive model. We identify three different types of oil shocks via sign restrictions: an oil supply shock, an oil demand shock driven by global economic activity and an oil-specific demand shock. The main results suggest that economic activity and prices respond very differently to oil price shocks depending on their type. In addition, a country’s oil-importing and -exporting status in the world oil market affects the transmission of shocks. Finally, subsample analysis shows a possible structural break in Japan and South Korea for all three types of oil shocks.

Sheltered Income: Estimating Income Under-Reporting in Canada, 1998 and 2004

We use data from the Survey of Financial Security and the Survey of Household Spending to estimate the incidence and extent of income under-reporting in Canada in 1998 and 2004. We estimate that the proportion of households under-reporting income is roughly 35 to 50 per cent in both years. Our estimates also suggest that the amount of under-reported income rose by roughly 40 per cent between 1998 and 2004 and remained stable as a proportion of GDP of 14 to 19 per cent. We find evidence that income underreporting is pervasive and is not confined to households that report self-employment income in the survey data. We also find that poverty measures that rely on reported income appear unreliable because under-reporting necessarily implies a lower reported income. Thus, households that under-report appear to be poorer. We propose a simple ratio method of identifying households that under-report income using the household's budget share on shelter.

Model Averaging in Markov-Switching Models: Predicting National Recessions with Regional Data

This paper introduces new weighting schemes for model averaging when one is interested in combining discrete forecasts from competing Markov-switching models. In particular, we extend two existing classes of combination schemes – Bayesian (static) model averaging and dynamic model averaging – so as to explicitly reflect the objective of forecasting a discrete outcome. Both simulation and empirical exercises show that our new combination schemes outperform competing combination schemes in terms of forecasting accuracy. In the empirical application, we estimate and forecast U.S. business cycle turning points with state-level employment data. We find that forecasts obtained with our best combination scheme provide timely updates of the U.S. business cycles.

International Transmission of Credit Shocks in an Equilibrium Model with Production Heterogeneity

Many policy-makers and researchers view the recent financial and real economic crises across North America, Europe and beyond as a global phenomenon. Some have argued that this global recession has a common source: the U.S. financial crisis. This paper investigates the extent to which a credit shock in one country is transmitted to its trade partners. To this end, we develop a quantitative two-country dynamic stochastic general equilibrium model wherein intermediate-good producers face persistent idiosyncratic productivity shocks and occasionally binding collateralized borrowing constraints for investment loans.

We find that a negative credit shock to one country induces a sharp contraction in that country's economy, whereas the resulting recession in the economy of its trading partner is quantitatively minor. Transmission through goods trade is limited by the calibrated average trade share, which we find insufficient to deliver a sizable recession abroad. The degree of credit-shock transmission depends on the home bias in international trade and the type of goods countries trade with each other. We show that lower home bias dampens the domestic recession following a credit shock, but it amplifies international transmission. Similarly, when traded goods are less substitutable, the domestic recession is less severe, while real consequences abroad are greater. Our model also predicts that credit shocks cause larger declines in international trade than do productivity shocks. These results shed light on the great trade collapse over 2008-09, suggesting that tightened financial constraints may have been a contributing factor.

Large-Scale Asset Purchases: Impact on Commodity Prices and International Spillover Effects

Prices of commodities, including metals, energy and agricultural products, rose markedly over the 2009–2010 period. Some observers have attributed a significant part of this increase in commodity prices to the U.S. Federal Reserve's large-scale asset purchase (LSAP) programs. Using event-study methodologies, this paper investigates whether the announcement and subsequent implementation of the Fed's LSAPs, and communication of the tapering of these purchases, affected commodity prices. Our empirical results suggest that LSAP announcements did not lead to higher commodity prices. However, there is some evidence that the currencies of commodity exporters appreciated and that their stock markets posted gains. The results suggest that other factors, such as supply constraints and robust demand from emerging-market economies, were the likely drivers behind the increase in commodity prices. Last, the paper finds that commodity prices have become more sensitive to macroeconomic news when monetary policy is at the effective lower bound.

Testing for the Diffusion Matrix in a Continuous-Time Markov Process Model with Applications to the Term Structure of Interest Rates

The author proposes a test for the parametric specification of each component in the diffusion matrix of a d-dimensional diffusion process. Overall, d (d-1)/2 test statistics are constructed for the offdiagonal components, while d test statistics are constructed for the main diagonal components. Using theories of degenerate U-statistics, each of these test statistics is shown to follow an asymptotic standard normal distribution under null hypothesis, while diverging to infinity if the component is misspecified over a significant range. Our tests strongly reject the specification of diffusion functions in a variety of popular univariate interest rate models for daily 7-day eurodollar spot rates, and the specification of the diffusion matrix in some popular multivariate affine term-structure models for monthly U.S. Treasury yields.

Government and Private E-Money-Like Systems: Federal Reserve Notes and National Bank Notes

The period from 1914 to 1935 in the United States is unique in that it was the only time that both privately-issued bank notes (national bank notes) and central bank-issued bank notes (Federal Reserve notes) were simultaneously in circulation. This paper describes some lessons relevant to e-money from the U.S. experience during this period. It argues that Federal Reserve notes were not issued to be a superior currency to national bank notes. Rather, they were issued to enable the Federal Reserve System to act as a lender of last resort in times of financial stress. It also argues that the reason to eventually eliminate national bank notes was that they were potentially a source of bank reserves. As such, they could have threatened the Federal Reserve System’s control of the reserves of the banking system and thereby the Fed’s control of monetary policy.

Changes in Payment Timing in Canada’s Large Value Transfer System

This paper uncovers trends in payment timing in Canada’s Large Value Transfer System (LVTS) from 2003 to 2011. Descriptive analysis shows that LVTS payment activity has not been peaking in the late afternoon since 2008, and the improvement was most significant in 2009. Ordinary least squares regressions are conducted to identify various factors that might have contributed to the changes in the payment value time distribution. The main findings include that a larger proportion of high-value payments results in later payment submission and hence settlement; as an important source of intraday liquidity, a higher CDSX payout value tends to speed up LVTS transactions. Several changes in the system parameters—such as increases in the frequencies of the Jumbo algorithm and Jumbo queue expiry—also quickened the settlement. In addition, the results suggest that the temporary exceptional liquidity initiatives introduced in late 2008 and a large increase in settlement balances were major contributors to the earlier settlement of LVTS payments.