

Market-Consistent Risk Margins in Fair Value Loss Reserves

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Abstract

The market-consistent fair value of an insurer's unpaid claim obligations is a critical element in the determination of economic capital. It also ostensibly lies at the heart of the European Union's Solvency II Directive. Unfortunately, the Solvency-II-inspired fair value framework described in Wacek's 2008 paper, "Risk Margins in Fair Value Loss Reserves: Required Capital for Unpaid Losses and its Cost" [4] produces fair value loss reserves that are neither market-consistent nor additive. This paper introduces a minor modification to the Wacek framework that restores market consistency and additivity. The modification shifts the basis of the cost-of-capital risk margin embedded in the fair value loss reserve from an insurer's *own* solvency capital requirement with respect to its claim obligations (as prescribed by Solvency II) to the required *market-clearing* capital implied by those obligations, which depends not only on the internal characteristics of the unpaid claim portfolio but also on its correlation with the total market portfolio of unpaid claims. The modification forces the decoupling of the fair value loss reserve and required solvency capital calculations, which in the original Wacek framework (and Solvency II) are linked. The modified framework predicts that an insurer will be compensated for its cost of capital only to the extent that its reserve variability is correlated with that of the industry as a whole. As a result, an undiversified insurer may face economic and regulatory capital requirements beyond the level for which it can expect to be compensated.

Keywords: Additivity; Capital; Fair Value Loss Reserve; Market-Consistent; Risk Margin; Solvency II.