BANK OF CANADA
BANQUE DU CANADA

Bank of Canada
Monthly Research Update

May 2013

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

Bi, Huixin, Eric Leeper, and Campell Leith, "Uncertain Fiscal Consolidations", Economic Journal, Volume 123, Issue 566, Pages 31-63, February 2013

Jiang, Janet (Hua), Jasmina Arifovic ,and Yiping Xu, "Experimental Evidence of Bank Runs as Pure Coordination Failures", Journal of Economic Dynamics and Control

Owyang, Michael, Valerie Ramey, and Sarah Zubairy, "Are Government Spending Multipliers Greater during Periods of Slack? Evidence from Twentieth-Century Historical Data", American Economic Review, Papers & Proceedings, Volume 103, Issue 3, Pages 129-134, 2013

Wei, Dong, "Do Central Banks Respond to Exchange Rate Movements? Some New Evidence from Structural Estimation", Canadian Journal of Economics, Volume 46, Issue 2, Pages 555-586, May 2013

Forthcoming

WORKING PAPERS

Arifovi, Jasmina, George Evans and Olena Kostyshyna, "Are Sunspots Learnable? An Experimental Investigation in a Simple General-Equilibrium Model", Bank of Canada Working Paper 2013-14

Baumeister, Christiane Baumeister and Lutz Kilian, "What Central Bankers Need to Know about Forecasting Oil Prices", Bank of Canada Working Paper 2013-15

Christensen, Ian and Fuchun Li, "A Semiparametric Early Warning Model of Financial Stress Events", Bank of Canada Working Paper 2013-13

Gungor, Sermin Gungor and Richard Luger, "Multivariate Tests of Mean-Variance Efficiency and Spanning with a Large Number of Assets and Time-Varying Covariances", Bank of Canada Working Paper 2013-16

ONLINE PUBLICATIONS

Aizenman, Joshua and Gurnain Kaur Pasricha, "Why do emerging markets liberalise capital-outflow controls? Fiscal versus net capital flow concerns", VoxEU.org , May 2, 2013

ABSTRACTS

Uncertain Fiscal Consolidations

This article explores the macroeconomic consequences of fiscal consolidations whose timing and composition – either tax–or spending– based – are uncertain. We find that the composition of the fiscal consolidation, its duration, the monetary policy stance, the level of government debt, and expectations over the likelihood and composition of fiscal consolidations all matter in determining the extent to which a given consolidation is expansionary or successful in stabilising government debt. We argue that the conditions that could render fiscal consolidation efforts expansionary are unlikely to apply in the current economic environment.

Experimental Evidence of Bank Runs as Pure Coordination Failures

This paper investigates how the level of coordination requirement, measured by a coordination parameter, affects the occurrence of bank runs as a result of pure coordination failure in controlled laboratory environments. We find that the economy stays close or converges to the run (non-run) equilibrium for high (low) levels of coordination requirement. In addition, there is an indeterminacy region of the coordination parameter such that games with the coordination parameter lying in that region have varying coordination outcomes and exhibit persistent path dependence. We also .nd that the experimental economy may switch between the run and non-run equilibria even if the economic fundamentals are kept constant. Finally, we show that the behavior of human subjects observed in the laboratory can be well accounted for by a version of the evolutionary algorithm that uses experimentation rates estimated from the experimental data.

Are Government Spending Multipliers Greater during Periods of Slack? Evidence from Twentieth-Century Historical Data

A key question that has arisen during recent debates is whether government spending multipliers are larger during times when resources are idle. This paper seeks to shed light on this question by analyzing new quarterly historical data covering multiple large wars and depressions in the United States and Canada. Using Jorda's (2005) method for estimating impulse responses, we find no evidence

that multipliers are greater during periods of high unemployment in the United States. In every case, they are below unity. We do find evidence of higher multipliers during periods of slack in Canada, with some multipliers above unity.

Do Central Banks Respond to Exchange Rate Movements? Some New Evidence from Structural Estimation

This paper investigates the impact of exchange rate movements on the conduct of monetary policy in Australia, Canada, New Zealand, and the United Kingdom. We develop and estimate a structural general equilibrium model, in which monetary policy is represented as a simple rule and exchange rate pass-through is incomplete due to the presence of local currency pricing and distribution services. We find that the Bank of Canada, the Reserve Bank of New Zealand, and the Bank of England have not adjusted interest rates in response to exchange rate movements since the adoption of inflation targeting, while our model selection results for Australia are less clear.

Are Sunspots Learnable? An Experimental Investigation in a Simple General-Equilibrium Model

We conduct experiments with human subjects in a model with a positive production externality in which productivity is a non-decreasing function of the average level of employment of other firms. The model has three steady states: the low and high steady states are expectationally stable (E-stable), and thus locally stable under learning, while the middle steady state is not E-stable. There also exists a locally E-stable sunspot equilibrium that fluctuates between the high and low steady states. Steady states are payoff ranked: low values give lower profits than higher values. We investigate whether subjects in our experimental economies can learn a sunspot equilibrium. Our experimental design has two treatments: one in which payoff is based on the firm's profits, and the other in which payoff is based on the forecast squared error. We observe coordination on the extrinsic announcements in both treatments. In the treatments with forecast squared error, the average employment and average forecasts of subjects are closer to the equilibrium corresponding to the announcement. Cases of apparent convergence to the low and high steady states are also observed.

What Central Bankers Need to Know about Forecasting Oil Prices

Forecasts of the quarterly real price of oil are routinely used by international organizations and central banks worldwide in assessing the global and domestic economic outlook, yet little is known about how best to generate such forecasts. Our analysis breaks new ground in several dimensions. First, we address a number of econometric and data issues specific to real-time forecasts of quarterly oil prices. Second, we develop real-time forecasting models not only for U.S. benchmarks such as West Texas Intermediate crude oil, but we also develop forecasting models for the price of Brent crude oil, which has become increasingly accepted as the best measure of the global price of oil in recent years. Third, we design for the first time methods for forecasting the real price of oil in foreign consumption units rather than U.S. consumption units, taking the point of view of forecasters outside the United States. In addition, we investigate the costs and benefits of allowing for time variation in vector autoregressive (VAR) model parameters and of constructing forecast combinations. We conclude that quarterly forecasts of the real price of oil from suitably designed VAR models estimated on monthly data generate the most accurate forecasts among a wide range of methods including forecasts based on oil futures prices, no-change forecasts and forecasts based on regression models estimated on quarterly data.

A Semiparametric Early Warning Model of Financial Stress Events

The authors use the Financial Stress Index created by the International Monetary Fund to predict the likelihood of financial stress events for five developed countries: Canada, France, Germany, the United Kingdom and the United States. They use a semiparametric panel data model with nonparametric specification of the link functions and linear index function. The empirical results show that the semiparametric early warning model captures some well-known financial stress events. For Canada, Germany, the United Kingdom and the United States, the semiparametric model can provide much better out-of-sample predicted probabilities than the logit model for the time period from 2007Q2 to 2010Q2, while for France, the logit model provides better performance for non-financial stress events than the semiparametric model.

Multivariate Tests of Mean-Variance Efficiency and Spanning with a Large Number of Assets and Time-Varying Covariances

We develop a finite-sample procedure to test for mean-variance efficiency and spanning without imposing any parametric assumptions on the distribution of model disturbances. In so doing, we provide an exact distribution-free method to test uniform linear restrictions in multivariate linear regression models. The framework allows for unknown forms of non-normalities, and time-varying conditional variances and covariances among the model disturbances. We derive exact bounds on the null distribution of joint F statistics in order to deal with the presence of nuisance parameters, and we show how to implement the resulting generalized non-parametric bounds tests with Monte Carlo resampling techniques. In sharp contrast to the usual tests that are not computable when the number of test assets is too large, the power of the new test procedure potentially increases along both the time and cross-sectional dimensions