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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

Allen, Jason, Robert Clark and Jean-François Houde, "The Effect of Mergers in Search Markets: Evidence from the Canadian Mortgage Industry", American Economic Review, 104(10), p. 3365-3396

Baumeister, Christiane and Lutz Kilian, "Do Oil Price Increases Cause Higher Food Prices?", Economic Policy, 29(80), p. 691-747

Fung, Ben S. C., Kim P. Huynh and Leonard Sabetti, "The Impact of Retail Payment Innovations on Cash Usage", Journal of Financial Market Infrastructures, 3(1), p. 3-31

Kartashova, Katya, "Private Equity Premium Puzzle Revisited", American Economic Review, 104(10), p. 3297-3334

Li, Fuchun, "Identifying Asymmetric Comovements of International Stock Market Returns", Journal of Financial Econometrics, 12(3), p. 507-543

Li, Fuchun and Hui Zhu, "Testing for Financial Contagion Based on a Nonparametric Measure of the Cross-Market Correlation", Review of Financial Economics, 23(3), p. 141-147

Forthcoming

Chen, Heng, "Sheep in Wolf's clothing: Using the least squares criterion for quantile estimation", Economics Letters

Gnocchi, Stefano, Andresa Lagerborg and Evi Pappa, "Do Labor Market Institutions Matter for Business Cycles?", Journal of Economic Dynamics and Control

Perez-Saiz, Hector, "Building New Plants or Entering by Acquisition? Firm Heterogeneity and Entry Barriers in the U.S. Cement Industry", Rand Journal of Economics

WORKING PAPERS

Baumesiter, Christiane, Lutz Kilian and Thomas K. Lee, "Are There Gains from Pooling Real-Time Oil Price Forecasts?" Bank of Canada Working Paper 2014-46

Camacho, Maximo and Danilo Leiva-Leon, "The Propagation of Industrial Business Cycles", Bank of Canada Working Paper 2014-48

Kabaca, Serdar, "Labour Share Fluctuations in Emerging Markets: The Role of the Cost of Borrowing", Bank of Canada Working Paper 2014-47

Kryvtsov, Oleksiy and Nicholas Vincent, "On the Importance of Sales for Aggregate Price Flexibility", Bank of Canada Working Paper 2014-45

Poloz, Stephen S., "Integrating Uncertainty and Monetary Policy-Making: A Practitioner's Perspective", Bank of Canada Discussion Paper 2014-6

ABSTRACTS

The Effect of Mergers in Search Markets: Evidence from the Canadian Mortgage Industry

We examine the relationship between concentration and price dispersion using variation induced by a merger in the Canadian mortgage market. Since interest rates are determined through a search and negotiation process, consolidation weakens consumers' bargaining positions. We use reduced-form techniques to estimate the mergers' distributional impact, and show that competition benefits only consumers at the bottom and middle of the transaction price distribution, and that mergers reduce the dispersion of prices. We illustrate that these effects can be explained by the presence of search frictions, and that the average effect of mergers on rates underestimates the increase in market power.

Do Oil Price Increases Cause Higher Food Prices?

U.S. retail food price increases in recent years may seem large in nominal terms, but after adjusting for inflation have been quite modest even after the change in U.S. biofuel policies in 2006. In contrast, increases in the real prices of corn, soybeans, wheat and rice received by U.S. farmers have been more substantial and can be linked in part to increases in the real price of oil. That link, however, appears largely driven by common macroeconomic determinants of the prices of oil and of agricultural commodities rather than the pass-through from higher oil prices. We show that there is no evidence that corn ethanol mandates have created a tight link between oil and agricultural markets. Moreover, increases in agricultural commodity prices have contributed little to U.S. retail food price increases, because of the small cost share of agricultural products in food prices. In short, there is no evidence that oil price shocks have been associated with more than a negligible increase in U.S. retail food prices in recent years. Nor is there evidence for the prevailing wisdom that oil-price driven increases in the cost of food processing, packaging, transportation and distribution have been responsible for higher retail food prices. Similar results hold for other industrialized countries. There is reason, however, to expect food commodity prices to be more tightly linked to retail food prices in developing countries.

The Impact of Retail Payment Innovations on Cash Usage

This study examines the effect of retail payment innovations on the use of cash at the point of sale. In a survey on methods of payment conducted by the Bank of Canada in 2009, 6% of respondents reported in three-day shopping diaries using two new payment innovations: contactless credit and stored-value cards. However, early adopters of new technologies are not always representative of the wider population. We utilize propensity score matching methods to decompose the impact of these payment innovations on cash usage into selection and causal effects. Our results show that the use of contactless credit and stored-value cards leads to a reduction in expenditure share for cash of 14% and 12% on average, compared with difference in-means estimates of 19% and 20%, respectively. Sensitivity analysis using Rosenbaum bounds quantifies the robustness of our estimated treatment effects to unobserved bias. Accounting for selection could be important for central bank monitoring and forecasting of demand for cash using micro-level data.

Private Equity Premium Puzzle Revisited

This paper revisits the results of Moskowitz and Vissing-Jørgensen (2002) on returns to entrepreneurial investments in the United States. Following the authors' methodology and new data from the Survey of Consumer Finances, I find that the "private equity premium puzzle" does not survive the period of high public equity returns in the 1990s. The difference between private and public equity returns is positive and large period-by-period between 1999 and 2007. Whereas in the 2008-2010 period, overlapping with the Great Recession, public and private equities performances are substantially closer. I validate these results in the aggregate data going back to the 1960s.

Identifying Asymmetric Comovements of International Stock Market Returns

Based on a new approach for measuring the comovements between stock market returns, we provide a new test for the null hypothesis of symmetric comovements in the sense that stock market downturns will lead to the same degree of comovements as market upturns. Since the new measure of comovements can be used to measure the strength of both linear and nonlinear dependence, our test can be used to identify whether there exist asymmetric comovements induced by a linear or nonlinear dependence. The test is applied to detect whether asymmetric comovements exist in international stock markets. We find that asymmetric comovements exist between the U.S. stock market and the stock markets of Canada, France, Germany, and the United Kingdom, but the data are unable to reject the null hypothesis of the symmetric comovements between the U.S. and Japanese stock markets.

Testing for Financial Contagion Based on a Nonparametric Measure of the Cross-Market Correlation

When contagion is defined as a significant increase in market comovement after a shock to one country, we propose a test for financial contagion based on a nonparametric measure of the cross-market correlation. Monte Carlo simulation studies show that our test has reasonable size and good power to detect financial contagion, and that Forbes and Rigobon's test (2002) is relatively conservative, indicating that their test tends not to find evidence of contagion when it does exist. Applying our test to investigate contagion from the 1997 East Asian crisis and the 2007 Subprime crisis, we find that there existed international financial contagion from the two financial crises.

Sheep in Wolf's clothing: Using the least squares criterion for quantile estimation

Estimation of the quantile model, especially with a large data set, can be computationally burdensome. This paper proposes using the Gaussian approximation, also known as quantile coupling, to estimate a quantile model. The intuition of quantile coupling is to divide the original observations into bins with an equal number of observations, and then compute order statistics within these bins. The quantile coupling allows one to apply the standard Gaussian-based estimation and inference to the transformed data set. The resulting estimator is asymptotically normal with a parametric convergence rate. A key advantage of this method is that it is faster than the conventional check function approach, when handling a sizable data set.

Do Labor Market Institutions Matter for Business Cycles?

Using panel data of 19 OECD countries observed over 40 years and data on specific labor market reform episodes we conclude that labor market institutions matter for business cycle fluctuations. Spearman partial rank correlations reveal that more flexible institutions are associated with lower business cycle volatility. Turning to the analysis of reform episodes, wage bargaining reforms increase the correlation of the real wage with labor productivity and the volatility of unemployment. Employment protection reforms increase the volatility of employment and decrease the correlation of the real wage with labor productivity. Reforms reducing replacement rates make labor productivity more procyclical.

Building New Plants or Entering by Acquisition? Firm Heterogeneity and Entry Barriers in the U.S. Cement Industry

I estimate a model of entry for the cement industry that considers two options of expansion into new markets: building a new plant (greenfield entry) or acquiring an incumbent. The model takes into account that there is a transfer of the buyer firm-level characteristics to the acquired plants, which affects profits from the acquisition. Estimates show that a less-permissive Reagan-Bush administration's merger policy would decrease the number of acquired plants by 71%, greenfield entry would increase by 9.2% and consumer surplus would decrease by 23.5%. Results suggest that regulators should be particularly concerned about policies that negatively affect the efficient reallocation of assets between incumbents and entrants.

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

The answer as to whether there are gains from pooling real-time oil price forecasts 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 mean-squared prediction error 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.

The Propagation of Industrial Business Cycles

This paper examines the business cycle linkages that propagate industry-specific business cycle shocks throughout the economy in a way that (sometimes) generates aggregated cycles. The transmission of sectoral business cycles is modelled through a multivariate Markov-switching model, which is estimated by Gibbs sampling. Using nonparametric density estimation approaches, we find that the number and location of modes in the distribution of industrial dissimilarities change over the business cycle. There is a relatively stable trimodal pattern during expansionary and recessionary phases characterized by highly, moderately and lowly synchronized industries. However, during phase changes, the density mass spreads from moderately synchronized industries to lowly synchronized industries. This agrees with a sequential transmission of the industrial business cycle dynamics.

Labour Share Fluctuations in Emerging Markets: The Role of the Cost of Borrowing

This paper contributes to the literature by documenting labour income share fluctuations in emerging-market economies and proposing an explanation for them. Time-series data indicate that emerging markets differ from developed markets in terms of changes in the labour share over the business cycle. Labour share is more volatile in emerging markets and is procyclical, especially in countries facing countercyclical interest rates. In contrast, labour share in developed markets is more stable and slightly countercyclical. A frictionless small open-economy real business cycle model cannot account for these facts. I introduce working capital into this model, which generates liquidity need for labour payments. The main result is that the behaviour of the cost of borrowing can predict the right sign of the co-movement between labour share and output in both country groups, and can partly be responsible for the volatility of labour share. I also show that imperfect financial markets in the form of credit restrictions not only amplify the results for the variability of labour share but also help better explain some of the striking business cycle regularities in emerging markets, such as highly volatile consumption, strongly procyclical investment and countercyclical net exports.

On the Importance of Sales for Aggregate Price Flexibility

Macroeconomists have traditionally ignored the behavior of temporary price markdowns (“sales”) by retailers. Although sales are common in the micro price data, they are assumed to be unrelated to macroeconomic phenomena and generally filtered out. We challenge this view. First, using the 1996–2012 data set of the U.K. CPI monthly price quotes, we document a roughly twofold increase in the frequency of sales during the Great Recession. We also present evidence of countercyclical sales in the United States. Second, we build a New Keynesian macroeconomic model in which temporary sales arise as a pricing mechanism that allows retailers to price discriminate across consumers with different opportunity costs of time. In line with our empirical evidence, the model predicts that firms react to macroeconomic shocks by varying the frequency of sales. In response to a monetary contraction, firms facing costs of decreasing regular prices post more sales, and households spend more time looking for sales. The resulting fall in the aggregate price level can be significantly larger than if sales were ignored. When the model is calibrated to match the behavior of sales in the data, it implies that the sales margin leads to a much smaller response of real consumption to monetary shocks.

Integrating Uncertainty and Monetary Policy-Making: A Practitioner's Perspective

This paper discusses how central banking is evolving in light of recent experience, with particular emphasis on the incorporation of uncertainty into policy decision-making. The sort of post-crisis uncertainty that central banks are dealing with today is more profound than that which is typically subjected to rigorous analysis and does not lend itself easily to formal modelling. As a practical matter, the policy-maker is dependent on macro models to develop a coherent monetary policy plan, and this burden of coherence means that fundamental uncertainty must be incorporated explicitly into the policy formulation process. As suggested here, doing so transforms policy formulation from an exercise in reverse engineering to one of risk management, one consequence of which is to inject a little more realism about uncertainty into the policy narrative, while trusting markets to wrestle with the data flow and deliver two-way trading. The evolution is likely to be a long one - researchers are encouraged to keep focusing on developing a practical understanding of how the economy works, one that admits that rules around economic behaviour are not cast in stone, but are almost certainly subject to variation through time and events.