

Peng Shi

Wisconsin School of Business
Risk and Insurance Department
University of Wisconsin-Madison
Phone: 608-263-4745
Email: pshi@bus.wisc.edu
Webpage: <https://sites.google.com/a/wisc.edu/peng-shi/>

975 University Avenue
Grainger Hall 5281
Madison, WI 53706

EDUCATION

- Ph.D. School of Business, University of Wisconsin-Madison, WI, USA, 2009
Major Area: Actuarial Science, Risk Management, and Insurance
Minor Area: Economics
Dissertation Title: "Long-tail longitudinal modeling of insurance company expenses."
Advisor: Edward W. (Jed) Frees
- M.S. School of Economics and Management, BeiHang University, Beijing, P. R. China, 2005
Major Area: Quantitative Risk Management
- B.S. School of Economics and Management, BeiHang University, Beijing, P. R. China, 2002
Major Area: Finance & Insurance
- A.S.A Associate of Society of Actuaries, April 2005

ACADEMIC POSITIONS

- 07/2017 – current Charles & Laura Albright Professor of Business and Finance
07/2017 – current Associate Professor, Risk and Insurance Department, Wisconsin School of Business, University of Wisconsin-Madison
- 05/2013 – 06/2017 Assistant Professor, Risk and Insurance Department, Wisconsin School of Business, University of Wisconsin-Madison
- 08/2009 – 04/2013 Assistant Professor, Division of Statistics, Northern Illinois University

HONORS AND AWARDS

- 2018, Winner of 2018 Young Researchers Competition, Casualty Actuarial Society. The paper co-authored with K. Shi "Territorial risk classification using spatially dependent frequency-severity models" is published in *ASTIN Bulletin*.
- 2016 – 2017, Wisconsin Naming Partners Fellow, Wisconsin School of Business, University of Wisconsin-Madison, for active teaching, research, and services for the Wisconsin School of Business.
- 2016, Erwin A. Gaumnitz Research Award (Junior Faculty), Wisconsin School of Business, University of Wisconsin-Madison, for excellence in research for tenure-track faculty in a

given year.

- 2014, Ronald Bornhuetter Loss Reserve Prize (with B.M. Hartman), Casualty Actuarial Society, for the best paper in the stochastic loss reserving literature in a given year. The paper “Credibility in loss reserving” is published in *North American Actuarial Journal*.
- 2010, Charles A. Hachemeister Prize (with E.W. Frees, E.A. Valdez), Casualty Actuarial Society, for the best paper published by the International Actuarial Association in a given year. The paper “Actuarial applications of a hierarchical insurance claims model” is published in *ASTIN Bulletin*.

RESEARCH INTERESTS

Predictive modeling, Multivariate analysis, Longitudinal data, Insurance economics

RESEARCH PUBLICATIONS

Refereed Journal Articles:

- [1] Shi, P., Yang, L. Pair copula constructions insurance experience rating, *Journal of American Statistical Association*, forthcoming.
- [2] Shi, P. (2017) A multivariate analysis of intercompany loss triangles, *Journal of Risk and Insurance*, 84 (2), 717-737.
- [3] Shi, P., Shi, K. (2017) Territorial risk classification using spatially dependent frequency-severity models. *ASTIN Bulletin*, 47 (2), pp. 437-465. Winner of the 2018 Young Researchers Competition by the Casualty Actuarial Society.
- [4] Shi, P., Feng, X., Boucher, J.P. (2016) Multilevel modeling of insurance claims using copulas. *Annals of Applied Statistics*, 10 (2) pp. 834-863.
- [5] Shi, P., Zhang, W. (2016) A test of asymmetric learning in competitive insurance with partial information sharing, *Journal of Risk and Insurance*, 83 (3), 557-578.
- [6] Shi, P., Hartman, B.M. (2016) Credibility in loss reserving, *North American Actuarial Journal*, 20 (2) pp. 114-132. Awarded the 2014 Ronald Bornhuetter Loss Reserve Prize by the Casualty Actuarial Society.
- [7] Sriram, K., Shi, P., Ghosh. P. (2016) A Bayesian quantile regression model for insurance company costs data, *Journal of Royal Statistical Society: Series A (Statistics in Society)*, 179 (1) pp. 177-202.
- [8] Shi, P. (2016) Insurance ratemaking using a copula-based multivariate Tweedie model, *Scandinavian Actuarial Journal*, 2016 (3), pp. 198-215.
- [9] Shi, P., Feng, X., Ivantsova, A. (2015) Dependent frequency-severity modeling of insurance claims, *Insurance: Mathematics and Economics*, 64 (1), pp. 417-428.
- [10] Shi, P., Zhang, W. (2015) Private information in health care utilization: specification of a copula-based hurdle model, *Journal of Royal Statistical Society: Series A (Statistics in Society)*, 178 (2), pp. 337-361.
- [11] Shi, P. (2014) A copula regression for modeling multivariate loss triangles and quantifying reserving variability, *ASTIN Bulletin*, 44 (1), pp. 85-102.

- [12] Shi, P., Valdez, E.A., (2014) Multivariate negative binomial models for insurance claim counts, *Insurance: Mathematics and Economics*, 55 (1), pp. 18-29.
- [13] Shi, P., Valdez, E.A., (2014) Longitudinal modeling of insurance claim counts using jitters, *Scandinavian Actuarial Journal*, 2014 (2), pp. 159-179.
- [14] Shi, P., Zhang, W. (2013) Managed care and health care utilization: specification of bivariate models using copulas, *North American Actuarial Journal*, 17 (4), pp. 306-324.
- [15] Shi, P., Zhang, W., Valdez, E.A., (2012) Testing adverse selection with two-dimensional information: evidence from the Singapore auto insurance market, *Journal of Risk and Insurance*, 79 (4), pp. 1077-1114.
- [16] Shi, P. (2012) Multivariate longitudinal modeling of insurance company expenses, *Insurance: Mathematics and Economics*, 51 (1), pp. 204-215.
- [17] Shi, P., Sanjib, B., Meyers, G. (2012) A Bayesian log-normal model for multivariate loss reserving (with Discussion), *North American Actuarial Journal*, 16 (1), pp. 29-51.
- [18] Shi, P., Frees, E.W. (2011) Dependent loss reserving using copulas, *ASTIN Bulletin*, 41(2), pp. 449-486.
- [19] Shi, P., Valdez, E.A. (2011) A copula approach to test asymmetric information with applications to predictive modeling, *Insurance: Mathematics and Economics*, 49 (2), pp. 226-239.
- [20] Shi, P., Frees, E.W. (2010) Long-tail longitudinal modeling of insurance company expenses, *Insurance: Mathematics and Economics*, 47 (3), pp. 303-314.
- [21] Frees, E.W., Shi, P., Valdez, E.A. (2009) Actuarial applications of a hierarchical insurance claims model, *ASTIN Bulletin*, 39 (1), pp. 165-197. Awarded the 2010 Charles A. Hachemeister Prize by the Casualty Actuarial Society.

Refereed Book Chapters:

- [22] Shi, P., Guszczka, J. (2016) Frameworks for General Insurance Ratemaking: Beyond the Generalized Linear Model, in *Predictive Modeling Applications in Actuarial Science: Volume II, Case Studies in Insurance*, edited by E.W. Frees, G.G. Meyers, R. Derrig, Cambridge University Press, pp. 100-125.
- [23] Antonio, K., Shi, P., Berkum, F.V. (2014) Longitudinal Data and Experience Rating, in *Computational Actuarial Science with R*, edited by A. Charpentier, Chapman & Hall/CRC Press, pp. 511-542.
- [24] Shi, P. (2014) Fat-tailed Regression Models, in *Predictive Modeling Applications in Actuarial Science: Volume I, Predictive Modeling Techniques*, edited by E.W. Frees, G.G. Meyers, R. Derrig, Cambridge University Press, pp. 236-259.

Non-refereed Publications:

- [25] Meyers, G., Shi, P. (2011) The retrospective testing of stochastic loss reserve models, *CAS E-Forum*
- [26] Shinichi, K., Shi, P., Schmit, J., Rosenberg, M. (2007). An analysis of risk management terminology, *The Actuary*, 4(6), pp. 33-41.
- [27] Shinichi, K., Shi, P., Schmit, J., Rosenberg, M. (2007) Risk Management Terms, *Society of*

Actuaries.

RESEARCH IN PROGRESS

Submitted Papers:

- Frees, E.W., Shi, P. Credibility prediction using collateral information, Submitted to *Variance*.
- Shi, P., Zhang, W., Boucher, J.P. Dynamic moral hazard: a longitudinal examination of automobile insurance in Canada. Submitted to *Journal of Risk and Insurance*.

On-going Projects:

- Bivariate dynamic panel data modeling with attrition bias: an examination of asymmetric information in automobile insurance, with Zhang, W.
- Multi-peril ratemaking in non-life insurance using longitudinal data, with Yang, L.

GRANTS AND RESEARCH SUPPORT

- 2015-2020, Society of Actuaries, \$477,088. Project title: Insurance analytics: from data analysis to decision making. I am the principal investigator; Jed Frees and Margie Rosenberg are co-investigators.
- 2015-2016, Wisconsin Alumni Research Foundation, \$24,625. Project title: Asymmetric information in repeated contracting: an empirical examination in automobile insurance. I am the principal investigator.
- 2014-2015, Wisconsin Alumni Research Foundation, \$30,500. Project title: Multivariate multilevel two-part models for auto insurance ratemaking. I am the principal investigator.
- 2013-2014, Verisk Analytics, \$90,390. Project title: Credibility and collateral information with generalized linear models. Jed Frees is the principal investigator; I am the co-investigator.
- 2013-2014, The Actuarial Foundation, \$15,330. Project title: A multivariate analysis of intercompany loss triangles. I am the principal investigator.
- 2011-2012, The Actuarial Foundation and Society of Actuaries, \$22,000. Title: Two-sided moral hazard and optimal payment mechanism in health care. Zhang Wei is the principal investigator; I am the co-principal investigator.
- 2011, Northern Illinois University Research & Artistry Grant, \$5,500. Project title: Stochastic multivariate claims reserving in insurance. I am the principal investigator.

RESEARCH PRESENTATIONS

- 2017** Invited Speaker, University of Iowa
Invited Speaker, University of Nebraska-Lincoln
Invited Speaker, Casualty Actuarial Society Annual Meeting
- 2016** Invited Speaker, The 9th International Conference of the ERCIM WG on Computational and Methodological Statistics
Invited Speaker, Brigham Young University
Invited Speaker, Joint Statistical Meetings
Invited Speaker, The 44th Annual Meeting of the Statistical Society of Canada

- Invited Speaker, Casualty Actuarial Society Ratemaking and Product Management Seminar
 Contributed Speaker, The 51th Actuarial Research Conference
 Contributed Speaker, The 20th International Congress on Insurance: Mathematics and Economics
- Invited Speaker, Casualty Actuarial Society Spring Meeting
- 2015** Invited Speaker, Casualty Actuarial Society Ratemaking and Product Management Seminar
 Invited Speaker, University of Connecticut
 Invited Speaker, The Fifth International IME-FIPS Workshop
 Contributed Speaker, The 50th Actuarial Research Conference
- 2014** Invited Speaker, Casualty Actuarial Society Ratemaking and Product Management Seminar
- 2013** Invited Speaker, Faculty of Economics and Business, University of Amsterdam
 Invited Speaker, Predictive Modeling Breakout Session, ASTIN Colloquium
 Invited Speaker, Wisconsin School of Business, University of Wisconsin-Madison
 Invited Speaker, University of Connecticut
 Contributed Speaker, The 48th Actuarial Research Conference
 Invited Speaker, Casualty Actuarial Society Ratemaking and Product Management Seminar
- 2012** Invited Speaker, University of Illinois at Chicago
 Contributed Speaker, The 47th Actuarial Research Conference
- 2011** Invited Speaker, CNA
 Invited Speaker, Department of Economics, Northern Illinois University
 Invited Speaker, University of Connecticut
 Contributed Speaker, The American Risk and Insurance Association Annual Meeting
 Contributed Speaker, The 46th Actuarial Research Conference
- 2010** Invited Speaker, Annual Meeting of Casualty Actuarial Society
 Invited Speaker, Casualty Actuarial Society Ratemaking and Product Management Seminar
 Contributed Speaker, The 14th International Congress on Insurance: Mathematics and Economics
- 2009** Invited Speaker, Drake University
 Invited Speaker, Division of Statistics, Northern Illinois University
 Contributed Speaker, The 44th Actuarial Research Conference
- 2007** Invited Speaker, The 9th Bowles Symposium: The ERM Research Track

TEACHING

- Loss Models II (BBA), University of Wisconsin-Madison
- Loss Models I (BBA), University of Wisconsin-Madison
- Regression and Time Series Analysis (BBA), University of Wisconsin-Madison
- Applied Longitudinal Data Analysis (MS, PhD), Northern Illinois University
- Life Contingency and Payment Method II (BS, MS), Northern Illinois University
- Life Contingency and Payment Method I (BS, MS), Northern Illinois University
- Probability Foundations in Actuarial Science (BS, MS), Northern Illinois University
- Theory of Interest and Financial Derivatives (BS, MS), Northern Illinois University

SERVICE AND ADVISING

Dissertation Committee

- Nii-Armah Okine, Co-Advisor, PhD, University of Wisconsin (Risk and Insurance), expected 2019
- Anastasia Ivantsova, Committee Member, PhD, University of Wisconsin (Risk and Insurance), expected 2018
- Zifeng Zhao, Committee Member, PhD, University of Wisconsin (Statistics), expected 2017
- Doug Bujakowski, Committee Member, PhD, University of Wisconsin (Risk and Insurance), 2017
- Gee Lee, Committee Member, PhD, University of Wisconsin (Risk and Insurance), 2017
- Lu Yang, Committee Member, PhD, University of Wisconsin (Statistics), 2017
- Xiaoping Feng, Committee Member, PhD, University of Wisconsin (Statistics), 2016
- Els Godecharle, Committee Member, PhD, Katholieke Universiteit Leuven (Insurance), 2016
- Xiaoli Jin, Committee Member, PhD, University of Wisconsin (Risk and Insurance), 2014
- Qian Dong, Committee Member, PhD, Northern Illinois University (Statistics), 2013
- Nicholas Syring, Committee Chair, MS, Northern Illinois University (Statistics), 2012
- Yu Li, Committee Member, MS, Northern Illinois University (Statistics), 2010
- Tianyu Li, Committee Member, MS, Northern Illinois University (Statistics), 2010

Internal Service Activities

- PhD and Research Committee, Wisconsin School of Business, UW-Madison, 2016 – current
- BBA Curriculum Committee, Wisconsin School of Business, UW-Madison, 2015 – 2016
- Risk and Insurance Department Seminar Coordinator, UW-Madison, 2013 - 2015
- Actuarial Program Development Committee, Northern Illinois University, 2011-2013
- Grade Review Panel, Northern Illinois University, 2011-2013

External Service Activities

- Editorial Service
Editorial Board, Dependence Modeling, 2018 - 2020
- Referee Activities: North America Actuarial Journal, Insurance: Mathematics and Economics, Annuals of Actuarial Science, ASTIN Bulletin, Scandinavian Actuarial Journal, European Actuarial Journal, Electronic Journal of Statistics, Communications in Statistics – Theory and Methods, Variance, Journal of Econometrics, Journal of Risk and Insurance, Journal of Royal Statistical Society, Empirical Economics, Biometrics
- Project Oversight Group, Society of Actuaries, 2011, 2016
- Prepare loss reserve data from NAIC Schedule P (with Glenn Meyers), available at website of Casualty Actuarial Society, 2011

PROFESSIONAL MEMBERSHIP

- Casualty Actuarial Society, 2013 – present

- American Risk and Insurance Association, 2011 – present
- Society of Actuaries, 2005 - present