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Bank of Canada 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

In Press

Chapman, James, Jonathan Chiu, and Miguel Molico, "A Model of Tiered Settlement Networks", Journal of Money, Credit and Banking, Volume 45, Issue 2-3, pages 327–347, March-April 2013

De Munnik, Daniel, Mark Illing, and David Dupuis, "Assessing the accuracy of non-random business conditions surveys: a novel approach", Journal of the Royal Statistical Society: Series A (Statistics in Society), Volume 176, Issue 2, pages 371–388, February 2013

Dong, Wei, "The Quantitative Importance of the Expenditure-Switching Effect", Open Economies Review, Volume 24, Issue 2, Pages 311-338, April 2013

Dong, Wei and Deokwoo Nam, "Exchange Rates and Individual Good's Price Misalignment: Evidence of Long-horizon Predictability", Journal of International Money and Finance, Volume 32, pages 611-636, February 2013

Xu, TengTeng, Ambrogio Cesa-Bianchi, M. Hashem Pesaran, and Alessandro Rebucci, "China's Emergence in the World Economy and Business Cycles in Latin America", GVAR Handbook, Oxford University Press

Forthcoming

Dyck, Alexander, Karl Lins, and Lukasz Pomorski, "Does Active Management Pay? New International Evidence", Review of Asset Pricing Studies

Owyang, T. Michael and Sarah Zubairy, "Who Benefits from increased Government Spending? A State-Level Analysis", Regional Science and Urban Economics

Sekhposyan, Tatevik and Barbara Rossi, "Evaluating Predictive Densities of U.S. Output Growth and Inflation in a Large Macroeconomic Data Set", International Journal of Forecasting

Zubairy, Sarah, "On Fiscal Multipliers: Estimates from a Medium Scale DSGE Model", International Economic Review

WORKING PAPERS

Anderson, Stacey, Jean-Philippe Dion, and Héctor Pérez Saiz, "To link or Not To Link? Netting and Exposures Between Central Counterparties", Bank of Canada Working Paper 2013-6

Djoudad, Ramdane and Étienne Bordeleau, "Méthodologie de construction de séries de taux de défaut pour l'industrie canadienne", Bank of Canada Discussion Paper 2013-2

Hong, Gee Hee and Nicholas Li, "Market Structure and Cost Pass-Through in Retail", Bank of Canada Working Paper 2013-5

Siegel, Jordan, Naomi Kodama, and Hanna Halaburda, "The Unfairness Trap: A Key Missing Factor in the Economic Theory of Discrimination", Harvard Business School Working Paper 13-082

Wong, Tsz-Nga, "A Tractable Monetary Model Under General Preferences", Bank of Canada Working Paper 2013-7

ABSTRACTS

A Model of Tiered Settlement Networks

Payment and settlement networks typically involve various tiers of intermediation. This paper develops a model of settlement system to study the endogenous structure of tiered settlement networks, and the welfare consequences of clearing agent (CA) failure. We offer two explanations for tiering: private information regarding participant's credit worthiness and economies of scale in the participation in the settlement system. CAs play a monitoring and cost-saving role in the settlement network. As a result, a failure of a CA can lead to a large and persistent welfare loss to the economy.

Assessing the accuracy of non-random business conditions surveys: a novel approach

A number of central banks and other institutions publish their own business conditions surveys that rely on complex non-probability sampling methods. The results of these surveys influence policy decisions and affect expectations in financial markets. To date, no one has assessed the accuracy of these surveys because their complex (and often unique) sampling method renders this assessment non-trivial. The paper describes a novel approach for modelling unique sampling methods when many constraints (including quota sampling and clustering) are imposed. When no closed form solution exists, we show how to compute the selection probabilities from each firm in the known population and the dispersion of the sampling distribution by using Monte Carlo techniques. This method can also be used to assess the appropriateness of a survey sample size. Our approach is applicable to many major surveys conducted by various central banks and

institutes across the Organisation for Economic Co-operation and Development. To demonstrate the feasibility of our approach, we apply it to the Bank of Canada's ‘Business outlook survey’. Although the survey's coverage is significantly limited, we find, under certain assumptions, no evidence that the Bank of Canada's firm selection process results in a wider dispersion in the sampling distribution than the stratified random sample.

The Quantitative Importance of the Expenditure-Switching Effect

This paper investigates the quantitative importance of the expenditure-switching effect in three small open economies: Australia, Canada and the UK, by developing and estimating a structural sticky-price model nesting both producer currency pricing (PCP) and local currency pricing (LCP) settings. The size of the expenditure-switching effect is determined by the degree of price stickiness, the fraction of firms employing PCP versus LCP, the distribution margin, and the elasticity of substitution between domestic and foreign goods. Our estimation results suggest that the expenditure switching role of the nominal exchange rate is larger for Australia and Canada than for the UK, mainly due to the relatively smaller distribution margins in those two countries.

Exchange Rates and Individual Good's Price Misalignment: Evidence of Long-horizon Predictability

Although purchasing-power-parity fundamentals, in general, have only weak predictability, currency misalignment may be indicated by price differentials for some individual goods, which could then have predictive power for subsequent re-evaluation of the nominal exchange rate. We collect good-level price data to construct deviations from the law of one price and examine the resulting price- misalignment model's predictive power for the nominal exchange rates between the U.S. dollar and two other currencies: the Japanese yen and the U.K. pound. We find that the slope coefficients and R- squares of in-sample forecasting regressions for almost all goods in our data increase with the forecast horizon for the bilateral exchange rates between the U.S. dollar and the Japanese yen and the U.S. dollar and the U.K. pound. The results of tests for out-of-sample superior predictive ability suggest that our price-misalignment model outperforms a random walk model either with or without drift for the U.S. dollar vis-à-vis the Japanese yen at the 5 percent level of significance over long horizons.

China's Emergence in the World Economy and Business Cycles in Latin America

This paper investigates how changes in trade linkages between China, Latin America, and the rest of the world have altered the transmission mechanism of international business cycles to Latin America. Evidence based on a Global Vector Autoregressive (GVAR) model for 5 large Latin American economies and all major advanced and emerging economies of the world shows that the long-term impact of a China GDP shock on the typical Latin American economy has increased by three times since mid-1990s. At the same time, the long-term impact of a US GDP shock has halved, while the transmission of shocks from Latin America and the rest of emerging Asia (excluding China and India) GDP has not undergone any significant change. Contrary to common wisdom, we find that these changes owe more to the changed impact of China on Latin America's traditional and largest trading partners than to increased direct bilateral trade linkages boosted by the decade-long commodity price boom. These findings help to explain why Latin America did so well during the global crisis, but point to the risks associated with a deceleration in China's economic growth in the future for both Latin America and the rest of the world economy. The evidence reported also suggests that the emergence of China as an important source of world growth might be the driver of the so called "decoupling" of emerging markets business cycle from that of advanced economies reported in the existing literature.

Does Active Management Pay? New International Evidence

For sophisticated institutional investors, active management outperforms passive management by more than 180 basis points per year in emerging markets and by about 50 basis points in EAFE markets over the 1993-2008 period. In US markets, active management underperforms. Consistent with these patterns in returns, institutions use active management more frequently in non-US markets, particularly emerging markets. Finally, we provide some evidence that one contributor to the active outperformance is institutional constraints on flows to non-US markets. Overall, our results suggest that the value of active management depends on the efficiency of the underlying market and the sophistication of the investor.

Who Benefits from increased Government Spending? A State-Level Analysis

We simultaneously identify two government spending shocks: military spending shocks as defined by Ramey (2011) and federal spending shocks as defined by Perotti (2008). We analyze the effect of these shocks on state-level personal income and employment. We find regional patterns in the manner in which both shocks affect state level variables. Moreover, we find differences in the propagation mechanisms for military versus non-military spending shock. The former benefits economies with larger manufacturing and retail sectors and states that receive military contracts. While non-military shocks also benefit states with the proper industrial mix, they appear to stimulate economic activity in lower-income states.

Evaluating Predictive Densities of U.S. Output Growth and Inflation in a Large Macroeconomic Data Set

We evaluate conditional predictive densities for U.S. output growth and inflation using a number of commonly used forecasting models that rely on a large number of macroeconomic predictors. More specifically, we evaluate how well conditional predictive densities based on the commonly used normality assumption fit actual realizations out-of-sample. Our focus on predictive densities acknowledges the possibility that, although some predictors can improve or deteriorate point forecasts, they might have the opposite effect on higher moments. We find that normality is rejected for most models in some dimension according to at least one of the tests we use. Interestingly, however, combinations of predictive densities appear to be correctly approximated by a normal density: the simple, equal average when predicting output growth and Bayesian model average when predicting inflation.

On Fiscal Multipliers: Estimates from a Medium Scale DSGE Model

This paper contributes to the debate on fiscal multipliers, in the context of an estimated dynamic stochastic general equilibrium model, featuring a rich fiscal policy block and a transmission mechanism for government spending shocks. I find the multiplier for government spending to be 1.07, which is largest on impact. The multipliers for labor and capital tax on impact are 0.13 and 0.34, respectively. The effects of tax cuts take time to build and exceed stimulative effects of spending by 12-20 quarters. I carry out several counterfactual exercises to show how alternative financing methods and expected monetary policy have consequences for the size of fiscal multipliers.

To link or Not To Link? Netting and Exposures Between Central Counterparties

This paper provides a framework to compare linked and unlinked CCP configurations in terms of total netting achieved by market participants and the total system default exposures that exist between participants and CCPs. A total system perspective, taking both market participant and CCP exposures into account, is required to answer an important policy question faced by some smaller jurisdictions: whether or not to consider linking a domestic CCP with one or more offshore CCPs. Generally, a single global CCP results in the lowest total system exposure as it allows for multilateral netting across all participants while avoiding the creation of inter-CCP exposures via links. However, global clearing may not be appropriate for all markets. Using a two country model, with a global CCP serving both markets and a local CCP clearing only domestic country participants' transactions, we show that establishing links between two CCPs leads to higher exposures for the domestic CCP and can result in a decrease in overall netting efficiency and higher total system exposures when the number of participants at the local CCP is small relative to the number of participants at the global CCP. As the relative weight applied by decision makers to CCP exposures as compared to market participants' exposures increases, so does the number of domestic participants required to make the linked case preferred from a total system perspective. Our results imply that the establishment of a link between a small domestic CCP and a larger global CCP is unlikely to be desirable from a total system perspective in the majority of cases.

Méthodologie de construction de séries de taux de défaut pour l'industrie canadienne

Default rates are series commonly used in stress testing. In Canada, as in many other countries, there are no historical series available for sectoral default rates on bank loans to firms. Knowledge of such data is required to assess the impact of shocks on the balance sheets of financial institutions and to conduct stress-testing exercises of the banking system. The authors discuss the methodology used to construct historical series of firm default rates for selected sectors of the Canadian economy, as well as the models applied to predict default rates. Their findings confirm the existence of a non-linear relationship between the gross domestic product, the unemployment rate and default rates.

Market Structure and Cost Pass-Through in Retail

We examine the extent to which vertical and horizontal market structure can together explain incomplete retail pass-through. To answer this question, we use scanner data from a large U.S. retailer to estimate product level pass-through for three different vertical structures: national brands, private label goods not manufactured by the retailer and private label goods manufactured by the retailer. Our findings emphasize that accounting for the interaction of vertical and horizontal structure is important in understanding how market structure affects pass-through, as a reduction in double marginalization can raise pass-through directly but can also reduce it indirectly by increasing market share.

The Unfairness Trap: A Key Missing Factor in the Economic Theory of Discrimination

Prior evidence linking increased female representation in management to corporate performance has been surprisingly mixed, due in part to data limitations and methodological difficulties, and possibly to omission of a fairness factor in the economic theory of discrimination. Using modified theory and panel data from a nationally representative sample of Japanese firms in the 2000s, we address several of these shortcomings. We find that increases in the ratio of female executives, the presence of at least one female executive, and the presence of at least one female section chief are associated with increases in corporate profitability in the manufacturing sector. North American multinationals operating in Japan also enjoy outsized benefits from hiring and promoting female managers. The results are robust to controlling for time effects and company fixed effects and the time-varying use of temporary and parttime employees. Some of the competitive benefit of employing female managers is shown to flow from compensation savings, but a much larger part arises from direct productivity increases. Prior economic theory on discrimination implied that those who hire inexpensive and underutilized female talent will see a performance benefit; we find, however, that due to possible social comparison costs, only companies whose compensation of female talent compares well with an external benchmark will see a significant performance benefit.

A Tractable Monetary Model Under General Preferences

Consider the monetary model of Lagos and Wright (JPE 2005) but with general preferences and general production. I show that preferences satisfying UXXUHH – (UXH)2 = 0 is a sufficient condition for the existence and uniqueness of monetary equilibrium with degenerate money distribution.