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RESEARCH INTERESTS	Theoretical and Empirical Asset Pricing Financial Econometrics Big Data Tail Risk
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ACADEMIC APPOINTMENTS	<p><b>Senior Lecturer</b> 07.2017 - present School of Mathematical Sciences Monash University</p> <p><b>Post-Doctoral Researcher</b> 04.2015 - 06.2017 Swiss Finance Institute École Polytechnique Fédérale de Lausanne</p> <p><b>Post-Doctoral Researcher</b> 03.2014 - 03.2015 <b>ECARES</b>, SBS-EM Free University of Brussels</p> <p><b>Lecturer</b> 09.2013 - 02.2014 Department of Mathematics <b>Soran University</b></p>
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WORK EXPERIENCE	<p><b>Risk Manager</b> 08.2011 - 09.2013 <b>AAICCO</b>, Investment Consulting Company</p>
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EDUCATION	<p><b>K. N. Toosi University of Technology</b></p> <p>Ph.D., Applied Probability and Statistics, July 2013</p> <p>M.S., Numerical Analysis, September 2008</p>
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BOOK PUBLICATIONS	<p>1. Fractional Calculus and Fractional Processes with Applications in Financial Economics (joint with Frank J. Fabozzi and Sergio Focardi), <b>Elsevier</b>, 2017.</p>
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REFEREED JOURNAL PUBLICATIONS	<p><b>Main publications</b></p> <p>1. Fallahgoul, H., Loeper, G., Modeling Tail Risk with Tempered Stable Distributions: an Overview, 2019. <i>Annals of Operations Research</i>.</p>
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2. Fallahgoul, H., Kim, Y. S., Fabozzi, F. J., Park, J., Quanto Option Pricing with Lévy Models, 2018. *Computational Economics*.
3. Fallahgoul, H., Vereda, D., Fabozzi, F. J., Quantile-based Inference for Univariate Tempered Stable Distribution, 2017. *Computational Economics*.
4. Fallahgoul, H., Kim, Y.S., Fabozzi, F. J., Elliptical Tempered Stable Distribution, 2016. *Quantitative Finance*.
5. Fallahgoul, H., Hashemiparast, S. M., Fabozzi, F. J. and Klebanov, L., Analytical-numeric formulas for the pdf of multivariate stable and geo-stable distribution, 2014. *Journal of Statistical Theory and Practice*.

#### Other publications

1. Fallahgoul, H., Hashemiparast, S. M., Fabozzi, F. J. and Kim, Y. S., Multivariate stable distributions and generating densities, 2013. *Applied Mathematics Letters*.
2. Fallahgoul, H., Hashemiparast, S. M., Kim, Y.S., Rachev, S.T. and Fabozzi, F. J., Approximation of stable and geometric stable distributions, 2012. *Journal of Statistical and Econometric Methods*.
3. Fallahgoul, H., Hashemiparast, S. M., Analytic approximation of time-fractional diffusion-wave equation based on connection of fractional and ordinary calculus, 2013. *Journal of Computational Analysis and Applications*.
4. Hashemiparast, S.M. and Fallahgoul, H., Approximation of fractional derivative via Gauss integration, 2011. *Annali dell'Universita di Ferrara*.
5. Hashemiparast, S.M. and Fallahgoul, H., Approximation of Laplace transform of fractional derivatives via Clenshaw-Curtis integration, 2011. *International Journal of Computer Mathematics*.
6. Hashemiparast, S.M., Sabzevari, M. and Fallahgoul, H., Using crooked lines for the higher accuracy system of integral equations, 2011. *Journal of Applied Mathematics & Informatics*.
7. Hashemiparast, S.M., Sabzevari, M. and Fallahgoul, H., Improving the solution of nonlinear volterra integral equations using rationalized Haar s-functions, 2011. *Vietnam Journal of Mathematics*.
8. Hashemiparast, S.M. and Fallahgoul, H., Modifies Gauss quadrature for ill-posed integral transforms, 2011. *International Journal of Mathematics and Computation*.

#### WORKING PAPERS

1. **Time changes, Lévy jumps and asset returns**, 2019 (joint with Julien Hugonnier and Lorian Mancini).
2. **Model risk and disappointment aversion**, 2018 (joint with Lorian Mancini and Stoyan Stoyanov).
3. **Correlated time-changed Lévy processes**, (joint with Kihun Nam) 2019.
4. **Time-changed Lévy processes and option pricing: a critical comment**, (joint with Kihun Nam) 2019.

WORKS IN  
PROGRESS

- Misspecification in Asset Pricing Models (joint with Stoyan Stoyanov)
  - *Objectives:* we develop an econometric test for the hypothesis that addresses the misspecification for the conditional and a general class of asset pricing models which a linear asset pricing model is special case of it.
- Smoothed Generalized Disappointment Aversion (joint with Stoyan Stoyanov)
  - *Objectives:* We extend the standard disappointment aversion model of Gul ([Econometrica, 1991](#)) and [Routledge and Zin \(JF, 2010\)](#) such that one is able to apply the traditional Taylor series expansion. In addition, the model is more realistic to address some anomalies in asset pricing such equity risk premium as well as Allais paradox.
- Disagreement Around Macro Announcement (joint with Yuan Zhang)
  - *Objectives:* We investigate how the news affect the price of a firm. The question that we are addressing is: around the public announcement such as the FOMC how disagreement evolves and it affects which sector more?
- Hedging Climate Change in Real Time (joint with Lorian Mancini )
  - *Objectives:* We introduce a dynamic hedging strategy for the climate change risk based on messages of large number of investors on the stock market. Thanks to the availability of the data, our hedging strategy can be implemented at the HF level.

PHD ADVISING

- Deep learning and nonlinear pricing kernel, Vincentius Franstianto (co-advisor, 2019-current, Monash)

PHD THESIS  
COMMITTEE

- At Monash: Shiyi Wang

REFeree

- *Journal of Econometrics, Journal of Banking and Finance, Studies in Nonlinear Dynamics & Econometrics Mathematics and Financial Economics, Computational Management Science, Journal of Risk, Annals of Operations Research, Journal of Investment Strategies, Journal of Risk Model Validation*

AWARDS AND  
GRANTS

- Postdoc fellowship co-funded by the **Marie Curie Actions** from the European Commission, 2014-2015.

PRESENTATIONS

(\*=presented by co-author)

- 2019 – Thirteenth Annual Risk Management Conference, NUS. Non-standard Investment Choice, ESSEC. University of Lugano. University of Pompeu Fabra. 2019 FMA Annual Meeting\*. Paris December Finance Meeting.
- 2018 – AFBC. SoFiE, Lugano. Quantitative Finance and Risk Analysis, Greece. Monash Financial Markets Workshop.
- 2017 – AFA Annual Meeting, Chicago. Stony Brook University. The Quantitative Methods in Finance, Sydney. Urmia University, Urmia.

- 2016 – European Finance Association Annual Meeting 2016, Oslo. University of St. Gallen. Swissquote Conference on the Future of Banking.
- 2015 – 7th General AMaMeF and Swissquote Conference, EPFL.
- 2012 – 11th Iranian Statistical Conference, Tehran.
- 2010 – 41st Iranian International Conference on Mathematics, Urmia.
- 2009 – International Conference of Mathematical Sciences, Istanbul.
- 2008 – 9th Iranian Statistical Conference, Isfahan. 5th International Conference of Applied Mathematics and Computing, Plovdiv. International Conference of Mathematics, Dubai.

TEACHING EXPERIENCE	<p><b>Monash University</b></p> <ul style="list-style-type: none"> <li>• Quantitative Trading and Market Microstructure (M.Sc.) S1, 2019</li> <li>• Quantitative Risk Management (M.Sc.) S2, 2017, 2018, 2019</li> </ul> <p><b>EPFL</b></p> <ul style="list-style-type: none"> <li>• Econometrics, (TA) S2, 2015, 2016</li> </ul> <p><b>ECARES</b></p> <ul style="list-style-type: none"> <li>• Graduate Econometrics I, (TA) S1, 2014</li> </ul> <p><b>University of Tehran</b></p> <ul style="list-style-type: none"> <li>• Stochastic Processes, (M.Sc.) S2, 2013</li> <li>• Financial Engineering and Risk Management, (M.Sc.) S2, 2012</li> <li>• Financial Mathematics, (M.Sc.) S2, 2012</li> </ul> <p><b>Soran University</b></p> <ul style="list-style-type: none"> <li>• Financial Mathematics S2, 2013</li> <li>• Geo-Statistics and Data Analysis, S2, 2013</li> </ul> <p><b>K. N. Toosi University of Technology</b></p> <ul style="list-style-type: none"> <li>• Calculus I S1, 2010, 2011</li> <li>• Calculus I, E-Learning Central of KNTU S2, 2010</li> <li>• Applied Probability and Statistics, E-Learning Central of KNTU S2, 2010</li> </ul>
PROJECTS	<ul style="list-style-type: none"> <li>• Project leader for implementation of operational risk under Basel II for <b>Tejarat Bank</b></li> </ul>
SOFTWARE SKILLS	<ul style="list-style-type: none"> <li>• Python, MATLAB, R, Mathematica</li> <li>• Familiarity with Common computer skills <ul style="list-style-type: none"> <li>• Latex</li> <li>• Microsoft Office tools</li> </ul> </li> </ul>
LANGUAGES	<ul style="list-style-type: none"> <li>• English (Fluent)</li> <li>• French (Basic)</li> <li>• Kurdish (mother tongue)</li> </ul>
REFERENCES	<p>Frank J. Fabozzi  Professor of Finance  EDHEC Business School and  EDHEC Risk Institute</p> <p style="text-align: right;"><a href="mailto:frank.fabozzi@edhec.edu">frank.fabozzi@edhec.edu</a></p>

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