

Brief Curriculum Vitae - Emmanuel Haven
January 2025

Webpages

- **Google Knowledge Panel: ‘Emmanuel Haven’**
- **Wikipedia page: https://en.wikipedia.org/wiki/Emmanuel_Haven**

QUALIFICATIONS

- BA (Economics), McGill University (Canada)
- MA (Economics), McGill University (Montreal, Canada)
- Ph.D. (Finance), John Molson School of Business, Concordia University (Montreal, Canada)

EMPLOYMENT HISTORY

- Full Professor and ‘Dr. Alex Faseruk Chair in Financial Management’ at the Faculty of Business Administration, Memorial University: September 2017 – present
- Full Professor (Personal Chair) at the University of Leicester (UK): March 2008 – August 2017
- Reader (Associate Professor) in finance at the University of Leicester (UK): April 1 2007 – March 2008
- Senior Lecturer (Associate Professor) in finance at the University of Essex (UK) : 2003- April 2007
- Lecturer (Assistant Professor) in finance at the University of Essex (UK) : August 2000-2003

RELEVANT ADMINISTRATIVE TASKS

- Director of the Interdisciplinary PH.D program at Memorial University (since 2018): <https://www.mun.ca/idphd/current-students/>
- Director of the newly created CQSCS center at Memorial University. CQSCS is a research centre for quantum social and cognitive science: <https://www.mun.ca/business/centres-and-engagement/centre-for-quantum-social-and-cognitive-science/cqscs-organizational-structure/>
- Vice-chair of Planning and Budget Committee (PBC) – Memorial University
- Senator and member of the Senate Executive – Memorial University
- Member of the board of the International Center for Mathematical Modelling (ICMM) at Linnaeus University (Sweden).

EDITORIAL BOARD MEMBER

- Co-editor in chief at the SAGE journal: *Quantum Economics and Finance*
- Academic Editor at: PLOS One
- Co-Editor at the De Gruyter journal: *Economics: The Open-Access, Open-Assessment Journal*
- Editorial board member at the MDPI journal: *Quantum Reports*

COMPLETED AND CURRENT DOCTORAL STUDENTS UNDER MY SUPERVISION

Completed doctoral students under my supervision

1. Dr. Liya Shen: works as academic at Essex Business School - University of Essex – UK
2. Dr. Neil Lancaster: works as academic at Leicester Castle Business School - De Montfort University - UK
3. Dr. Emin Dogus: works as academic at the Social Sciences University of Ankara - Turkey
4. Dr. Oi Yan (Jenny) Kam
5. Dr. Polina Khrennikova: works as academic at the Faculty of Behavioural, Management and Social Sciences, Universiteit Twente, The Netherlands.
6. Dr. Chen Shen: works at Galaxy Futures Co in Beijing, China

7. Dr. Will Hicks: (recent ID PhD graduate – MUN) – works at investment firm in London – UK.

Current doctoral students

8. Ms. Hashna Binte Nahar: with Dr. Jacqueline Blundell, Department of Psychology, Memorial University; Dr. Armin Hatefi, Department of Mathematics and Statistics, Memorial University
9. Ms. Chau Bao Phung: with Dr. Octavia Dobre, Faculty of Engineering and Applied Science, Memorial University; Dr. Trung Duong, Faculty of Engineering and Applied Science, Memorial University
10. Mr. Matthieu Hubert: with Dr. Trung Duong, Faculty of Engineering and Applied Science, Memorial University and Dr. Octavia Dobre, Faculty of Engineering and Applied Science, Memorial University
11. Mr. Jesse Schnobb: with Dr. David LeFrancois, Department of Education, University du Quebec; Dr. Hannah Snyder, Department of Marketing, BI Norwegian Business School
12. Ms. Patience Ahiaku: with Dr. Octavia Dobre, Faculty of Engineering and Applied Science, Memorial University; Dr. Trung Duong, Faculty of Engineering and Applied Science, Memorial University; Dr. Nathan Grieve, Department of Mathematics and Statistics, Acadia University
13. Mr. Hadi Moradi: with Dr. Ivan Saika-Voivod – Physics, Memorial University

PUBLICATIONS

I. Guest editor (2025)

1. *Philosophical Transactions of the Royal Society A* (July 2025). [Workshop on the Applications of Topology to Quantum Theory and Behavioural Economics](#). The Fields Institute. University of Toronto, Canada. Guest Editors: J. Busemeyer (Indiana University Bloomington, USA); G. Chichilnisky (Columbia University, USA); P. Hammond (Stanford University, USA); E. Haven (Memorial University, Canada)
2. *Theoretical Computer Science* (July 2025). Biennial [International Quantum Structure Association](#) (IQSA) Conference Quantum Structures 2024. Brussels, Belgium. Guest Editors: D. Aerts (University of Brussels, Belgium); S. Smets (University of Amsterdam, The Netherlands); S. Sozzo (University of Udine, Italy); E. Haven (Memorial University, Canada)

II. Books (chronological)

1. Haven, E.; Athalaye, V. (2025). *Quantum modelling of Economic and Financial Systems*. Cambridge University Press (forthcoming)
2. Chakraborti, A.; Haven, E.; Patra, S.; Singh, N. (2023) - Editors of the Book: *Quantum decision theory and complexity modelling in Economics and Public Policy*. This book will appear in the series: 'New Economics Windows Series' (Eds.: Alan Kirman; Thomas Lux et al.). Springer – Nature.
3. Plotnitsky, A.; Haven, E. (2023) - Editors of the Book: *The Quantum-Like Revolution: Festschrift in Honour of Professor Andrei Khrennikov*. With a foreword from Anton Zeilinger – 2022 Nobel Prize Winner in Physics: Springer – Nature
4. Haven, E.; Khrennikov, A. (2017). *The Palgrave Handbook of Quantum Models in Social Science*. Palgrave MacMillan Handbook Series.
5. Haven, E.; Khrennikov, A.; Robinson, T. (2017). *A First Course in Applying Quantum Physics to Social Science*. World Scientific (formerly Imperial College Press).
6. Haven, E.; Molyneux, Ph. ; Wilson, J.; Fedotov, S.; Duygun, M. (2016). *The Handbook of Post Crisis Financial Modelling*. Palgrave MacMillan Handbook Series.
7. Haven, E.; Khrennikov, A. (2013). *Quantum Social Science*. Cambridge University Press – Cambridge (UK).

8. d'Ariano, M.; Fei, S.M.; Haven, E.; Hiesmayr, B.; Jaeger, G.; Khrennikov, A.; Larsson, J.A. (Editors) (2012). *Foundations of Probability and Physics – 6*. American Institute of Physics Proceedings; 1424.

III. Refereed Journal publications

➔ Applications of physics to social science

1. Hosseini, R.; Tajik, S.; Lai, Z.; Jamali, T.; Haven, E.; Jafari, R. (2023). Quantum Bohmian-inspired potential to model non-Gaussian time series and its applications in financial markets. *Entropy*, 25(7), 1061-
2. Athalye, V.; Haven, E. (2023). Causal viewpoint and ensemble interpretation: from physics to social sciences. *Philosophical Transactions of the Royal Society A*. Volume 381. Issue 2252. 20220279
3. Khaksar, H.; Haven, E.; Nasiri, S.; Jafari, G. (2021). Using the quantum potential in elementary portfolio management: some initial ideas. *Entropy*. 23 (2) 180. <https://doi.org/10.3390/e23020180>.
4. Haven, E. (2019). Quantum mechanical pragmatic rules and social science. In: Festschrift in Honour of Dr. Henry Stapp (Eds: A. de Barros; C. de Montemayor (San Francisco State U.); S. Klein; C. Cochran (UC Berkeley); P. Bob (Charles U.)). *Activitas Nervosa Superior* 61 (1-2); pp. 83-85. Springer Nature.
5. Haven, E. (2019). Quantum Mechanics and Consciousness: Some Views from a Novice. In: Quanta and Mind (Eds: A. de Barros; C. de Montemayor (San Francisco State U.)). *Synthese Library: Studies in Epistemology, Logic, Methodology, and Philosophy of Science*; pp. 141-150. Springer Nature.
6. Aerts, D., Haven, E. & Sozzo, S. (2018). A proposal to extend expected utility in a quantum probabilistic framework. *Economic Theory*, (65, 1079-1109).
7. Guest Editor for special issue in *Journal of Mathematical Economics*: Haven, E., Khrennikov, A., Ma, C. & Sozzo, S. (2018). Quantum Probability Theory and its Economic Applications. *Journal of Mathematical Economics*, (78, 1-198).
8. Haven, E.; Khrennikov, A. (2017). Statistical and subjective interpretations of probability in quantum-like models of cognition and decision making. *Journal of Mathematical Psychology*, 74 (82-91).
9. Haven, E.; Khrennikov, A. (2017). The use of action functionals within the quantum-like paradigm. *Journal of Mathematical Psychology*, 78 (13-23).
10. Haven, E. Khrennikov, A. (2017). Editors of the Special Issue: ‘Applications of Quantum Mechanical Techniques to Areas Outside of Quantum Mechanics.’ *Frontiers in Physics*.
11. Haven, E. (2016). Links between fluid mechanics and quantum mechanics: a model for information in economics? *Philosophical Transactions of the Royal Society A*. In special Issue: “Quantum Foundations: information approach.” (G.M. d’Ariano and A. Khrennikov; Eds.). 374: 20150237.
12. Haven, E.; Khrennikov, A. (2015). Editors of the special issue: ‘Selected Papers from the Fields Institute Conference (University of Toronto) ‘Quantum Probability and the Mathematical Modelling of Decision Making’’. *Philosophical Transactions of the Royal Society A*. Volume 374. Issue 2058. With an Editorial from David Garner, FRS – Editor-in-Chief of Philosophical Transactions of the Royal Society A.
13. Robinson, T., Haven, E. (2015), Quantization and quantum-like phenomena: a number amplitude approach. *International Journal of Theoretical Physics*, 54(12) (4576–4590).
14. Haven, E. (2015). Potential functions and the characterization of economics-based information. *Foundations of Physics*, 45(10) (1394-1406).
15. Khrennikova, P.; Haven, E.; Khrennikov, A. (2014) ‘An application of the theory of open quantum systems to model the dynamics of party governance in the US Political System’. *International Journal of Theoretical Physics*, 53 (4) (1346-1360).

16. Haven, E.; Khrennikov, A. (2013). 'Quantum-Like Tunnelling and Levels of Arbitrage'. *International Journal of Theoretical Physics*, 52 (4083-4099).
17. Haven, E. (2011) 'Ito's Lemma with Quantum Calculus: Some Implications'. *Foundations of Physics*, 41(3), 529-537.
18. Aerts, D.; d'Hooghe, B.; Haven, E. (2010). 'Quantum Experimental Data in Psychology and Economics.' *International Journal of Theoretical Physics*, 49(12) (2971-2990).
19. Khrennikov, A.; Haven, E. (2009). 'Quantum mechanics and violations of the sure-thing principle: the use of probability interference and other concepts'. *Journal of Mathematical Psychology*, 53 (5) (378-388).
20. Ishio, H.; Haven, E. (2009). 'Information in asset pricing: a wave function approach'. *Annalen der Physik*, 18(1) (33-44).
21. Haven, E. (2008). 'The Variation of Financial Arbitrage via the Use of an Information Wave Function'. *International Journal of Theoretical Physics*, 47 (193-199).
22. Haven, E. (2006). 'Pilot-wave theory and financial option pricing'. *International Journal of Theoretical Physics*, 44 (11) (1957-1962).

Applications of physics to biology

23. Robinson, T., Haven, E. & Fry, A. (2017). Quantum counting: operator methods for discrete population dynamics with applications to cell division. *Progress in Biophysics and Molecular Biology*, 130 (106-119).

Applications of applied mathematics to finance and economics

24. Namaki, A.; Raezi, R.; Ardalankia, J.; Hedayatifar, L.; Hosseiny, A.; Haven, E.; Jafari, G. (2021). Analysis of the global banking network by Random Matrix Theory. *Frontiers in Physics*. doi.org/10.3389/phys.2020.586561.
25. Ardalankia, J.; Askari, J.; Sheykhal, S.; Haven, E.; Jafari, G. (2021). Mapping coupled time series onto a complex network. *EPL – Institute of Physics*, 132, 58002.
26. Ardalankia, J.; Osoolian, M.; Haven, E.; Jafari, R. (2020). Scaling Features of Price-Volume Cross Correlation. *Physica A*, 549, 124111.
27. Moreira, C., Haven, E., Sozzo, S., Wichert, A. (2018). Process mining with real world financial loan applications: Improving inference on incomplete event logs. *PLOS ONE*: <https://doi.org/10.1371/journal.pone.0207806>
28. Shen, C. and E. Haven (2017). Using Empirical Data to Estimate Potential Functions in Commodity Markets: Some Initial Results. *International Journal of Theoretical Physics*; 56; 4092-4104.
29. Haven, E., Sozzo, S. (2016). A Generalized Probability Framework to Model Economic Agents' Decisions under Uncertainty. *International Review of Financial Analysis*, 47 (297-303).
30. Bagarello, F. , Haven, E. (2016). First Results on Applying a non-linear Effect Formalism to Alliances between Political Parties and Buy and Sell Dynamics. *Physica A*, 444 (403-414).
31. Bagarello, F.; Haven, E. (2015) 'Towards a formalization of a two traders market with information exchange'. *Physica Scripta*. 90 015203. This article was chosen as an 'IOP Select Article'.
32. Caraini, P.; Haven, E. (2015) 'Evidence of Multifractality from CEE Exchange Rates against Euro'. *Physica A*, 419 (395-407).
33. Bagarello, F.; Haven, E. (2014) 'The role of information in a two traders market'. *Physica A*, 404 (224-233).
34. Caraianni, P.; Haven, E. (2013) 'The role of recurrence plots in characterizing the output-unemployment relationship: an analysis'. *PLoS ONE*, 8(2): e56767-e56767.
35. Haven, E.; Liu, X.; Shen, L. (2012). 'De-noising Option Prices with the Wavelet Method'. *European Journal of Operational Research*, 222 (104-112).

36. Stradi, B.; Haven, E. (2010). ‘The use of interval arithmetic in solving a nonlinear rational expectation based multiperiod output-inflation process model: the case of the IN/GB method’. *European Journal of Operational Research*, 203 (1) (222-229).
37. Haven, E. (2010). ‘The Blackwell and Dubins Theorem and Rényi’s Amount of Information Measure: Some Applications’. *Acta Applicandae Mathematicae*, 109 (3) (743-757).
38. Haven, E.; Ma, C. ; Liu, H.; Shen, L. (2009). ‘Revealing the implied risk-neutral MGF with the wavelet method’. *Journal of Economic Dynamics and Control*, 33 (3) (692-709).
39. Haven, E. (2008). ‘Private Information and the ‘Information function’’. *Theory and Decision*, 64 (2-3) (193-228).
40. Stradi, B. Haven, E. (2005). ‘Optimal Investment Strategy via Interval Arithmetic’. *International Journal of Theoretical and Applied Finance*, 8 (185-206).
41. Haven, E. (2005). ‘Analytical solutions to the backward Kolmogorov PDE via an adiabatic approximation to the Schrödinger PDE’. *Journal of Mathematical Analysis and Applications*, 311 (439-444).
42. Haven E. (2005). ‘Emergence of Fuzzy Preference for Risk in a Birkhoff-von Neumann Logics Environment’. *Fuzzy Sets and Systems* 153(1), 29-43.
43. Haven E. (2005). ‘The financial relevance of fuzzy stochastic dominance: a brief note’. *Fuzzy Sets and Systems* 152 (3), 467-473.
44. Haven, E. (2002). ‘Fuzzy Interval and Semi-Orders’. *European Journal of Operational Research* 139, 302-316.

IV. Other Refereed Journal Special Issues

1. Poudel, R.; Haven, E.; Gunes, U.; Georgiev, G.; Zhang, H. (2023). Thermodynamics 2.0: Bridging the Natural and Social Science. Special issue in *Philosophical Transactions of the Royal Society A*
2. Chichilnisky, G.; Eisenberger, P.; Haven, E.; Khrennikov, A. (2021). The close connection between Economics and Quantum Theory: a topological exploration. Special Issue in *Quantum Reports*. https://www.mdpi.com/journal/quantumrep/special_issues/quantumrep_EconomicsandQuantumTheory
3. Jafari, G.; Ausloos, M.; Haven, E.; Saakian, D. (2021). The paradigm of complexity and the real data of socio-economy. Special issue in *Frontiers in Physics*.
4. Surov, I.; Haven, E.; beim Graben, P.; Sozzo, S.; Moreira, C. (2021). Predictive Modeling of Cognition and Behavior on Quantum Principles. Special issue in *Frontiers in Psychology*.

V. Popular media

1. Khrennikov, A.; Haven, E. (2024). How quantum-like models illuminate complex systems. *Scientia*.
2. Haven, E.; Khrennikov, A. (2020). Invited contribution to comment on a recent Nature paper. Live Science Network: <https://www.livescience.com>
3. Haven, E.; Khrennikov, A. (2013). How the rule of quantum mechanics can help make sense of complex social systems. *New Scientist*. July 6 Issue, 26-27.
4. Haven, E.; Khrennikov, A. (2013). Quantum mechanica en de sociale wetenschappen, *New Scientist* (Dutch Version). September 2013 Issue, 80-81.

CONFERENCE LEADERSHIP

- Main organizer of the forthcoming IQSA conference – July 2026 (to be held at Memorial University)
- Special session organizer at:

- Linneaus University (June 2024 and 2025): [Quantum Information and Probability: From Foundations to Engineering International Conference](#).
- University of Brussels (July 2024): Biennial [International Quantum Structure Association](#) (IQSA) Conference Quantum Structures
- Co-organizer with G. Chichilnisky of the workshop: Applications of topology to quantum theory and behavioral economics at the Fields Institute – University of Toronto (March 2023)
- Main organizer (with Andrei Khrennikov; Jerome Busemeyer; Arkady Plotnitsky; Ehti Dzhafarov and Emmanuel Pothos) of the conference “Quantum Probability and the Mathematical Modelling of Decision Making” at the Fields Institute – University of Toronto (March 2015): <http://www.fields.utoronto.ca/programs/scientific/14-15/quantumprobability/>
- Co-organizer (with Sandro Sozzo) of the 13th Biennial IQSA conference (July 11-15 – 2016) at the University of Leicester.
- Main organizer of the 7th ‘Quantum Interaction’ conference (University of Leicester), with the participation of Edward Nelson (Princeton University) and Samson Abramsky (Oxford University) (July 2013)
- Co-organizer (with Mike Oaksford) of a special symposium on quantum probability in social science (held at Brown University, USA, August 4-6, 2016). See: <http://sites.clps.brown.edu/ict2016/>

RESEARCH GRANTS

- ESRC Research Grant: Seminar Funding: Financial Modelling Post-2008: Where Next? £18,000 (+/-: \$CAN 31,000) with Prof. Wilson (St. Andrews University); Prof. Molyneux (Bangor University); Prof. Fedotov (University of Manchester) and Dr. Fethi (University of Leicester).
- Funding award of Euro 236,000 (+/-: \$CAN 350,000) from the Fund for Scientific Research (Fonds voor Wetenschappelijk Onderzoek, Government of Flanders, Belgium) with Professor Diederik Aerts (Free University of Brussels, Belgium) and Professor Bart D’Hooghe (Free University of Brussels, Belgium) for funding on a four year project which aims “to develop and test a general economic theory for financial option pricing based on the mathematical formalisms of quantum mechanics and to model a socio-economic system incorporating its emergent, contextual and non-deterministic aspects”. January 1 – 2008 until December 31 – 2011.
- Other smaller grants from: **Daiwa Anglo-Japanese Foundation** and the **British Academy**

OTHER ACADEMIC ACTIVITIES

- ➔ **Ad-hoc refereeing:** for multiple journals with Elsevier/Springer/IOP and other publishers.
- ➔ **Invited speaker at** multiple universities; notably University of Oxford; Fudan University; University of California (Irvine); Imperial College and others.