



31 May - 03 June 2016

at
ISEG- Lisbon School of Economics
and Management

If you intend to submit a paper for the ASTIN COLLOQUIUM LISBOA 2016, you need to provide a **Synopsis** (using the template on the next page), complete this **Submission Form** and submit both to astincolloquium2016@gmail.com by **Saturday 7 May 2016**. Synopses and submission forms must be sent as MSWord attachments, please do not supply them in the body of an email. You will be advised of the outcome and, if accepted, your abstract will be uploaded to the website.

SUBMISSION FORM

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Title of Paper / Presentation / Session to appear in program: Insights to systematic risk and diversification across a joint probability distribution

Author/s:

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3.

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What will your final submission be? Presentation and Paper Presentation Only

If selected, what level of knowledge will delegates attending your session require? (please select only) one

No prior knowledge General industry knowledge assumed Technical/specific industry knowledge assumed

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ABSTRACT

(TITLE OF PAPER / PRESENTATION TO APPEAR IN PROGRAM) **Insights to systematic risk and diversification across a joint probability distribution**

(Name of Author/s) **Weihaio Choo, Piet de Jong**

Key words: (enter up to 8 key words applicable to your abstract / paper / presentation) **Distortion risk; spectral risk; Euler allocation; systematic risk; diversification; layer; Value-at-Risk**

Purpose of your paper: (To assist delegates / readers searching for your paper on the website after the event, please enter a brief description (maximum 220 characters) on the purpose of your paper.)

This paper provides a novel method to understand and analyse systematic risk and diversification. Currently there is only an informal understanding of how diversification arises, e.g. through weak correlation overall, or weak correlation at the tail. There is no framework to exactly pinpoint the part of the joint probability distribution where diversification is coming from, and the extent of this diversification.

By understanding exactly where systematic risk and diversification are coming from, we will have a greater ability to effectively reduce risk, e.g. through purchase of reinsurance, pricing and derivatives.

Abstract: (Place text here using font size Calibri (Body) 11)

This paper analyses and develops insights to systematic risk and diversification when random, imperfectly dependent, losses are aggregated. Systematic risk and diversification are shown to vary across layers of component losses according to local dependence and volatility structures. Systematic risk is high and diversification is weak overall if high risk layers are heavily dependent on the aggregate loss. This result explains weak diversification observed in financial markets despite weak to moderate correlations overall. A coherent risk setup is assumed in this paper, where risks are measured using distortion and allocated using the Euler principle.

Note: If you are not presenting a paper for this Colloquium, please include as much detail as possible in your Abstract (maximum three pages) to enable delegates to prepare for your session.

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