

Roger J. A. Laeven has founded and developed the following six new lines of research:

I. Contagion and Excitation

Abstract

In Aït-Sahalia, Cacho-Diaz and Laeven (2015, >850 google scholar cites, 09/30/25), we have introduced the Hawkes jump-diffusion model --- also referred to as the ACL contagion model. In subsequent work, we have developed theory to measure and estimate contagion and excitation.

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- [2.] Aït-Sahalia, Yacine, **Roger J. A. Laeven** & Lorian Pelizzon (2014). Mutual excitation in Eurozone sovereign CDS, [Journal of Econometrics](#) 183, 151-167.
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- [5.] Li, Z. Merrick, **Roger J. A. Laeven** & Michel H. Vellekoop (2020). Dependent microstructure noise and integrated volatility estimation from high-frequency data, [Journal of Econometrics](#) 215, 536-558.
- [6.] Ikefuji, Masako, **Roger J. A. Laeven**, Jan R. Magnus & Yuan Yue (2022). Earthquake risk embedded in property prices: Evidence from five Japanese cities, [Journal of the American Statistical Association](#) 117 (537), 82-93.
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[11.] Aït-Sahalia, Yacine & **Roger J. A. Laeven** (2025). Saddlepoint approximations for Hawkes jump-diffusion processes with an application to risk management, [Mimeo](#), Princeton University and University of Amsterdam.

[12.] Baars, Justin, **Roger J. A. Laeven** & Michel Mandjes (2024). Spatiotemporal Hawkes processes with a graphon-induced connectivity structure, [Mimeo](#), University of Amsterdam and Leiden University.

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II. Robust Entropy Convex Risk Measures and BSDEs

Abstract

In Laeven and Stajde (2013), we have introduced entropy convex risk measures. In subsequent work, we have developed the corresponding static and dynamic theory for portfolio choice, indifference valuation, optimal stopping and risk sharing, under convex and entropy convex risk measures, involving Backward Stochastic Differential Equations (BSDEs). In particular, in Laeven and Stajde (2014) we have established existence and uniqueness results for quadratic BSDEs in a possibly infinite activity jump setting.

References

- [1.] **Laeven, Roger J. A.** & Mitja A. Stajde (2013). Entropy coherent and entropy convex measures of risk, [Mathematics of Operations Research](#) 38, 265-293.
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Related Earlier Foundational Work

- [1.] Goovaerts, Marc J., Rob Kaas, **Roger J. A. Laeven** & Qihe Tang (2004). A comonotonic image of independence for additive risk measures, [Insurance: Mathematics and Economics](#) 35, 581-594.
- [2.] Goovaerts, Marc J. & **Roger J. A. Laeven** (2008). Actuarial risk measures for financial derivative pricing, [Insurance: Mathematics and Economics](#) 42, 540-547.
- [3.] Goovaerts, Marc J., Rob Kaas & **Roger J. A. Laeven** (2010). A note on additive risk measures in rank-dependent utility, [Insurance: Mathematics and Economics](#) 47, 187-189.

Related Work on Divergences

- [1.] de Punder, Ramon F. A., Cees G. H. Diks, **Roger J. A. Laeven** & Dick J. C. van Dijk (2025). Localizing strictly proper scoring rules, [Journal of the American Statistical Association](#), forthcoming.
- [2.] Jin, Guanyu, **Roger J. A. Laeven**, Dick den Hertog & Aharon Ben-Tal (2024). Constructing uncertainty sets for robust risk measures: A composition of ϕ -divergences approach to combat tail uncertainty, [Mimeo](#), University of Amsterdam and Technion.

III. Dual and Rank-Dependent Risk and Ambiguity Attitudes

Abstract

In Eeckhoudt and Laeven (2020), we have introduced the concept of squeezing and characterized dual prudence and temperance --- also referred to as probability prudence and temperance. In subsequent work, we have developed a local index of risk aversion under rank-dependent utility and have established that the 'maxiance' (Eeckhoudt and Laeven, 2021) stands on equal footing with the variance as a measure of risk.

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- [3.] **Laeven, Roger J. A.** & Mitja Stadje (2024). A rank-dependent theory for decision under risk and ambiguity, [Mimeo](#), University of Amsterdam and University of Ulm.
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Related Work on Reference Dependence

- [1.] Bilsen, Servaas van, **Roger J. A. Laeven** & Theo E. Nijman (2020). Consumption and portfolio choice under loss aversion and endogenous updating of the reference level, [Management Science](#) 66, 3927-3955.
- [2.] Bilsen, Servaas van & **Roger J. A. Laeven** (2020). Dynamic consumption and portfolio choice under prospect theory, [Insurance: Mathematics and Economics](#) 91, 224-237.
- [3.] Bilsen, Servaas van, A. Lans Bovenberg & **Roger J. A. Laeven** (2020). Consumption and portfolio choice under internal multiplicative habit formation, [Journal of Financial and Quantitative Analysis](#) 55, 2334-2371.
- [4.] Bilsen, Servaas van, **Roger J. A. Laeven** & Theo E. Nijman (2025). Savings and portfolio choice with risky labor income and loss aversion, [Mimeo](#), University of Amsterdam and Tilburg University.

IV. Goodness-of-Fit Testing for Dependence Models

Abstract

In Can, Einmahl, Khmaladze and Laeven (2015), we have introduced a general martingale transformation for asymptotically distribution-free goodness-of-fit testing in tail dependence models. In subsequent work, we have developed theory to handle regular dependence models and two-sample testing for tail copulas.

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- [2.] Can, S. Umut, John H. J. Einmahl & **Roger J. A. Laeven** (2020). Goodness-of-fit testing for copulas: A distribution-free approach, [Bernoulli](#) 26, 3163-3190.
- [3.] Can, S. Umut, John H. J. Einmahl & **Roger J. A. Laeven** (2024). Two-sample testing for tail copulas with an application to equity indices, [Journal of Business & Economic Statistics](#) 42, 147-159.

V. Expected Utility and Catastrophic Climate and Economic Risks

Abstract

In Ikefuji, Laeven, Magnus and Muris (2013, 2015, 2020, 2021), we show how an expected utility-based cost-benefit analysis can be justifiably conducted in the presence of heavy-tailed climate-economy risks.

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VI. Return and Star-Shaped Risk Measures

Abstract

A large literature has analyzed monetary risk measures. In a sense, as made precise in Laeven and Stajde (2013), these risk measures are intimately related to constant absolute risk aversion. In Bellini, Laeven and Rosazza Gianin (2018), we introduce return risk measures, to stand on equal footing with monetary risk measures. In subsequent work, we have developed the theory of static and dynamic return and star-shaped risk measures.

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- [2.] Bellini, Fabio, **Roger J. A. Laeven** & Emanuela Rosazza Gianin (2018). Robust return risk measures, [Mathematics and Financial Economics](#) 12, 5-32.
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