Title: Inside the Solvency 2 Black Box: Net Asset Values and Solvency Capital Requirements with a Least-Squares Monte-Carlo Approach

Abstract: The calculation of Net Asset Values and Solvency Capital Requirements in a Solvency 2 context - and the derivation of sensitivity analyses with respect to the main financial and actuarial risk drivers - is a complex procedure at the level of a real company, where it is illusory to be able to rely on closed-form formulas. The most general approach to performing these computations is that of nested simulations. However, this method is also hardly realistic because of its huge computation resources demand. The least-squares Monte Carlo method has recently been suggested as a way to overcome these difficulties. The present paper confirms that using this method is indeed relevant for Solvency 2 computations at the level of a company.

Keywords: Net Asset Value. Solvency Capital Requirement. Solvency 2. Least-Squares Monte Carlo. Order Statistics. Participating Contract.

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