

# Mathematics & Insurance: An Illustration of a (sometimes) Complex Relationship

Onogre Simões<sup>1</sup>

<sup>1</sup>ISEG & CEMAPRE, Universidade de Lisboa, agnieszka@iseg.ulisboa.pt,  
onofre@iseg.ulisboa.pt

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Solvency II Regime, together with changes in the accounting standards, caused the valuation of future profit sharing in life insurance policies to become a problem with increasing interest and complexity. This happens because, apart from the structure of each contract itself, and the associated profit-sharing rules, the amount of profit to policy holders is a variable that depends on many other economic and financial factors. In this work we value the profit share in with-profit endowment policies, a particular case of practical relevance. The need to follow Solvency II makes the valuation a difficult task, as it requires estimating all and each of the cash flows generated by such contracts till the maturity of the whole portfolio. A stochastic approach is followed to perform the estimation.