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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

Diez de los Rios, Antonio, "Optimal asymptotic least squares estimation in a singular set-up", Economics Letters, Volume 128, March 2015, Pages 83–86

Huynh, Kim, David Jacho-Chávez, Robert Petrunia, and Marcel Voia, "A nonparametric analysis of firm size, leverage and labour productivity distribution dynamics", Empirical Economics, Volume 48, Issue 1, February 2015, Pages 337-360

Forthcoming

Allen, Jason, and Teodora Paligorova, "Bank Loans for Private and Public Firms in a Liquidity Crunch", Journal of Financial Stability

WORKING PAPERS

Damar, H. Evren, Césaire Meh, and Yaz Terajima, "Effects of Funding Portfolios on the Credit Supply of Canadian Banks", Bank of Canada Working Paper 2015-10

Ehrmann, Michael, Damjan Pfajfar, and Emiliano Santoro, "Consumers' Attitudes and Their Inflation Expectations", Board of Governors of the Federal Reserve System Finance and Economics Discussion Paper, No. 015, March 2015

Feunou, Bruno, and Ernest Tafolong, "Fourier Inversion Formulas for Multiple-Asset Option Pricing", Bank of Canada Working Paper 2015-11

Fontaine, Jean-Sébastien, René Garcia, and Sermin Gungor, "Funding Liquidity, Market Liquidity and the Cross-Section of Stock Returns", Bank of Canada Working Paper 2015-12

Morel, Louis, "Sluggish Exports in Advanced Economies: How Much Is Due to Demand?", Bank of Canada Discussion Paper 2015-3

ABSTRACTS

Optimal asymptotic least squares estimation in a singular set-up

In this note, I extend the optimal asymptotic least squares estimation framework to deal with singularities in the asymptotic covariance of the distance function. Further, the relationship between the

asymptotic least squares and maximum likelihood estimation frameworks in such a singular set-up is discussed

A nonparametric analysis of firm size, leverage and labour productivity distribution dynamics

This paper investigates the evolution of firm distributions for entrant manufacturing firms in Canada using nonparametric methods. These nonparametric methods use functional principal components to describe these densities over time. This method is applied to a novel administrative firm-level database from Statistics Canada to investigate the evolution of the 1985 and 1989 cohorts of new entrants. We find that firm leverage (debt-to-asset ratio) distributions have persistent deviations from the initial distributions. Bootstrap test statistics suggest that the distributions are different across all time periods. Firm size and labour productivity have transitory deviations and some of the distributions are the same across all time periods. Univariate finite mixture and stochastic dominance tests are used to conduct pairwise comparisons as robustness measures. We find that these static pairwise comparisons confirm the dynamic evolution of these densities. This method illustrates the efficacy of functional principal components to analyse firm distributions.

Bank Loans for Private and Public Firms in a Liquidity Crunch

Banks reliance on short-term funding has increased over time. While an effective source of financing in good times, the 2007 financial crisis has exposed the vulnerability of banks and ultimately firms to such a liability structure. We show that it was the banks that relied most on wholesale funding that contracted their lending the greatest during the crisis. Our results suggest, however, that banks propagate liquidity shocks by reducing credit only to a certain type of borrowers. Importantly, in the financial crisis banks passed the liquidity shock only to public firms and not to private _rms. Loans to private firms were affected through a different channel, largely through higher retained shares by lead arrangers. Vulnerable banks increased their monitoring of informationally opaque firms for which the potential for informational rents is the highest

Effects of Funding Portfolios on the Credit Supply of Canadian Banks

This paper studies how banks simultaneously manage the two sides of their balance sheet and its implications for bank risk taking and real economic activity. First, we analyze how changes in funding affect the supply of bank loans. We then examine how the supply of credit by banks that rely more on wholesale funding changed during periods of low-for-long interest rates and during the recent financial crisis. The findings suggest that contemporaneous changes in wholesale funding are positively associated with large business loans. In addition, we find that banks that rely on wholesale funding tend to increase mortgage loans in a prolonged low rate environment. This is suggestive evidence that these banks may be taking on more liquidity risk by supplying long-term loans with short-term funding. We also find that mortgage lending by banks relying more on wholesale funding increased, a likely result of government policies to increase liquidity in the market during the crisis.

Consumers' Attitudes and Their Inflation Expectations

This paper studies consumers' inflation expectations using micro-level data from the Surveys of Consumers conducted by University of Michigan. It shows that beyond the well-established socio-economic factors such as income, age or gender, other characteristics such as the households' financial situation and their purchasing attitudes are important determinants of their forecast accuracy. Respondents with current or expected financial difficulties, pessimistic attitudes about major purchases, or expectations that income will go down in the future have a stronger upward bias in their expectations than other households. However, their bias shrinks by more than that of the average household in response to increasing media reporting about inflation. Equivalent results are found during recessions.

Fourier Inversion Formulas for Multiple-Asset Option Pricing

Plain vanilla options have a single underlying asset and a single condition on the payoff at the expiration date. For this class of options, a well-known result of Duffie, Pan and Singleton (2000) shows how to invert the characteristic function to obtain a closed-form formula for their prices. However, multiple-asset and multiple-condition derivatives such as rainbow options cannot be priced within this framework. Utilizing inversion of the Fourier transform - and resorting to neither the Black-Scholes framework nor the affine models settings - the authors provide an analytical solution for options whose payoffs depend on two or more conditions. Numerical experiments based on the multiple-asset and multiple-condition derivatives are provided to illustrate the usefulness of the proposed approach.

Funding Liquidity, Market Liquidity and the Cross-Section of Stock Returns

Following theory, we check that funding risk connects illiquidity, volatility and returns in the cross-section of stocks. We show that the illiquidity and volatility of stocks increase with funding shocks, while contemporaneous returns decrease with funding shocks. The dispersions of illiquidity, volatility and returns widen following funding shocks. Funding risk is priced, generating a returns spread of 4.25 percent (annually) between the most and least illiquid portfolios, and of 5.30 percent between the most and least volatile portfolios. Estimates are robust using mimicking portfolio returns, alternative portfolio sorts, traditional test assets, other risk factors, monthly returns or quarterly returns.

Sluggish Exports in Advanced Economies: How Much Is Due to Demand?

Exports in advanced economies have been relatively sluggish since 2011, growing at a much slower pace than observed before the global financial crisis. In this paper, export-demand equations for a panel of 18 countries in the Organisation for Economic Co-operation and Development (OECD) are estimated in order to assess whether this sluggishness can be attributed to weak foreign demand. Over half of the slowdown in advanced-economy export growth since 2011 (relative to the pre-crisis trend) can be explained by weak global demand growth. More specifically, exports in advanced economies have been restrained by the weakness of global investment, a trade-intensive demand component and weak demand out of Europe, a region that accounts for about 40 per cent of the demand for advanced-economy exports. Weak foreign demand cannot explain all of the weakness in aggregate OECD exports since 2011, suggesting that other factors have also played a role.