

PERSONAL INFORMATION

Gender: Male
Citizenship: Dutch

CONTACT INFORMATION

Bank of Canada
Financial Markets Departments
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POSITIONS

Senior Economist, Bank Of Canada, since November 2017
Research Officer, Systemic Risk Centre, LSE, May 2014 - August 2017

RESEARCH INTERESTS

Empirical Asset Pricing, Derivatives Pricing, Over-The-Counter Markets, Market Liquidity,
Extreme Value Theory

EDUCATION

PhD in Finance, University of Rotterdam (Tinbergen Institute), December 2015
MPhil in Finance, Tinbergen Institute, May 2011
MSc in Finance (cum laude), VU University Amsterdam, January 2008
MSc in Economics, VU University Amsterdam, August 2009

FELLOWSHIPS & AWARDS

Thesis Award of the Ministry of Finance.
Mozaiek Ph.D. Grant by the Netherlands organization for scientific research

PUBLICATIONS

Rethinking Valuation and Pricing models: Lessons Learned from the Crisis and Future Challenges. Chapter 31 - Tail Risk Reduction strategies. Elsevier publication 2012 (with P. Stork). Editors: Carsten Wehn, Christian Hoppe and Greg Gregoriou.

RESEARCH PAPERS

Disaster and Fortune Risk in Asset Returns

Do Disaster risk and Fortune risk fetch a premium or discount in the pricing of individual assets? Disaster risk and Fortune risk are measures for the co-movement of individual stocks with the market, given that the state of the world is extremely bad or extremely good, respectively. To address this question measures of Disaster risk and Fortune risk, derived from statistical Extreme Value Theory, are constructed. The measures are non-parametric and the number of order statistics to be used in the analysis is based on the Kolmogorov-Smirnov distance. This alleviates the problem of an arbitrarily chosen extreme region. The extreme dependence measures are used in Fama-MacBeth cross-sectional asset pricing regressions including Market, Fama-French, Liquidity and Momentum factors. I find that Disaster risk fetches a significant premium of 0.34% for the average stock.

Tail Index Estimation: Quantile Driven Threshold Selection (with J. Danielsson, L. de Haan and C. G. de Vries)

The selection of upper order statistics in tail estimation is notoriously difficult. Most methods are based on asymptotic arguments, like minimizing the asymptotic mse, that do not perform well in finite samples. Here we advance a data driven method that minimizes the maximum distance between the fitted Pareto type tail and the observed quantile. To analyse the finite sample properties of the metric we organize a horse race between the other methods proposed by the literature. In most cases the finite sample based methods perform best. To demonstrate the economic relevance of choosing the proper methodology we use daily equity return data from the CRSP database and find economically relevant variation between the tail index estimates.

Worst Case Analysis: Biased Estimators (with J. Danielsson and C. G. de Vries)

Given that the return distribution has a heavy tail, the non-parametric worst case analysis, i.e the minimum of the sample, is always upwards biased. Relying on semi-parametric extreme value theory (EVT) reduces the bias considerably in the case of very heavy tails. For the less heavy tails this relationship

is reversed. We derive the bias for the non-parametric heavy tailed order statistics and contrast it with the semi-parametric EVT approach. Estimates for a large sample of US stock returns indicates that these patterns in the bias are also present in financial data. With respect to risk management, this induces an overly conservative capital allocation.

Information Aggregation in OTC Derivatives Markets: Evidence from Consensus Prices (with A. Uthemann)

ESEM Award 2017 at the 70th European Meeting of the Econometric Society.

This paper provides empirical evidence on information flows in the over-the-counter market for S&P 500 index options using a proprietary data set on price estimates provided by major broker-dealers to a consensus pricing service. We develop a structural model of learning about asset values from public and private information which we then estimate. From the parameter estimates we derive model-implied measures of the informational content of broker-dealers' price estimates and the informational value of the consensus price feedback for its subscribers. We compare these measures across the options' strike price and time-to-maturity space. We find that institutions' price estimates contain a significant amount of new information about option valuations for all strike prices and times-to-maturities. Even the least informationally rich price estimates put almost half of their weight on new information. This figure increases to above 95 percent for the most informationally rich price estimates. The consensus price feedback itself is found to be a valuable source of pricing information across the volatility surface.

RESEARCH IN
PROGRESS

Limits to Liquidity Arbitrage in the Treasury Market (with A. Uthemann and S. Zhang) In this paper we estimate the effect of monetary policy on bond market liquidity through securities lending. Using the change in the yield on treasury bond futures before and after FOMC announcements, we estimate the impact unexpected rate changes have on the cost of borrowing securities in the securities lending market for treasury and corporate bonds. In turn we examine the impacts of this exogenous shock of borrowing on liquidity conditions in the various markets. We proxy liquidity in the bond markets with the noise measure by Hu, Pan and Wang (2013). Our preliminary results indicate that tightening monetary policy increases the cost of securities lending and therefore deteriorates liquidity of the bond market.

The Term Structure of Uncertainty (with J. Danielsson, A. Uthemann, and J.P. Zigrand) The Totem dataset contains extremely long dated and deep out-of-the money options. These range from options with maturities up to 30 years with a moneyness of 20 (80% drop in the underlying) to call options with a moneyness of 300 (increase of 200%). The current literature uses OptionMetrics data and is therefore limited to options with maturity of up to 3 years and moneyness ranging from 85 to 115 on average. By deriving the risk neutral densities derived from option prices with time to maturity of 3 to 20 years we are able to study the exponential scaling laws for the quantiles of the risk neutral densities. We find considerable fluctuations over our sample period. Our preliminary results indicate that during times of market stress the market risk becomes concentrated at short horizons, whereas in calmer times the term structure of risk is steeper.

Hedge Fund Activism in the Securities Lending Market (with M. Burguet, A. Uthemann, and C. Zhang) For the equity side of the securities lending market we focus on the transfer of voting rights when borrowing a security. In this project we investigate to what extent activist hedge funds use the securities lending market to implement their activist strategy. We use proxy-voting events (record dates) for equities where activist hedge funds have submitted a 13d filing to perform event studies in the securities lending market. Our initial results show a relative higher activity for voting events where activist hedge funds are present.

ACADAMIC
POSITIONS

Visiting Scholar, NYU Stern, 2012
Visiting Scholar, LSE Systemic Risk Centre, 2013

TEACHING
EXPERIENCE

Lecturer, Quantitative Methods in Finance (Two week pre-Master course), Duisenberg School of Finance
Teaching Assistant, Derivatives (LSE Summer school), London School of Economics
Teaching Assistant, Advanced Econometrics (M. Sc.), Duisenberg School of Finance
Teaching Assistant, Economics of Risk (M. Sc.), Duisenberg School of Finance
Teaching Assistant, Macroeconomics (B.Sc.), Erasmus University Rotterdam
Teaching Assistant, Quantitative Macro Economics (B.Sc.), Erasmus University Rotterdam
Teaching Assistant, Business Research Methods(B.Sc.), VU University Amsterdam

CONFERENCE PRESENTATIONS	Econometric Society Asian Meeting, Kyoto, Japan, August 2016 European Economic Association Annual Congress, Geneva, Switzerland, August 2016 Systemic Risk in Over-The-Counter Markets Conference, LSE, November 2015 10 th Seminar on Risk, Financial Stability and Banking, Banco Central do Brasil, Sao Paolo, August 2015 Systemic Risk in Financial Markets, Rotterdam, July 2013
CONFERENCE ORGANISATION	Systemic Risk in Over-The-Counter Markets, LSE, November 2015.
REFEREEING	Journal of Empirical Finance, Journal of Banking and Finance
LANGUAGES	Dutch (Native), Aramaic (Native), English (Fluent), German (Advanced), French (Beginner)