Daniël Linders

Personalia

Date of birth **April 18, 1985**.
Nationality **Belgian**.
Website **www.daniellinders.com**.

Education

2016 **Certificate in Quantitative Finance (CQF)**, *FitchLearning, London*.

2009 - 2013 **Doctoral Program in Business Economics**, *KU Leuven*.
Thesis: Measuring herd behavior in financial markets
Committee: prof. Jan Dhaene (adviser), prof. Katrien Antonio, dr. Xinlian Chen, prof. Griselda Deelstra, dr. Florence Guillaume, prof. Alexander Kukush, prof. Wim Schoutens, prof. David Vyncke.

2008 - 2009 **Master of Financial and Actuarial Engineering**, *KU Leuven*.

2007 - 2008 **Master in de Verzekeringen**, *KU Leuven*.

2003 - 2007 **Master of Science in Mathematics**, *KU Leuven*.

Current academic positions

Since 1/9/2019. **Assistant Professor**, *University of Amsterdam (Netherlands)*, Amsterdam School of Economics.
Actuarial Science and Mathematical Finance research group

Since -1/9/2014 **Visiting lecturer**, *KU Leuven (Belgium)*.
Visiting lecturer in the department of Accountancy, Finance and Insurance

Past academic experience

1/9/2017- 1/9/2020 **Assistant Professor**, *University of Illinois at Urbana-Champaign (USA)*, Department of Mathematics.
Member of the Actuarial Science Group

1/9/2016- 31/8/2017 **Postdoctoral Researcher**, *TU Munich (Germany)*, Department of Mathematics.
Member of the Chair of Mathematical Finance

1/9/2014- 1/9/2017 **Visiting lecturer**, *University of Antwerp (Belgium)*, Part time (15%).
Visiting lecturer in the department of Mathematics and Computer Science

1/9/2015- 1/9/2016 **Postdoctoral Researcher**, *University of Amsterdam (The Netherlands)*.
Member of the Actuarial Science and Mathematical Finance research group

1/9/2013-1/9/2017 **Postdoctoral Researcher**, *KU Leuven (Belgium)*, AFI Department.
Member of the Insurance research group

1/9/2014-1/9/2015 **Visiting lecturer**, *Université Libre de Bruxelles (Belgium)*.
Visiting lecturer in the department of Mathematics

1/9/2009-1/9/2013 **Teaching and Research Assistant**, *KU Leuven (Belgium)*.
Member of the Insurance research group

Work experience

March 2008-May 2009 **Dexia Insurance Belgium**.
Modeling of life insurance portfolios in Prophet

October 2007-December 2007 **Dexia Bank Belgium**.
Working on the credit structuring and trading desk.

Experience as consultant

December 2016 **VNG (Association for Dutch communes), Netherlands**.
Consultant for the group *Risk Management for the Public Domain*.

May 2013 **CM, Belgium**.
Actuariële studie CM hospitaalplan

February 2013 **Infact, Belgium**.
Regression models based on log-incremental payments

August 2012 **AG Insurance, Belgium**.
Description and justification of the ICRFS methodology

Workshops

March 2020 **Workshop**, *St. Petersburg Spring School in Risk Management, Insurance, and Finance*, March 2-4, 2020.
Measuring implied dependence

November 2016 **Workshop**, *Nankai University, China*, November 3, 2016.
Pricing multivariate derivatives

Academic services

Since 2021 **Topics editor**, *Mathematics*.

2022 **Member of the organizing committee**, *2022 Actuarial Research Conference*, Champaign-Urbana, 3-5 August..

2021 **Special issue editor**, *Risks*, Co-editors: Alfred Chong and Jan Dhaene.
Special Issue 'Quantitative Risk Measurement and Management'

2021/22 **Chair of the scientific committee**, *Risk Analytics Mini-Symposium*, Champaign - Urbana.
With Alfred Chong.

2019 **Chair of the scientific committee**, *Risk Analytics Mini-Symposium*, May 16, Chicago.
With Alfred Chong, Mark Vonnahme, Runhuan Feng.

2017 **Member of the scientific committee**, *Innovations in Insurance, Risk- and Asset Management*, April 5-7, Munich.
With Kathrin Glau, Aleksey Min, Matthias Scherer, Lorenz Schneider, Rudi Zagst.

2014 **Member of the organizing committee**, *Recent Developments in Dependence Modeling with applications in finance and insurance*, May 23, Brussels.
With Jan Dhaene, Steven Vanduffel, Yao Jing.

2014 **Referee activities**, *Astin Bulletin, Dependence Modeling, Mathematics, Review of Derivatives Research, Quantitative Finance, Scandinavian Actuarial Journal, Insurance: Mathematics & Economic, Journal of Computational and Applied Mathematics, International Journal of Theoretical and Applied Finance.*

Academic Grants

September 2021 **KU Leuven Internal Funds** , *KU Leuven Global PhD Partnerships with Peking University*, Co-PI, Together with Jan Dhaene (KU Leuven) and Jingping Yang (Peking University) .
Implied measurement of co-movement between asset prices.

September 2021 **KU Leuven Internal Funds** , *C1 research project*, Co-PI, Together with Wim Schoutens (PI), Jan Dhaene and Jan de Spiegeleer .
Theoretical and practical aspects of advanced risk analytics in dynamic insurance and finance environment.

January 2019 **TIAA Institute** , *2018 TIAA Institute Request for Research Proposals (30000 USD)*, PI, Together with Servaas van Bilsen (Co-PI) (University of Amsterdam).
Optimal Variable Annuity Design

December 2018 **Society of Actuaries** , *2018 CAE Grant Competition (110000 USD)*, Co-PI, together with Runhuan Feng (PI), Alfred Chong and Jay Kesan (UIUC) .
Actuarial Innovation and Technology on Cyber Risk.

December 2018 **MAPFRE Fundacion**, *2018 Research Grants Ignacio H. De Larramendi (10000 EUR)*, Co-PI, together with Runhuan Feng (PI), Alfred Chong and Jay Kesan (UIUC).
Cyber Insurance – Challenges and Opportunities for Market Growth.

April 2015 **Society of Actuaries**, *2015 Individual Grant Competition (8000 USD)*, Together with Fan Yang (University of Waterloo, principal investigator).
Risk Aggregation with Partial Dependence Information

March 2015 **KU Leuven Onderzoeksfonds**, *Exploratory Bilateral co-operation Programme Tsinghua University - KU Leuven (12430 euro)*, Together with Jan Dhaene (KU Leuven, Principal Investigator), Bingzheng Chen (Tsinghua University, Principal Investigator), Tim Verdonck (KU Leuven, Co-Investigator), Lihong Zhang & Feng Gao (Tsinghua University, Co-Investigators).
Measuring and Managing Systematic Risk in Financial Markets

February 2014 **Research Foundation Flanders (FWO)**, *FWO travel grant (3300 euro).*
Stay in Hong Kong University

September 2013 **Axa Research Grant**, *Postdoctoral fellowhsip (120000 euro).*
Measuring and managing fear in financial markets

Research stays abroad

June 2015 **University of Waterloo**, *Waterloo*, Department of Statistics & Actuarial Science, (with prof. D. Landriault).
June 2015 - August 2015

June 2014 **University of Hong Kong**, *Hong Kong*, Department of Statistics, (with prof. K.C. Cheung).
June 24 - August 21, 2014

April 2014 **Universiteit van Amsterdam**, *Amsterdam*, Actuarial Science & Mathematical Finance, (with prof. M. Vellekoop).
April 1 - May 1, 2014

Supervision of PhD students

2021 **Morteza Tavanai**, *University of Illinois*.

2021 **Samal Abdikerimova**, *University of Illinois*.

2024 **Yong Xie**, *University of Illinois*.

Membership of PhD juries

2019 **Karim Barigou**, *KU Leuven*.
Promotor: prof. Jan Dhaene

2019 **Hamza Hanbali**, *KU Leuven*.
Promotor: prof. Jan Dhaene

2015 **Ben Stassen**, *KU Leuven*.
Promotor: prof. Jan Dhaene

Publications

In international journals, with peer review

- Dhaene, J., Kukush, A. & Linders, D. (2020) 'Comonotonic asset prices in arbitrage-free markets', *Journal of Computational and Applied Mathematics* 364, 112310.
- Hanbali, H. & Linders, D. (2019) 'American-type basket option pricing: a simple two-dimensional Partial Differential Equation', *Quantitative Finance*, 19:10, 1689-1704.
- van Bilsen, S. & Linders, D. (2019) 'Affordable and Adequate Annuities with Stable Payouts: Fantasy or Reality?', *Insurance: Mathematics & Economics* 86, 19-42.
- Linders, D. & Yang, F. (2017) 'Aggregating risks with partial dependence information', *North American Actuarial Journal*, 21(4), 565-579.
- Dhaene, J., Stassen, B., Barigou, K., Linders, D. & Chen, Z. (2017) 'Fair valuation of insurance liabilities: merging actuarial judgement and market-consistency', *Insurance: Mathematics & Economics 76*, 14-27.
- Linders, D. & Stassen, B (2016) 'The multivariate Variance Gamma model: basket option pricing and calibration', *Quantitative Finance* 2(2), 555-572.
- Linders, D., Dhaene, J. & Schoutens, W. (2015) 'Option prices and model-free measurement of implied herd behavior in stock markets', *International Journal of Financial Engineering* 2 (2), 1-35.
- Guillaume, F. & Linders, D. (2015) 'Modeling herd behavior indices', *Quantitative Finance* 15(14), 1963-1977.
- Chen, C., Deelstra, G., Dhaene, J., Linders, D. & Vanmaele, M. (2015) 'On an optimization problem related to static super-replicating strategies', *Journal of Computational and Applied Mathematics* 278, 213–230.
- Cheung K.C., Dhaene, J., Kukush, A. & Linders, D. (2015) 'Ordered random vectors and equality in distribution', *Scandinavian Actuarial Journal* 2015(3), 221-244.

- Linders, D. & Schoutens, W. (2014) ‘A framework for robust measurement of implied correlation’, *Journal of Computational and Applied Mathematics*, 271, 39-52.
- Dhaene, J., Linders, D., Schoutens, W. & Vyncke, D. (2014) ‘A multivariate dependence measure for aggregating risks’, *Journal of Computational and Applied Mathematics*, 263, 78-87.
- Dhaene, J., Kukush, A. & Linders, D. (2012) ‘The multivariate Black & Scholes market: conditions for completeness and no-arbitrage’, *Theory of Probability and Mathematical Statistics*, 88, 1 - 14.
- Dhaene, J., Kukush, A., Linders, D. & Tang, Q. (2012) ‘Some remarks on quantiles and distortion risk measures’, *European Actuarial Journal*, 2(2), 319-328.
- Goovaerts, M., Linders, D., Van Weert, K. & Tank, F. (2012) ‘On the interplay between distortion, mean value and Haezendonck-Goovaerts risk measures’, *Insurance: Mathematics & Economics*, 51 (1), 10 - 18.
- Dhaene, J., Linders, D., Schoutens, W. & Vyncke, D. (2012) ‘The herd behavior index: a new measure for the implied degree of co-movement in stock markets’, *Insurance: Mathematics & Economics*, 50 (3), 357 - 370.

Articles in parts of books

- Dhaene, J., Dony, J., Forys, M., Linders, D. & Schoutens, W. (2012). ‘FIX: The Fear Index: Measuring market fear’ Topics in Numerical Methods for Finance, Cummins M. et al. (eds.). Springer Proceedings in Mathematics & Statistics.

Books

- Feng, R., Lo, A. & Linders (2018). ‘ ACTEX SOA Exam SRM’, ACTEX Learning.

Conference Proceedings

- Glau, K., Linders, D., Min, A., Scherer, M., Schneider, L & Zagst, R. (2018). ‘Innovations in insurance, risk- and asset management’, World Scientific.

Presentations

Announcements at National and International Conferences

- Linders, D. (2021). ‘3-step hedge-based valuations: market-consistent valuation in the presence of systematic risks’, invited talk at the QuantMinds In Focus conference, May 24-28, 2021, London, Online Event.
- Barigou, K. & Linders, D. (2020). ‘Two-step financial and actuarial valuations: characterizations and applications’, invited talk at the online workshop on the interplay between financial and actuarial risks, Tsinghua Univiversity (China) - Renmin University (China) - KU Leuven (Belgium), December 17.
- van Bilsen, S. & Linders, D. (2019). ‘Affordable and Adequate Annuities with Stable Payouts: Fantasy or Reality?’, invited talk at the 3rd International Congress on Actuarial Science and Quantitative Finance, Manizales, Colombia, June 19 - 22.
- van Bilsen, S. & Linders, D. (2016). ‘Buffering returns in investment-linked annuities’, invited talk at the 9th International Conference of the ERCIM WG on Computational and Methodological Statistics, Sevilla, Spain, December 9-11.
- van Bilsen, S. & Linders, D. (2016). ‘Buffering returns in investment-linked annuities’, 20th International Congress on Insurance: Mathematics & Economics, Atlanta, USA, July 24-27.

- Linders, D. Dhaene, J. & Schoutens, W. (2015). 'Model-free measurement of implied herd behavior', CMO-BIRS workshop on Recent Advances in Actuarial Mathematics, Oaxaca, Mexico, October 25-30.
- Linders, D. & Schoutens, W. (2015). 'Basket option pricing and implied correlation in a Lévy copula model', Challenges in Derivatives Markets, KPMG Center of Excellence in Risk Management, Munchen, Germany, March 30 - April 1.
- Linders, D. Dhaene, J. & Schoutens, W. (2015). 'Model-free measurement of implied herd behavior', Actuarial and Financial Mathematics Conference Interplay between Finance and Insurance, Brussels, Belgium, February 5-6.
- Linders, D. & Schoutens, W. (2014). 'Basket option pricing and implied correlation in a Lévy copula model', Invited talk at the 7th International Conference of the ERCIM WG on Computational and Methodological Statistics , Pisa, Italy, December 6-8.
- Linders, D. & Schoutens, W. (2014). 'Basket option pricing and implied correlation in a Lévy copula model', 18th International Congress on Insurance: Mathematics & Economics, Shanghai, China, July 10-12.
- Dhaene, J., Linders, D. & Schoutens, W. (2014). 'Model-free measurement of implied herd behavior', 8th World Congress of the Bachelier Finance Society, Brussels, Belgium, June 2 - 6.
- Dhaene, J., Linders, D. & Schoutens, W. (2014). 'Model-free measurement of implied herd behavior', 30th International Congress of Actuaries, Washington DC, USA, March 30 - May 4.
- Linders, D., Dhaene, J. & Schoutens, W. (2013). 'Measuring herd behavior in stock markets', 17th International Congress on Insurance: Mathematics & Economics, Copenhagen, Denmark, July 1-3.
- Linders, D., Dhaene, J. & Schoutens, W. (2013). 'Measuring herd behavior in stock markets', 6th Brazilian conference on statistical modelling and insurance, Maresias, Brasil, March 24-28.
- Goovaerts, M., Linders, D., Tank, F. & Van Weert, K. (2012). 'On the Interplay between Distortion, Mean Value and Haezendonck-Goovaerts Risk Measures', 16th International Congress on Insurance: Mathematics & Economics, Hong Kong, June 28-30.
- Linders, D., Dhaene, J., & Kukush, A. (2012). 'Measuring dependence using the distribution of the sum', 16th International Congress on Insurance: Mathematics & Economics, Hong Kong, June 28-30.
- Dhaene, J., Linders, D., Schoutens, W. & Vyncke, D. (2011). 'The HIX: a new measure for the degree of herd behavior in stock markets', 15th International Congress on Insurance: Mathematics & Economics, Trieste, Italy, June 14-16.

Teaching experience

Awards

On the list of Excellent Teacher, *University of Illinois*, Department of Mathematics, Spring & Fall 2019, Spring 2020.
see: https://citl.illinois.edu/citl-101/measurement-evaluation/teaching-evaluation/teaching-evaluations-(ices)/teachers-ranked-as-excellent

Award for best Teaching Assistant, *Technical University Munich*, Department of Mathematics, Winter Semester 2016.

Visiting lectureship abroad

Foundations of Risk Measurement, *Master in Financial and Actuarial Engineering*, KU Leuven, October-November 2017, 2018, 2019, 2020, 2021, 2022.
39 teaching hours: lectures, exercise sessions, substitute for prof. Jan Dhaene.

Financial Mathematics II, *Master* Actuarial *Science and Financial Mathematics*, Institut Supérieur de Management Adonaï-ISM Adonaï, Benin, January 18 - 25, 2016.
20 teaching hours: lectures, exercise sessions

Risk Measurement, *Master of Actuarial Science*, University of Waterloo, Canada, June 1 - August 1, 2015.
18 teaching hours: lectures, exercise sessions

Academic year 2020 - 2021

Introduction to Data Science, University of Amsterdam.
Lectures and exercises.