CV-2023

Name: **Dinghai Xu**

Department: Economics

Degrees:

- Ph.D., Economics, University of Western Ontario, 2007.
- M.A., Economics, University of Windsor, 2003.
- B.A., Finance (Minor: Computer Science), Chongqing Technology and Business University, 2000.

Dissertation Title: "Asset Returns, Volatility and Value-at-Risk" (Supervisor: Professor John Knight)

Employment at Waterloo

- Professor, Department of Economics, University of Waterloo 2021 – present
- Associate Chair of Graduate Studies, Department of Economics, University of Waterloo, 2018 -- 2019
- Associate Professor (with Tenure), Department of Economics, University of Waterloo, 2013 -- 2021
- Assistant Professor (Tenure-Track), Department of Economics, University of Waterloo, 2007 -- 2013

Affiliations

- Affiliate Professor, Master of Quantitative Finance (MQF), Statistics and Actuarial Science, University of Waterloo, 2014 – present.
- Research Fellow, Waterloo Research Institute in Insurance, Securities and Quantitative Finance (WatRISQ), 2007 -- Present

Awards

- **Outstanding Performance Award** (Teaching, Research and Service), University of Waterloo, 2020 – 2021
- **Outstanding Performance Award** (Teaching, Research and Service), University of Waterloo, 2015 – 2016
- **Outstanding Performance Award** (Teaching, Research and Service), University of Waterloo, 2010 – 2011

Research Grants

- National Natural Science Foundation of China, "Institutional Investors Information Spillover Effects and Risks", **Co Principal Investigator** (with 50% weight). CO-PI is

Donghua Wang from East China University of Technology and Science. Grant: RMB 470,000, 2022 – 2025.

- International Research Partnership Grant (Research International), “Structural Breaks in Stock Market Volatility: Evidence from China Stock Market", **Principal Investigator**. The International Partner is Shanghai University of Finance and Economics. CO-PI is Dongming Zhu, School of Economics and Institute for Advanced Research. Grant: $ 40,000. 2020 – 2023.

- UW/SSHRC Exchange Grant I: Knowledge Mobilization, "Modelling Asset Returns in the Presence of Price Limits", **Principal Investigator**. Grant: $2,800. 2019-2020.

- National Natural Science Foundation of China, "Disentangling the Spreading Characteristics of the Extreme Risk in Chinese Stock Market Based on the Hawkes Process and Agent-based Computational Finance", **Co Principal Investigator** (with 50% weight). CO-PI is Donghua Wang from East China University of Technology and Science. Grant: RMB 480,000, 2018 – 2021.

- International Research Partnership Grant (IRPG China Program), "Volatility Models and Financial Risk Analysis: an empirical Study on Shanghai and Shenzhen Stock Markets", **Principal Investigator**. Co-Applicants is Donghua Wang. Grant: $40,000. 2017 – 2019.

- UW/SSHRC – International Travel Grants, **Principal Investigator**. Total Grant Amount: $ 13,800. 2010-2011; 2011-2012; 2012-2013; 2013-2014; 2014-2015; 2018-2019.

- Waterloo Research Institute in Insurance, Securities and Quantitative Finance (WatRISQ) Research Grant, "Mixture Models in Financial Econometrics", **Principal Investigator**. Grant: $5,000. 2011 – 2012.

- Econometric Society Conference Research Fund, "Asymmetric Stochastic Conditional Duration Model -- A Mixture-of-Normal Approach", **Principal Investigator**. Grant: USD $1,000. 2010.

- SSHRC 4A, "Incorporating Realized Volatility Measures into Non-Linear Volatility Models: A High Frequency Data Approach", **Principal Investigator**. Grant: $8,000. 2009 -- 2010.

- SSHRC 4A, "Regime Switching Models in Finance", CO-**Principal Investigator** (with Tony Wirjanto). Grant: $8,000. 2008 -- 2009.

- New Faculty Supervision Award, **Principal Investigator**. Grant: $5,000. 2008 – 2009.

PUBLICATIONS

Major publications already in print or formally accepted for publication

I. Articles in Refereed Journals

- “Canadian Stock Market Volatility under COVID-19", ***International Review of Economics & Finance,*** Volume 77, 159 – 169, 2022.

- "Modelling asset returns in the presence of price limits with Markov-switching mixture of truncated normal GARCH distribution: evidence from China", (with Donghua Wang, Jin Ding, Guoqing Chu and Tony Wirjanto), ***Applied Economics,*** Volume 53 (7), 781 - 804, 2021.

- "A Study on Volatility Spurious Almost Integration Effect: A Threshold Realized GARCH Approach", ***International Journal of Finance and Economics***, Volume 26 (3), 4104 - 4126, 2021.

- "Modelling Asset Returns under Price Limits with Mixture of Truncated Gaussian Distribution", ***Applied Economics***, Volume 52 (52), 5706 - 5725, 2020. [DOI: 10.1080/00036846.2020.1770682]

- "Combining a Self-Exciting Point Process with the Truncated Generalized Pareto Distribution: An Extreme Risk Analysis under Price Limits", (with Jingru Ji., Donghua Wang, and Chi Xu), ***Journal of Empirical Finance***, Vol (57), Pages 52-70, 2020. [DOI: 10.1016/j.jempfin.2020.03.003]

- "Modelling the Spreading Process of Extreme Risks via a Simple Agent-Based Model: Evidence from the China Stock Market", (with Jingru Ji and Donghua Wang), ***Economic Modelling***, Vol 80, Pages 383-391, 2019. [DOI: 10.1016/j.econmod.2018.11.022]

- "GMM Estimation of a Stochastic Volatility Model with Realized Volatility: A Monte Carlo Study", (with Pierre Chausse), ***Econometric Reviews***, Vol 37(7), Pages 719-743, 2018. [DOI: 10.1080/07474938.2016.1152654]

- "Random Matrix Application to Correlations amongst Volatility of Assets", (with Ajay Singh), ***Quantitative Finance***, Vol 16(1), Pages 69-83, 2016. [DOI: 10.1080/14697688.2015 .1014400]

- "Is Volatility Clustering of Asset Returns Asymmetric?", (Cathy Ning and Tony Wirjanto), ***Journal of Banking and Finance***, Vol 52, Pages 62-76, 2015. [DOI:10.1016/ j.jbankfin.2014.11.016]

- "Stochastic Volatility Model under a Discrete Mixture-of-Normal Specification", (with John Knight), ***Journal of Empirical and Finance***, Vol 37(2), Pages 216-239, 2013. [DOI:10.1007/s12197-011-9178-7]

- "Examining Realized Volatility Regimes under a Threshold Stochastic Volatility Model", ***International Journal of Finance and Economics***, Vol 17 (4), Pages 373-389, 2013. [DOI:10.1002/ijfe.1458]

- "Empirical Evidence of Leverage Effect in a Stochastic Volatility Model: a Realized Volatility Approach", (with Yuying Li), (Invited Contribution), ***Frontiers of Economics in China***, Vol 7 (1), Pages 22-43, 2012. [DOI: 10.3868/s060-001-012-0002-6]

- "Asymmetric Stochastic Conditional Duration Model -- A Mixture-of-Normal Approach", (with John Knight and Tony Wirjanto), ***Journal of Financial Econometrics***, Vol 9(3), Pages 469-488, 2011. [DOI: 10.1093/jjfinec/nbq026]

- "Continuous Empirical Characteristic Function Estimation of Mixtures of Normal Parameters", (with John Knight), ***Econometric Reviews***, Vol 30 (1), Pages 25-30, 2010. [DOI:10.1080/07474938.2011.520565]

- "An Efficient Estimation on Switching Regression Models: A Monte Carlo Study", ***Communication in Statistics: Simulation and Computation***, Vol 39 (7), Pages 1403--1421, 2010. [DOI: 10.1080/03610918.2010.497242]

- "An Empirical Characteristic Function Approach to VaR under a Mixture of Normal Distribution with Time-Varying Volatility", (with Tony Wirjanto), ***Journal of Derivatives***, Vol 18 (1), Pages 39--58, 2010. [DOI: 10.3905/jod.2010.18.1.039]

- "Modelling Leverage Effect with Copulas and Realized Volatility", (Cathy Ning and Tony Wirjanto), ***Finance Research Letters***, Vol 5 (4), Pages 221--227, 2008. [DOI: 10.1016/j.frl.2008.08.004]

- "Value at Risk with Bivariate Mixture of Normals Stochastic Volatility Models and Independent Component Analysis", (with Tony Wirjanto), ***TD-UW Computational Research Partnership Project***, 2008.

II. Working Papers

II-1. Working/Submitted/Revised-and-Resubmitted Papers

- "Modelling Stylized Features of Stock Returns with a Vine Copula", (with Cathy Ning and Wanling Huang). R&R

- "Extreme comovement and downside/upside risk spillovers between oil prices and exchange rates", (with Cathy Ning). Under Review

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- "High-speed Rail and Corporate Strategic Choice ", (with HongChang Li and Chen Wang). Under Review

- "Modelling Realized Volatility under Market Structural Breaks: A Time-Varying Parameter Realized EGARCH Approach", (with Yiru Wang), under Review.

II-2. Other Archived Working Papers

- "On Persistence of Implied Volatility: Evidence from SP500", (with Ajay Singh), 2018.
- "Truncated/Censored financial modelling: Applications to stock markets with price limits", (with Lisa Lin), 2017.
- "An ISE Approach to Gaussian GARCH Models", 2017.
- "A Mixture-of-Normals Distribution Modelling Approach in Financial Econometrics: A Selected Review", (with Tony Wirjanto), 2015.
- "Computation of Portfolio VaRs with GARCH Models Using Independent Component Analysis", (with Tony Wirjanto), 2012.

III. Conferences and Invited Seminar/Workshop Presentations

- Invited Lectures on “Mixture Models in Finance”, Department of Finance, East China University of Science and Technology, Shanghai, China Mar. 2022 [Invited by Professor Donghua Wang]
- Center for Trans-Himalaya Studies, Sichuan, China, Oct. 2022 [Invited by Professor Junrong Liu and Professor Jingzhou Yan.]
- Department of Economics, Beijing JiaoTong University, Beijing, China, Nov. 2021 [Invited by Professor Hongchang Li]
- Invited Lectures on “Recent Development in Financial Econometrics”, Department of Finance, East China University of Science and Technology, Shanghai, China Jul. 2021[Invited by Professor Donghua Wang]
- 4th International Conference on Econometrics and Statistics (EcoSta), Jul. 2020
- Department of Economics, Dalhousie University, Halifax, Canada Oct. 2019 [Invited by Professor Kuan Xu]
- School of Business, East China University of Science and Technology, Shanghai, China Jul. 2019 [Invited by Professor Donghua Wang]
- Econometric Society China Meeting, JiNan Univesity, GuangZhou, China Jun. 2019
- Department of Economics, Ohio State University, Columbus, USA Oct. 2018 [Invited by Professor Robert de Jong]
- Department of Finance, East China University of Science and Technology, Shanghai, China Jul. 2018 [Invited by Professor Donghua Wang and Jingru Ji]
- Econometric Society Asia Meeting, Sogang University, Seoul, Korea Jun. 2018
- Econometric Society China Meeting, Fudan University, Shanghai, China Jun. 2018
- XiYue Investments, Shanghai, China Aug. 2017 [Invited by Dr. Cindy Zhou, CEO of XY Investments]
- One of the Keynote Speakers, WenLan Research Workshop, ZhongNan University of Economics and Law, Wuhan, China Jul. 2017 [Invited by Professor Qiang Gong]
- School of Entrepreneurship and Management, Shanghai Technology University, Shanghai, China Jul. 2017 [Invited by Professor Bill Yang and Ming Guo]
- Keynote Speaker , Financial Econometrics Lecture Series, East China University of Science and Technology, Shanghai, China Jul. 2017 [Invited by Professor Donghua Wang]
- Summer International Econometrics Workshop, Southwestern University of Finance and Economics, ChengDu, China Jun. 2017 [Invited by Professor Zaichao Du]
- Econometric Society China Meeting, WuHan University, Wuhan, China Jun. 2017
- Econometric Society Asia Meeting, The Chinese University of HongKong, HongKong, China Jun. 2017
- One of the Invited Speakers, the 3rd Financial Econometrics and Risk Management Conference, London, Canada Apr. 2017 [Invited by Professor Lars Stentoft]
- Western Economics 50th Anniversary Conference, University of Western Ontario, London, Canada Oct. 2016 [Invited by Professor John Knight]
- Department of Economics and Finance, University of Guelph, Guelph, ON, Canada Apr. 2016 [Invited by Professor Alex Maynard]

- Canadian Econometrics Study Group (CESG), University of Guelph, Guelph, ON, Canada Sept. 2015
- Department of Finance, East China University of Science and Technology, Shanghai, China Jul. 2015 [Invited by Professor Lixia Qian and Professor Donghua Wang]
- Chinese Economists Society China Conference, Chongqing University, Chongqing, China Jun. 2015
- School of Economics, Beijing Institute of Technology, Beijing, China May. 2015 [Invited by Professor Changqing Li]
- Chinese Economists Society China Conference(CES) , JiNan University, Guangzhou, China Jun. 2014
- Department of Economics, Brock University, St Catharines, ON, Canada, Nov. 2013 [Invited by Professor Ivan Medovikov]
- Chinese Economists Society China Conference, ChengDu, China Jul. 2013
- Chinese Economists Society China Conference, HeNan University, Kaifeng, China Jun. 2012
- Carleton University, Ottawa, Canada, Mar 2012
- University of Western Ontario, London, Canada, Feb. 2012
- Canadian Econometrics Study Group, Toronto, Canada, Oct. 2011
- Econometric Society Australasian Meeting, University of Adelaide, Australia, Jul. 2011
- Chinese Economists Society China Conference, University of International Business and Economics, Beijing, China, Jun. 2011
- University of Toronto, Toronto, Canada, Nov. 2010
- Econometric Society World Congress, Shanghai, China, Aug. 2010
- Chinese Economists Society China Conference, WISE, Xiamen University, China Jun. 2010
- International Symposium on Financial Engineering and Risk Management (FERM), National TaiWan University, TaiWan, China, Jun. 2010
- University of Guelph, Guelph, Canada, Oct. 2009
- Far East and South Asia Meeting of the Econometric Society, University of Tokyo, Japan, Aug. 2009
- Southwestern University of Finance and Economics, ChengDu, China, Jul. 2009.

TEACHING

Formal Classroom Teaching

Undergraduate Courses:

- Time Series Econometrics (Econ 423)
- Econometric Theory (Econ 421)
- Topics in Financial Econometrics (Econ 405)
- Special Topics (Econ 381)
- Microeconometric Analysis (Econ 422)

Graduate Courses:

- Econometrics I (Econ 621)
- Applied Macroceconometrics I and II (Econ 623 and 723)
- Econometrics II (Econ 721)

Graduate Supervision

PhD Supervision

- Sudipto Ghosh (UW-Econ, in Process) 2022 +
- Cheng Wang (BJTU-Econ, Co-Supervisor, in progress), 2022+
- Jing Ding (ECUST-Finance, Co-Supervisor, in progress) 2022+
- Jingru Ji ("Three Essays on Hawkes Process in Finance", Finance, ECUST, 2016 -- 2019, Co-Supervisor, First Placement: Shenyin & Wanguo Securities Co Ltd, Senior Data/Model Analyst, Shanghai, China)
- Xiaoyan (Lisa) Lin ("Three Essays on Financial Modelling with Price Limits", Economics, University of Waterloo, 2008 -- 2015, First Placement: Senior Analyst, Ernst and Young, Toronto)
- Abdullah Almansour ("Essays in Risk Management for Crude Oil Markets", Economics, University of Waterloo, 2008 -- 2012, Co-Supervisor (First and Second Chapters), First Placement: Assistant Professor at King Fahd University of Petroleum and Mineral)

PhD Committee

- Yichun Huang ("The Economics of Water Conservation Regulations in Mining: An Application to Alberta's Lower Athabasca River Region", Economics, University of Waterloo, 2011 -- 2020)
- Abdullah Almansour ("Essays in Risk Management for Crude Oil Markets", Economics, University of Waterloo, 2008 -- 2012)
- JingYe (Becky) Shi ("Time Allocation and the Weather", Economics, University of Waterloo, 2008 -- 2012)

PhD External Examiner

- Rachel Tang (“ KPI Information Acquisition by Analysts: Evidence from Conference Calls”, Accounting and Finance, University of Waterloo, 2021)
- Zhaoyan Tian ("Nonparametric Estimation in a Compound Mixture Model and False Discovery Rate Control with Auxiliary Information", Statistics, University of Waterloo, 2020)
- Galyna Grikiv ("Non-Linear Time-Series Modelling with Applications to Equity and Fixed Income Markets", Economics, University of Western Ontario, 2018)
- Chunlin Wang ("Empirical Likelihood and Bootstrap Inference with Constraints", Statistics, University of Waterloo, 2017)
- Raymond Ren ("Essays in Asset Pricing and Financial Econometrics", Economics and Finance, University of Guelph, 2016)
- Vahed Maroufy ("Applications of Geometry in Optimization and Statistical Estimation", Statistics, University of Waterloo, 2016)
- Zhiyue Huang ("The Generalized Method of Moments for Mixture and Mixed Models", Statistics, University of Waterloo, 2015)
- Hui Hudson Zhao ("Variation Bayesian Learning and its Applications", Statistics, University of Waterloo, 2013)
- Pujun Liu ("Volatility, Duration and Value-at-Risk", Economics, University of Western Ontario, 2012)
- Matthew Charles Till ("Actuarial Inference and Applications of Hidden Markov Models", Statistics, University of Waterloo, 2011)
- Jing Wu ("Essays on Financial Return and Volatility Modelling", Economics, University of Western Ontario, 2011)

Master Supervision

- Tamira Chang, Economics, University of Waterloo, "Prediction of Stock Return Thresholds", 2013.
- Zeyu (Cres) Li, School of Computer Science, University of Waterloo. Co-Supervisor, "Execution Cost Analysis with Realized GARCH Models", 2012.
- Yanchen Liu, Economics, University of Waterloo, "Forecasting Volatility in China's Stock Market", 2009.

Undergraduate Honours Essay Supervision (since being granted tenure)

- Ewen Yu, 2022, Covid-19 and the Canadian Stock Market in 2020
- Jacky Huang, 2022, The Effect of Stock Price Movement on the Property Development Cost of Residential and Non-Residential Properties
- Jaden Josefin , 2021, Profitability of Cointegration Approach of Pairs Trading during COVID-19 in the US Equity Market

- Yining Wang, 2021, The Impact of Margin Trading and Short Selling on Volatility of China Stock Market
- Jiajie Pu (2020), "The Holiday Effect on Returns in Stock Markets of Mainland China 2000-2019".
- Qimeng Fang (2020), "How do maximum daily returns and volatilities influence stock returns in Chinese Shanghai stock market?".
- Yuhui Liu (2019), "The Magnet Effect of Daily Price Limits: Evidence from the Chinese Stock Market".
- Zetian Zhang (2019), "Consistency of MLE and Hypothesis Testing under Mixture Model"
- Claire Chen (2018), "Magnet Effects in North American Stock Market"
- Jingwen Han (2017), "Comparison of predictability of ARIMA and GARCH models for forecasting volatility of crude oil price"
- Siqi Sun (2017), "An Optimized Least Square Monte Carlo Approach for American Option Pricing"
- Sitong Yue (2017), "Momentum based trading strategy application"
- Shimeng Huang (2016), "A Threshold EGARCH Model: Theory and Application"
- Alex Lewandowski (2016), "Exchange Rate Quote Durations under a Markov-Switching"
- Viacheslav Davadiga (2016), "Lead-Lag relationship between futures and spot process for the Russian stock market"
- Dawei Yin (2015), "Volatility Forecasting on NYSE composite index: ARIMA and GARCH"
- Siyu Chen (2015), "Analysis of impact of news from rival companies on the stock daily return and volatility"
- Hanzhe Chen (2014), "Volatility Forecasting During 2008 Financial Crisis Times in North America"
- Zhuo Chen (2013), "Financial Modelling on Chinese Stock Market"

Other relevant teaching information (since being granted tenured)

- New Course Preparation – Econ 322 (Econometric Analysis 1), 2020
- New Course Preparation – Econ 423 (Time Series Econometrics), 2017
- Re-designing Econ 623 and 723 (Applied Macroceconometrics I and II), 2013
- Keynote Speaker of Public Lecture for Econ Society at UW, 2016
- Peer Teaching Reviews (February 2014, March 2015, March 2016)

SERVICE

Departmental

- International Program Chair/Advisor/Committee Member (2014 -- 2018, 2019 -- 2023)
- Associate Chair of Graduate Studies (2018 -- 2019)
- MA, PhD Admission Committee (2008--2012, 2013--2014, 2016—2019, 2021-2022)
- Annual Performance Review Committee (2013 – 2015, 2022-2023)
- Departmental Promotion and Tenure Committee (2021-2023)
- Undergraduate Committee (2014 – 2015, 2021-2022)
- Department Advisory Committee on Appointments (2009 -- 2010, 2011 -- 2012)
- Graduate Studies Committee (2007 – 2011, 2012 – 2013, 2018 – 2019)
- Seminar Committee (2012 – 2013)
- Ph.D Comprehensive Exam Chair/Committee Member -- Econometrics (2007 – 2011, 2013 -- 2015, 2017 – 2019, 2021-2022)
- Peer Teaching Reviews (October 2011, February 2014, March 2015, March 2016)

Faculty/University

- Chair Pool for PhD Exams (Chaired PhD Exams: Computer Science, December 2019; Computer Science, April 2020 [Remote]; School of Public Health and Health Systems, July 2020 [Remote], Psychology, 2022).
- Moderator of University of Waterloo Graduate Student Research Conference (April 2009)
- Local Committee and Moderator of Annual Financial Econometrics Conferences (March 2008, March 2009 and March 2010)

Professional

- Refereeing for *Journal of Econometrics, Journal of Financial Econometrics, Journal of Computational Finance*, *Journal of Operational Risk, Computational Statistics and Data Analysis, Econometric Reviews, Applied Mathematics and Computation, Journal of Applied Statistics, Economics Bulletin, Asia-Pacific Financial Markets, Journal of Economics and Finance, Bulletin of Economic Research, Empirical Economics, International Journal of Finance and Economics, Applied Economics, Economic Modelling.*
- Topical Advisory Panel Member, **Journal of Risk and Financial Management** (2020 – present)
- Refereeing for SSHRC and NSERC (2013 -- 2014)
- Co-organizer of 30th Annual Meeting of the Canadian Econometrics Study Group (CESG), October 2013
- Local Committee of Annual Financial Econometrics Conference at University of Waterloo (2007 -- 2010)

- Research Member at the Waterloo Research Institute in Insurance, Securities and Quantitative Finance (WatRISQ) (2007 -- Present)
- Public Lecture for Econ Society at UW (2016)