

CURRICULUM VITAE

Personal Data

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Birth: May 27, 1981, Qingdao, China
Nationality: Chinese
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Employments

05/2019 – now Professor of Mathematical Statistics and Risk Management
Erasmus School of Economics, Erasmus University Rotterdam
07/2022 – now Quantitative Researcher (20%),
Altas Technologies @ IMC
12/2013 – now Research Fellow, Tinbergen Institute
01/2016 – 04/2019 Associate Professor, Erasmus School of Economics,
Erasmus University Rotterdam
10/2009 – 12/2015 Assistant Professor, Erasmus School of Economics,
Erasmus University Rotterdam
11/2015 – 06/2022 Senior Economist, Economics and Research Division,
De Nederlandsche Bank
09/2008 – 10/2015 Economist, Economics and Research Division, De Nederlandsche Bank

Education

09/2004 – 11/2008
Ph.D. in Economics, Erasmus University Rotterdam, The Netherlands
09/2001 – 07/2003
Master in Probability and Statistics, Peking University, Beijing, China
09/1997 – 07/2001
Bachelor in Probability and Statistics, Peking University, Beijing, China

Research Grant/Awards

1. EUR fellowship on the project “The evolution of tail risks in financial markets”, 150,000 euro, 2016-2019.
2. EUR fellowship on the project “Systemic Risk in the Financial System: Defined, Measured and Assessed”, 200,000 euro, 2010 – 2013.

3. William F. Sharp Best Paper Award, 5th International Finance and Banking Society conference, Nottingham, United Kingdom, June 26-28, 2013.
4. The 2010 EWG-EPA Best Young Researcher Award. EWG-EPA Conference on “Global Trends in the Efficiency and Risk Management of Financial Services”, Chania, Greece, July 2-4, 2010.

Professional activities

Editorial duty

Area Editor of *Extremes*, 2020-
Associate Editor of *Extremes*, 2015-

Scientific program committees

13th Extreme Value Analysis conference, 2023
12th Extreme Value Analysis conference, 2021
10th Extreme Value Analysis conference, 2017
7th International Finance and Banking Society conference, 2015
6th International Finance and Banking Society conference, 2014
16th European Young Statistician Meeting, 2008

Organizing committees

Extreme Value Theory and Applications seminar series (jointly with Yi He, Juan-Juan Cai and John Einmahl)
10th Extreme Value Analysis conference, 2017

Publications

1. Chen, L., Li, D. and Zhou, C. (2024+) Distributed inference for tail risks. *Statistica Sinica*, accepted.
2. Einmahl, J. and Zhou, C. (2024) Tail copula estimation for heteroscedastic extremes. *Econometrics and Statistics*, accepted.
3. Kiriliouk, A. and Zhou, C. (2024) Tail risk analysis for financial time series. In: Handbook on Statistics of Extremes. Edited by de Carvalho, M., Huser, R, Naveau, P. and Reich, B., Chapman & Hall/CRC.
4. Aghbalou, A., Portier, F., Sabourin, A. and Zhou, C. (2024) Tail Inverse Regression: dimension reduction for prediction of extremes. *Bernoulli*, **30**(1), 503-533.
5. Menkveld et al. (Zhou, C. among 343 co-authors) (2024) Non-standard Errors, *Journal of Finance*, **79**(3), 2339-2390
6. de Haan, L. and Zhou, C. (2024) Bootstrapping Extreme Value Estimators. *Journal of the American Statistical Association*, **119**(545), 382-393.
7. Ahmed, H. and Einmahl, J. and Zhou, C. (2023) Extreme value statistics in semi-supervised models. *Journal of the American Statistical Association*, accepted.
8. Oorschot, J., Segers, J., & Zhou, C. (2023) Tail inference using extreme U-statistics. *Electronic Journal of Statistics*, **17**(1), 1113-1159.
9. Cui, H., Fan, Y., Tan, K.S. and Zhou, C. (2022) Asymptotic analysis of portfolio diversification. *Insurance: Mathematics and Economics*, **106**, 302-325.

10. Chen, L., Li, D. and Zhou, C. (2022) Adapting the Hill estimator to distributed inference: dealing with the bias. *Extremes*, **25**, 389-416.
11. Einmahl, J., Ferreira, A., de Haan, L., Neves, C. and Zhou, C. (2022) Spatial dependence and space-time trend in extreme events. *Annals of Statistics*, **50**(1), 30-52.
12. Oorschot, J. and Zhou, C. (2022) Tail dependence of OLS. *Econometric Theory*, **38**(2), 273-300
13. Chen, L., Li, D. and Zhou, C. (2022) Distributed inference for extreme value index. *Biometrika*, **109**(1), 257-264.
14. Qin, X. and Zhou C. (2021) Systemic risk allocation using the asymptotic marginal expected shortfall. *Journal of Banking and Finance*, **126**, 106099.
15. Nolde N. and Zhou C. (2021) Extreme value analysis for financial risk management. *Annual Review of Statistics and Its Application*, **8**, 217-240.
16. Bücher A. and Zhou, C. (2021) A horse race between the block maxima method and the peak-over-threshold approach. *Statistical Science*, **36**(3), 360-378.
17. Einmahl, J., Yang, F. and Zhou, C. (2021) Testing the multivariate regular variation model. *Journal of Business and Economic Statistics*, **39**, 907-919.
18. de Haan, L. and Zhou, C. (2021) Trend in extreme value indices, *Journal of the American Statistical Association*, **116**(535), 1265-1279.
19. Zhou, C. (2019) Book review: Risk Theory: A Heavy Tail Approach. *Journal of the American Statistical Association*, **114**(527), 1424-1425.
20. Zhou C. (2020) Discussion on ‘Graphical models for extremes’ by Sebastian Engelke and Adrien Hitz. *Journal of the Royal Statistical Society, Series B*, **82**(4), 928.
21. van Oordt, M.R.C. and Zhou, C. (2019) Systemic Risk and Bank Business Models. *Journal of Applied Econometrics*, **34**(3), 365-384.
22. van Oordt, M.R.C. and Zhou, C. (2019) Estimating systematic risk under extremely adverse market conditions. *Journal of Financial Econometrics*, **17**(3), 432-461.
23. Leng, X., Peng, L., Wang, X. and Zhou, C. (2019) Endpoint estimation for observations with normal measurement errors. *Extremes*, **22**(1), 77-96.
24. Xiao, X. and Zhou, C. (2018) The decomposition of jump risks in individual stock returns. *Journal of Empirical Finance*, **47**, 207-228.
25. Zhou, C. (2018) Discussion on “Human life is unlimited - but short” by Holger Rootzen and Dmitrii Zholud. *Extremes*, **21**(3), 405-410.
26. Galati, G., Gorge, Z., Moessner, R. and Zhou, C. (2018) Deflation risk in the euro area and central bank credibility. *Economics Letters*, **167**, 124-126.
27. Oesting, M., Schlather, M. and Zhou, C. (2018) Exact and fast simulation of max-stable processes on a compact set using the normalized spectral representation. *Bernoulli*, **24**(2), 1497-1530.
28. van Oordt, M.R.C. and Zhou, C. (2018) Systemic risk of European banks: regulators and markets. In: *Macroprudential Policy and Practice*, 205-224, Edited by P. Mizen, M. Rubio and P. Turner. Cambridge University Press.
29. Zhou, C. (2017) Discussion on “Elicitability and backtesting: Perspectives for banking regulation”. *Annals of Applied Statistics*, **11**(4), 1888-1893.
30. Zhou, C. (2017) Book review: quantitative risk management: concepts, techniques and tools. *Extremes*, **20**, 489-491.

31. de Haan, L., Mercadier, C. and Zhou, C. (2016) Adapting extreme value statistics to financial time series: dealing with bias and serial dependence. *Finance and Stochastics*, **20**(2), 321-354.
32. Einmahl, J., de Haan, L. and Zhou, C. (2016) Statistics of heteroskastic extremes. *Journal of the Royal Statistical Society, Series B*, **78**(1), 31-51.
33. van Oordt, M.R.C. and Zhou, C. (2016) Systematic tail risk, *Journal of Financial and Quantitative Analysis*, **51**(2), 685-705.
34. Cai, J., Einmahl, J., de Haan, L. and Zhou, C. (2015) Estimation of the marginal expected shortfall: the mean when a related variable is extreme. *Journal of the Royal Statistical Society, Series B*, **77**(2), 417-442.
35. Sun, P. and Zhou, C. (2014) Diagnosing the Distribution of GARCH Innovations. *Journal of Empirical Finance*, **29**, 287-303.
36. Zhou, C. (2013) The impact of imposing capital requirement on systemic risk. *Journal of Financial Stability*, **9**(3), 320-329.
37. de Haan, L., de Vries, C.G. and Zhou, C. (2013) The number of active bidders in internet auctions. *Journal of Economic Theory*, **148**(4), 1726-1736.
38. Cai, J., de Haan, L. and Zhou, C. (2012) Bias correction in extreme value statistics with index around zero. *Extremes*, **16**(2), 173-201.
39. van Oordt, M.R.C. and Zhou, C. (2012) The simple econometrics of tail dependence. *Economics Letter*, **116**(3), 371-373.
40. Huurman, C., Ravazzolo, F. and Zhou, C. (2012) The power of weather. *Computational Statistics and Data Analysis*, **56**(11), 3793-3807.
41. de Haan, L., Ferreira, A. and Zhou, C. (2012) Exceedance probability of the integral of a stochastic process. *Journal of Multivariate Analysis*, **105**(1), 241-257.
42. de Haan, L. and Zhou, C. (2011) Extreme residual dependence for random vectors and processes. *Advances in Applied Probability*, **43**(1), 217-242.
43. Galati, G., Poelhekke, S. and Zhou, C. (2011) Did the crisis affect inflation expectations? *International Journal of Central Banking*, **7**(1), 167-208.
44. Zhou, C. (2010) Are banks too big to fail? Measuring systemic importance of financial institutions. *International Journal of Central Banking*, **6**(4), 205-250.
45. Zhou, C. (2010) Dependence structure of risk factors and diversification effects. *Insurance: Mathematics and Economics*, **46**(3), 531-540.
46. Zhou, C. (2010) The extent of the maximum likelihood estimator for the extreme value index. *Journal of Multivariate Analysis*, **101**(4), 971-983.
47. de Haan, L., de Vries, C.G. and Zhou, C. (2009) The expected payoff to Internet auctions, *Extremes*, **12**(3), 219-238.
48. Zhou, C. (2009) Existence and consistency of the maximum likelihood estimator for the extreme value index, *Journal of Multivariate Analysis*, **100**(4), 794-815.
49. Zhou, C. (2008) A 2-step estimator of the extreme value index, *Extremes*, **11**(3), 281-302.
47. Buishand, A., de Haan, L. and Zhou, C. (2008) On spatial extremes: with application to a rainfall problem, *Annals of Applied Statistics*, **2**(2), 624-642.
48. de Haan L. and Zhou, C. (2008) On extreme value analysis of a spatial process. *Revstat*, **6**(1), 71-81.
49. de Vries, C.G. and Zhou, C. (2006) Discussion of "Copulas: Tales and facts", by Thomas Mikosch. *Extremes*, **9**, 23-25.

Policy publications

Zhou C. and Tarashev N. (2013) Looking at the tail: price-based measure of systemic importance. *BIS Quarterly Review*, June 2013. Bank for International Settlement.

Public opinion and media attention

1. Danielsson, J. and Zhou, C. Why risk is hard to measure? *VoXEU*, April 25, 2015. Based on the working paper “Why risk is so hard to measure?”
2. Tracy Alloway ‘Capital requirements increase systemic risk’ Discuss. *Financial Times Alphaville*, Aug 6, 2010. Based on the working paper “Why the micro-prudential regulation fails?”

Working Papers

1. Chen L. and Zhou, C. (2024) High dimensional inference for extreme value indices. <https://arxiv.org/abs/2407.20491>.
2. Wan, P. and Zhou, C. (2023) Graphical Lasso for Extremes. <https://arxiv.org/abs/2307.15004>.
3. Nolde, N., Zhou, C. and Zhou, M. (2022) An extreme value approach to CoVaR estimation. <https://arxiv.org/abs/2201.00892>.
4. Kiriliouk, A. and Zhou, C. (2022) Estimating probabilities of multivariate failure sets based on pairwise tail dependence coefficients. <https://arxiv.org/abs/2210.12618>.
5. Oorschot, J. and Zhou, C. (2020) All Block Maxima method for estimating the extreme value index. <https://arxiv.org/abs/2010.15950>.
6. Schindelhauer, K. and Zhou, C. (2018) *Value-at-Risk prediction using option-implied risk measures*. DNB Working Paper, No. 613.

Other Non-published Papers

1. de Haan, J., Jin, Z. and Zhou, C. (2019) *Micro-prudential regulation and banks' systemic risk*. DNB Working Paper No. 656.
2. Heijmans, R. and Zhou, C. (2019) *Outlier detection in TARGET2 risk indicators*. DNB Working Paper No. 624.
3. Muns, S. and Zhou, C. (2016) *The impact of bank size, capital structure and asset dependence on social welfare*. Working paper.
4. Xiao, X. and Zhou, C. (2016) *Entropy-based implied volatility and its information content*. DNB Working Paper No. 581.
5. Danielsson, J. and Zhou, C. (2015) *Why risk is so hard to measure?* DNB Working Paper No. 494.
6. Moore, K., Sun, P., de Vries, C.G. and Zhou, C. (2013) *The Cross-Section of Tail Risks in Stock Returns*. Working paper.
7. Moore, K. and Zhou, C. (2012) *“Too big to fail” or “Too non-traditional to fail”? The determinants of banks' systemic importance*. DNB Working Paper No. 347.
8. Galati, G. Lewis, J., Poelhekke, S. and Zhou, C. (2011) *Have market views on the sustainability of fiscal burdens influenced monetary authorities' credibility?* DNB Working Paper No. 304.
9. Garita, G. and Zhou, C. (2009) *Can open capital markets help avoid currency crises?* DNB Working Paper No. 205.

Presentations at conferences/workshops/seminars (in last two years)

1. (scheduled) Invited talk, ISI World Statistics Congress 2025, Den Haag, The Netherlands, Oct 5-9, 2025.
2. (scheduled) Invited talk, 14th Extreme Value Analysis Conference, Chapel Hill, United States, June 23-27, 2025.
3. Invited seminar, University of Geneva, Geneva, Nov 28, 2024.
4. Invited seminar, University of Lausanne, Lausanne, Nov 22, 2024.
5. Invited seminar, ETH Zurich, Zurich, Switzerland, Nov 14, 2024.
6. Invited talk, Workshop on Mathematics, Statistics, and Geometry of Extreme Events in High Dimensions, Oberwolfach, Germany, Aug 18-23, 2024.
7. Invited talk, SAM 2024, Salzburg, Austria, July 9-10, 2024.
8. Invited seminar, Toulouse School of Economics, Toulouse, France, May 30, 2024.
9. Invited talk, ICCF 2024, Amsterdam, The Netherlands, April 2-5, 2024.
10. Special invited talk, CMStatistics 2023 Conference, Berlin, Germany, Dec 16-18, 2023.
11. Invited keynote talk, Statistics Workshop KAUST, Saudi Arabia, Nov 9, 2023.
12. Invited seminar, University of Mannheim, Sept 20, 2023.
13. Invited keynote talk, DEMO2023, Agistri, Greece, Sept 13, 2023.
14. Invited talk, Fens, Forests and Formulas Workshop, Oisterwijk, The Netherlands, Sept 6, 2023.
15. Invited seminar Fudan University, Shanghai, China, Sept 1, 2023.
16. Invited talk, 13th Extreme Value Analysis Conference, Milan, Italy, June 26-30, 2023
17. Invited talk, NORDSTAT conference, Gothenburg, Sweden, June 20, 2023.
18. Invited seminar, TU Delft, Delft, The Netherlands, May 1, 2023.
19. Invited seminar, Bocconi University, Milan, Italy, April 26, 2023.

Inaugural Lecture

Zhou, C. (2022). A tale of risk. Erasmus Research Institute of Management (ERIM). Inaugural Addresses Research in Management Series Vol. 083. Lecture delivered on May 18, 2022.

Teaching

Graduate courses

Quantitative Risk Management, ESE, Erasmus University Rotterdam
Market and systemic risk management, Tinbergen Institute
Estimation and testing under sparsity, Tinbergen Institute
Statistics, Tinbergen Institute

Undergraduate courses

Markov Processes, Probability Theory, Statistics

Executive course and other mini courses

Executive course on Statistics for Data Science and Business Analytics, ESE, EUR
Mini course (4 hour) on Extreme Value Statistics: from classics to recent advances, PhD School, University of Geneva

Mini course (4 hour) on extreme value analysis in finance, PhD School, University of Copenhagen

Mini course (4 hour) on tail empirical and tail quantile processes, PhD tutorial at the 13th Extreme Value Analysis conference

Mini course (4 hour) on Climate Catastrophe: an Extreme Value Approach, ESE, EUR

Mini course (4 hour) on extreme value analysis, Norges Bank

Doctoral students

Graduated (as co-promoter, co-supervised with Prof. dr. Casper de Vries)

Maarten van Oordt (Oct 2013, first job placement: Bank of The Netherlands; second job placement: Bank of Canada; current placement: Vrije University of Amsterdam)

Pengfei Sun (Oct 2013, first job placement: Deutsche Bank)

Kyle Moore (Oct 2013, first job placement: London School of Economics)

Sander Muns (Jan 2016, first job placement: Central Planning Bureau)

Xiao Xiao (Feb 2017, first job placement: Erasmus University Rotterdam; second job placement: University of Amsterdam; current job placement: University of Cambridge)

Graduated (as promoter)

Jens Klooster (Jan 2025, first job placement: University of Groningen)

Hanan Ahmed (June 2022, first job placement: Rabobank)

Jochem Oorschot (Sept 2022, first job placement: PGGM)

Upcoming

Aishameriane Schmidt (expected 2025)

Department service activities

Academic director of Master program in Quantitative Finance, 2021 – now

Member of the Council for the Appointments and Promotions, 2023 – now

Chair (previously Member) of the Examination board, Tinbergen Institute, 2020 – now

Member of the Research Advisory Committee, Erasmus School of Economics, 2019 – 2024

Member of the Examination board, Erasmus School of Economics, 2019 – 2023