

November 5, 2016

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Fields of Concentration:

Financial Econometrics
Financial Economics
Empirical Asset Pricing

Comprehensive Examinations Completed:

June 2014 (Written) Econometrics, Financial Economics
June 2013 (Written) Macroeconomics, Microeconomics

Dissertation Title:

Essays in Risk Modeling, Asset Pricing and Network Measurement in Finance

Committee:

Professor Jean-Marie Dufour
Professor John Galbraith
Professor Victoria Zinde-Walsh

Degrees:

Ph.D., Economics, McGill University, Canada, (expected May 2017)
M.A., Economics, University of British Columbia, Canada, August 2012
B.A., Economics, Nankai University, China, July 2011

Fellowships, Honors and Awards:

Grad Excellence Award, McGill University, 2012-2016
Dufour Graduate Award, McGill University, 2012-2014
International Tuition Award, University of British Columbia, 2011
Excellent Student Scholarship, Nankai University, 2007-2011

Teaching Experience: (Teaching Assistant)

Introductory Econometrics: Fall 2013-2016, Winter 2016
Economic Statistics: Winter 2015
Introduction to Macroeconomics: Winter 2013-2014
Public Sector Economics: Fall 2012

Research Papers:

“Multiple Horizon Causality in Network Analysis: Measuring Volatility Interconnections in Financial Markets,” (with Jean-Marie Dufour). Under Review at *Review of Economic Studies* (Econ Job Market Paper)

Existing literature cannot provide economic and financial networks with a unified measure to estimate network spillovers for empirical studies. In this paper, we propose a novel time series econometric method to measure high-dimensional directed and weighted market network structures. Direct and spillover effects at different horizons, between nodes and between groups, are measured in a unified framework. We infer causality effects in the network through a causality measure based on flexible VAR models specified by the LASSO approach. (Non-sparse) network structures can be estimated from a sparse set of model parameters. To summarize complex estimated network structures, we also proposed three connectedness measures that fully exploit the flexibility of our network measurement method. We apply our approach to investigate the implied volatility interconnections among the S&P 100 stocks over the period of 2000 - 2015 as well as its subperiods. We find that 7 out of the 10 most influential firms in the S&P 100 belong to the financial sector. Top investment banks (Morgan Stanley, Goldman Sachs and Bank of America) have the greatest influence in the financial sector. Market connectedness is especially strong during the recent global financial crisis, and this is mainly due to the high connectedness within the financial sector and the spillovers from the financial sector to other sectors.

“Centralities in Illiquidity Transmission Networks and the Cross-Section of Stock Returns” (Finance Job Market Paper)

This paper investigates the relationship between stock illiquidity spillovers and the cross-section of expected returns. I study industry-level illiquidity spillovers in a directed network that describes the interconnections among stocks' bid-ask spreads, where the interconnections are latent and are estimated by a Granger-type measure. In the directed illiquidity transmission network, the illiquidity of high sensitive centrality (SC) industries, i.e., those active at receiving illiquidity from others, as well as high influential centrality (IC) industries, i.e., those active at transferring illiquidity to others, tends to covary with that of their neighbours and neighbours' neighbours across different horizons due to illiquidity spillovers. As a result, long run returns of the portfolios that contain stocks of central (high SC or high IC) industries may be more volatile because of weak diversification of the liquidity risk across different horizons. Thus, investors would require compensations for holding these central stocks. I confirm this conjecture and find that central industries in illiquidity transmission networks do earn higher average stock returns (around 4 % per year) than other industries. Market-beta, size, book-to-market, momentum, liquidity and idiosyncratic volatility effects cannot account for the high average return earned by central industries.

“Stable GARCH Model with Time-Dependent Tails”

Predicting volatility conditional on current observables is crucial for financial risk

management, from the desk level to the firm level. This paper proposes a new Dynamic Stable GARCH model, which involves the use of stable distribution with time-dependent tail parameters to model and forecast tail risks in an extremely high volatility environment. We can differentiate extreme risks from normal market fluctuations with this model. Asymptotic inference methods in high volatility environments are unreliable, as standard regularity conditions may not apply or may hold only weakly. This paper proposes a fast Monte Carlo test inference procedure that exploits simulation-based methods to resolve the inference issue. Empirical analysis on the S&P 500 index, NIKKEI 225 index and USD/YEN exchange rates show that my model provides more precise in-sample fits and out-of-sample forecasts of Value-at-Risk (VaR) at the levels above 95% than traditional GARCH models (e.g., the GARCH_(1,1)).

Publications:

“Comparative Study of the Heterogeneous Return to Education,” (with Guangjie Ning), *Economic Research Journal* (in Chinese), 2013(2):83-95.

“International Trade of the Information Industry in China,” *Journal of Quantitative & Technical Economics* (in Chinese), 2010(8):116-28.

Conference/Workshop Presentations:

American Economic Association Meetings, Chicago, 2017. (Scheduled)

Canadian Economics Association 50th Annual Conference, Ottawa, 2016.

CIREQ Econometrics Conference in Honor of Jean-Marie Dufour, Montreal, 2016.

Twelfth CIREQ Ph.D. Students' Conference, Montreal, 2016.

4th International Symposium in Computational Economics and Finance, Paris, 2016.

Canadian Economics Association 49th Annual Conference, Toronto, 2015.

CIREQ Lunch Seminar, McGill University.

Languages:

English (fluent), Cantonese (native), Mandarin (native)

Citizenship:

China

Reference:

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