Bank of Canada
Monthly Research Update

August 2014

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

In Press

Jiang, George J. and Ingrid Lo, "Private Information Flow and Price Discovery in the U.S. Treasury Market", Journal of Banking and Finance, vol. 47 (October 2014), p. 118-133

Forthcoming

Baumeister, Christiane, Lutz Kilian and Thomas K. Lee, "Are There Gains from Pooling Real-Time Oil Price Forecasts?", Energy Economics

Christensen, Ian and Fuchun Li, "Predicting Financial Stress Events: A Signal Extraction Approach", Journal of Financial Stability

Courty, Pascal and John Sim, "Retention of Talented Academic Researchers: Evidence from a Government Intervention", Canadian Journal of Economics

Sierra, Jesus, "International Capital Flows and Bond Risk Premia", Quarterly Journal of Finance

WORKING PAPERS

Alquist, Ron and Olivier Coibion, "Commodity Price Co-Movement and Global Economic Activity", Bank of Canada Working Paper 2014-32

Altug, Sumru and Serdar Kabaca, "Search Frictions, Financial Frictions and Labour Market Fluctuations in Emerging Markets", Bank of Canada Working Paper 2014-35

Friedrich, Christian, "Global Inflation Dynamics in the Post-Crisis Period: What Explains the Twin Puzzle?", Bank of Canada Working Paper 2014-36

Gandal, Neil and Hanna Halaburda, "Competition in the Cryptocurrency Market", Bank of Canada Working Paper 2014-33

Gnocchi, Stefano, Daniela Hauser and Evi Pappa, "Housework and Fiscal Expansions", Bank of Canada Working Paper 2014-34

ABSTRACTS

Private Information Flow and Price Discovery in the U.S. Treasury Market

Using intraday data, we identify the intensity of private information flow in the U.S. Treasury market. Our results show that the intensity of private information flow is highly correlated with public information shock and higher for longer maturity bonds. More importantly, we find that bond price changes associated with high intensity of private information flow tend to be persistent, whereas those associated with low intensity of private information flow are more likely reversed. While public information and private information are the main determinants of bond price variations on days with pre-scheduled news announcements, private information and

liquidity shocks are important determinants of bond price variations on days with no significant economic events. Finally, we show that the intensity of private information flow is inversely related to the depth of limit order book. Nevertheless, informed dealers do not seem to use hidden orders to disguise their trading intentions.

Are There Gains from Pooling Real-Time Oil Price Forecasts? 📄

The answer depends on the objective. The approach of combining five of the leading forecasting models with equal weights dominates the strategy of selecting one model and using it for all horizons up to two years. Even more accurate forecasts, however, are obtained when allowing the forecast combinations to vary across forecast horizons. While the latter approach is not always more accurate than selecting the single most accurate forecasting model by horizon, its accuracy can be shown to be much more stable over time. The MSPE of real-time pooled forecasts is between 3% and 29% lower than that of the no-change forecast and its directional accuracy as high as 73%. Our results are robust to alternative oil price measures and apply to monthly as well as quarterly forecasts. We illustrate how forecast pooling may be used to produce real-time forecasts of the real and the nominal price of oil in a format consistent with that employed by the U.S. Energy Information Administration in releasing its short-term oil price forecasts, and we compare these forecasts during key historical episodes.

Predicting Financial Stress Events: A Signal Extraction Approach 📄

The objective of this paper is to propose an early warning system that can predict the likelihood of occurrence of a financial stress event. To achieve this goal, the signal extraction approach proposed by Kaminsky, Lizondo and Reinhart (1998) is used to monitor the evolution of a number of economic indicators that tend to exhibit an unusual behavior in the periods preceding a financial stress event. Based on the individual indicators, we propose three different composite indicators, the summed composite indicator, the extreme composite indicator, and the weighted composite indicator. In-sample forecasting results indicate that the three composite indicators are useful tools for predicting financial stress events, while none of them outperforms others across all criteria considered. The out-of-sample forecasting results suggest that for most of countries including Canada, the weighted composite indicator has better performance than the two others across all criteria considered.

Retention of Talented Academic Researchers: Evidence from a Government Intervention 📄

The Canada Research Chairs (CRC) program is designed primarily to retain academic talent in Canadian universities by providing targeted grants to outstanding researchers. Once awarded a Chair at her home university, a researcher's compensation increases by 6.3 percent on average, with a significant decline over CRC tenure. Furthermore, the chance of the researcher changing jobs does not decrease. Although universities report spending more than half of the grant on compensation, only a small portion of the grant can be accounted for as a compensation increase. This demonstrates the difficulty in designing government interventions to have an impact on academic retention.

International Capital Flows and Bond Risk Premia

We investigate whether foreign purchases of long-term U.S. Treasury securities significantly affect their expected excess-returns. We run predictive regressions of realized excess returns on measures of net purchases of treasuries by both foreign official and private agents. We find that official flows, with a negative effect, appear similar to relative supply shocks; private flows, with a positive impact, resemble flows that absorb excess-supply and are thus compensated for this service, similar to the role of arbitrageurs. The results are robust to out-of-sample tests and the use of benchmark survey-consistent adjusted flows data.

Commodity Price Co-Movement and Global Economic Activity

Guided by a macroeconomic model in which non-energy commodity prices are endogenously determined, we apply a new factor-based identification strategy to decompose the historical sources of changes in commodity prices and global economic activity. The model yields a factor structure for commodity prices and identification conditions that provide the factors with an economic interpretation: one factor captures the combined contribution of shocks that affect commodity markets only through general-equilibrium forces. Applied to a cross-section of commodity prices since 1968, the theoretical restrictions are consistent with the data and yield structural interpretations of the common factors in commodity prices. Commodity-related shocks have contributed modestly to global economic fluctuations.

Search Frictions, Financial Frictions and Labour Market Fluctuations in Emerging Markets

This paper examines the role of the extensive and intensive margins of labour input in the context of a business cycle model with a financial friction. We document significant variation in the hours worked per worker for many emerging-market economies. Both employment and hours worked per worker are positively correlated with each other and with output. We show that a search-theoretic context in a small open-economy model requires a small income effect to explain these regularities at the expense of a smaller wage response. On the other hand, introducing a financial friction in the form of a working capital requirement can explain the observed movements of labour market variables such as employment and hours worked per worker, as well as other distinguishable business cycle characteristics of emerging economies. These include highly volatile and cyclical real wages, labour share, and consumption.

Global Inflation Dynamics in the Post-Crisis Period: What Explains the Twin Puzzle?

Inflation dynamics in advanced countries have produced two consecutive puzzles during the years after the global financial crisis. The first puzzle emerged when inflation rates over the period 2009-11 were consistently higher than expected, although economic slack in advanced countries reached its highest level in recent history. The second puzzle—still present today—was initially observed in 2012, when inflation rates in advanced countries were weakening rapidly despite the ongoing economic recovery. This paper specifies a global Phillips curve for headline inflation using inflation expectations by professional forecasters and a measure of economic slack at the global level over the period 1995Q1-2013Q3. Phillips curve data points

in the period after the global financial crisis show a significantly different but consistent pattern compared to data points in the period before or during the crisis. In the next step, potential explanatory variables at the global level are assessed regarding their ability to improve the in-sample fit of the global Phillips curve. The analysis yields three main findings. First, the standard determinants can still explain a sizable share of global inflation dynamics. Second, household inflation expectations are an important addition to the global Phillips curve. And third, the fiscal policy stance helps explain global inflation dynamics. When taking all three findings into account, it is possible to closely replicate global inflation dynamics over the post-crisis period.

Competition in the Cryptocurrency Market

We analyze how network effects affect competition in the nascent cryptocurrency market. We do so by examining the changes over time in exchange rate data among cryptocurrencies. Specifically, we look at two aspects: (1) competition among different currencies, and (2) competition among exchanges where those currencies are traded. Our data suggest that the winner-take-all effect is dominant early in the market. During this period, when Bitcoin becomes more valuable against the U.S. dollar, it also becomes more valuable against other cryptocurrencies. This trend is reversed in the later period. The data in the later period are consistent with the use of cryptocurrencies as financial assets (popularized by Bitcoin), and not consistent with "winner-take-all" dynamics. For exchanges, we find little if any evidence of arbitrage opportunities. With no arbitrage opportunities, it is possible for multiple exchanges to coexist in equilibrium despite two-sided network effects.

Housework and Fiscal Expansions

We build an otherwise-standard business cycle model with housework, calibrated consistently with data on time use, in order to discipline con-sumption-hours complementarity and relate its strength to the size of fiscal multipliers. We show that if substitutability between home and market goods is calibrated on the empirically relevant range, consumption-hours comple-mentarity is large and the model generates fiscal multipliers that agree with the evidence. Hence, our analysis supports the relevance of consumption-hours complementarity for fiscal multipliers. However, we also find that explicitly modeling the home sector is more appealing than restricting to the consumption-leisure margin and/or to the preferences proposed by Greenwood, Hercowitz and Huffman (1988). A housework model can imply substantial complementarity, without low wealth effects contradicting the microeconomic evidence.