

**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.

### *References*

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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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- [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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- [12.] Baars, Justin, **Roger J. A. Laeven** & Michel Mandjes (2026). Spatiotemporal Hawkes processes with a graphon-induced connectivity structure, [Annals of Applied Probability](#), 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.

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- [2.] **Laeven, Roger J. A.** & Mitja A. Stajde (2014). Robust portfolio choice and indifference valuation, [Mathematics of Operations Research](#) 39, 1109-1141.
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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  $\phi$ -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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#### *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.
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#### 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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#### 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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