

**The Working Group on Risk - CREAR, with the support of the IDS dpt, Institut des Actuaire, Labex MME-DII and the group BFA (SFdS), has the pleasure to invite you to the Seminar by:**

**Dr. Michel DACOROGNA (Zurich, Switzerland)**

Head of DEAR-Consulting

**January 24, 2017, 12:30pm – 1:30pm  
EEE - ESSEC La Défense (CNIT) – Amphi 220**

## **The Price of Being a Systemically Important Financial Institutions (SIFI)**

After reviewing the notion of Systemically Important Financial Institution (SIFI), we propose a first principles way to compute the price of the implicit put option that the State gives to such an institution. Our method is based on important results from Extreme Value Theory (EVT), one for the aggregation of heavy tailed distributions and the other one for the tail behavior of the Value-at-Risk (VaR) versus the Tail-Value-at-Risk (TVaR).

We show how to value in practice such an option by reconstructing the risk neutral probability from the implicit volatility of options traded in the market for the particular institution and give some values for typical banks. We will conclude by a proposal to make the institution pay the price of this option to a fund, whose task will be to guarantee the orderly bankruptcy of such an institution. This fund would function like an insurance selling a cover to clients.

Preprint at [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=2803113](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2803113)

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<http://crear.essec.edu/working-group-on-risk>

# Dr. Michel DACOROGNA

## DEAR-Consulting (Zurich, Switzerland)

**Dr. Michel Dacorogna** is head of DEAR-Consulting, a company advising financial institutions on actuarial and economic matters. He is the former scientific advisor to the chairman of SCOR. He conducts research in the field of insurance mathematics, capital management and risks. He presents models and capital management techniques to management and customers. He is Member of the board of the Research Center on Insurance Risk at the Nanyang Technical University of Singapore, he collaborates with the center on their various initiatives. Until July 2013, Michel was deputy group CRO of SCOR in charge of Solvency II and the internal model. He was at the origin of SCOR's internal model, which he developed with his team for more than 10 years.

Author and co-author of more than 75 publications in refereed scientific journals; he is often invited to present his results in international conferences and specialized seminars. His work is referenced in many publications. One of the papers he co-authored was the most quoted paper over 5 years in the Journal of Banking and Finance. His book: "An Introduction to High Frequency Finance" remains a reference in the field. He also lectures at the ETH and University of Zurich, at the University Ca' Foscari in Venice (Italy) and at the University of Turin (Italy) in their master of finance and insurance programs.

He received his Habilitation, Ph. D. and M. Sc. in Theoretical Physics from the University of Geneva in Switzerland and did a post-doc at the University of California in Berkeley.



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